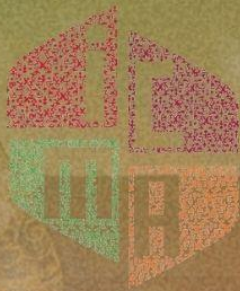




CONFERENCE

Schedule



The 8th ICMA SURE

**SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT**

**7th OCTOBER 2025
INSTITUTE FOR RESEARCH AND COMMUNITY SERVICE (LPPM)
UNIVERSITAS JENDERAL SOEDIRMAN
PURWOKERTO, CENTRAL JAVA
INDONESIA**

RUNDOWN THE 8th ICMA-SURE

Tuesday, 7 th October 2025		
Time*	Program	Note
08.00-09.00	Registration	Online check-in
09.00-09.15	Opening Ceremony	Welcome speech by Committee Chair/Head of LPPM and Rector of University Jenderal Soedirman
09.15-09.45	Keynote Speech	<ul style="list-style-type: none"> • 20-minutes presentation by Keynote Speaker • 10-minutes Q&A session
09.45-10.45	Plenary Session 1	<ul style="list-style-type: none"> • Two Invited Speakers (presentation: 15-20 minutes for each speaker) Dr. Ritthikorn Siriprasertchok (Thailand) & Dr. Tuomo Rautakivi (Finland) • 5-10 minutes Q&A for each
10.45-12.15	Parallel Session 1	<ul style="list-style-type: none"> • 5 sub-themes (5 parallel rooms of each sub-theme) • 9 presenters in each parallel room • 10 minutes per presenter (incl. Q&A)
12.15-13.15	Break	
13.15-14.15	Plenary Session 2	<ul style="list-style-type: none"> • Two Invited Speakers (presentation: 15-20 minutes for each speaker) Dr. Lin Ma (English) & Dr. János Kovács (Hungary) • 5-10 minutes Q&A for each
14.15-16.15	Parallel Session 2	<ul style="list-style-type: none"> • 5 sub-themes (5 parallel rooms of each sub-theme) • 12 presenters in each parallel room • 10 minutes per presenter (incl. Q&A)
16.15-16.30	Closing Ceremony	<ul style="list-style-type: none"> • Summary of conference highlights • Closing remarks

*Western Indonesian Time UTC+7

PREPARATION GUIDELINES FOR PRESENTATION

GUIDELINES FOR SUBMITTING POWERPOINT FILES –The 8th ICMA SURE

In the official **Program Book**, your name will be listed along with the following details:

Theme Code	Theme	Room	Session
A	Life and Applied Sciences	1 – 7	1 or 2
B	Health and Well-Being	8 – 11	1 or 2
C	Resilience and Sustainable Infrastructure	12 -14	1 or 2
D	Social, Economy and Justice	15 - 20	1 or 2
E	Sustainable Communities	21 - 24	1 or 2

To ensure smooth coordination and presentation flow, all presenters are required to follow these instructions when submitting your presentation files:

1. FILE NAMING FORMAT

Each PowerPoint file must be named using the following format:

ThemeCode-Room-Session-FullName

Example: in the book program you are scheduled:

CODE: A-1-1				
ROOM 1				
SESSION 1				
7th October 2025 10.45 - 12.15				
Moderator:				
Sub Theme: Life Applied Sciences 1-1				
No	Time	Author	Contributor	Title
1	10.45 - 10.55	Condro Wibowo	Susanto Budi Sulisty, Amin Fatoni	Enhancement of Mechanical Properties of Sodium Alginate-Based Bioplastics through the Incorporation of Silica, Bentonite, and Polyvinyl Alcohol Fillers

Please rename your file into:

A-1-1-Condro Wibowo

UPLOAD THE FILE

To submit your PowerPoint file properly, please follow these steps:

a. Refer to the Program Book

Find your name in the Program Book and note the following:

- **Theme Code** (A, B, C, D, or E)
- **Room Assignment** (e.g., Room1, Room2, etc..)
- **Session Number** (e.g., Session 1, Session 2)

b. Find the Corresponding Folder

Go to the shared folder provided by the committee and locate the subfolder that matches your:

- **Theme Code**
- **Room**
- **Session**

Folder Example:

If your theme is **Life and Applied Sciences (code theme: A)**, your room is **Room 1**, and your session is **Session 1**, then upload your file to:

A_Room1/Session1

Upload Your File

Place your correctly named PowerPoint file (e.g., **A-1-1-Condro Wibowo.pptx**) into that folder.

Submit your PPT file to the designated Google Drive folder no later than **6 October 2025**, and please make sure to upload it to the subfolder according to your session.

Google Drive submission link: bit.ly/PresenterPPTSubmissionFolder

This ensures your presentation is organized and ready for display during your scheduled session. If you need help locating your folder or verifying your session, feel free to contact the organizing team.

SCHEDULE FOR THE PARALLEL SESSIONS OF THE 8th ICMA SURE

CODE: A-1-1				
ROOM 1				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 1-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45			<i>preparation</i>
1	10.45 - 10.55	Ali Maksum	Gigieh Henggar Jaya, Ernes Septina Azizi	Characteristics of Fikobiliprotein Extraction of Gracillaria Verrucosa Seaweed by Materials and Extraction Time Using Ultrasonic Wave Methods
2	10.55 - 11.05	Noor Farid	Eni Sumarni, Fatichin Fatichin, Zulfa Ulinnuha	Genetic Parameters Estimation of Phalaenopsis Orchid Mutants Induced by Gamma Ray Irradiation
3	11.05 - 11.15	Agus Hery Susanto	Juwarno Juwarno	Profiles of Three Main Genes in the Biosynthesis of Vinblastine and Vincristine in Some Madagascar Periwinkle [Catharanthus Roseus (L.) G. Don] Cultivars
4	11.15 - 11.25	Kapti Riyani	Tien Setyaningtyas, Mardiyah Kurniasih, Ashila Salma Syamyundari	Crosslinked Chitosan-Tripolyphosphate as a Green Adsorbent for Methyl Orange Removal: Synthesis, Characterization, and Adsorption Performance
5	11.25 - 11.35	Budi Sustriawan	Nur Aini, Santi Dwi Astuti, Nadhira Septiana Ahnafiani, Pepita Haryanti, Hidayah Dwiyanti	Formulation of Flakes from Modified Sorghum with the Addition of Coconut Flour
6	11.35 - 11.45	Heris Kustiningsih	Muchammad Irfan Soleh	Effect of Slaughtering Techniques on the Efficiency of Blood Removal and Meat Quality of Broiler Chickens
7	11.45 - 11.55	Anung Riapanitra	Tien Setyaningtyas, Kapti Riyani	Graphene Quantum Dot-Modified BiVO ₄ As An Efficient Photocatalyst for Dye Degradation Under Visible Light
8	11.55 - 12.05	Karseno Karseno	Gunawan Wijonarko, Ike Sitoresmi Mulyo Purbowati, Alicia Azzahra	Effect of Starter Concentration and Stirring Frequency on the Physicochemical Characteristics of Coconut Aminos
9	12.05 - 12.15	Karseno Karseno		The Effect of Temperature and Fermentation Period on Physicochemical Characteristics of Coconut Aminos

CODE: A-1-2				
ROOM 1				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 1-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Retno Supriyanti	Rio Ferianto, Wahyu Widanarto, Bangun Wijayanto, Madya Ardi Wicaksono	Development of a Portable Screen-Printed Carbon Electrode (SPCE) Electrochemical Instrument for Conducting Electrochemical Measurements
2	14.25 - 14.35	Roni Fadilah	Elly Tugiyanti, Rosidi -	Impact of Microclimate and Heat Stress Index on Production Efficiency of Broiler Chickens in Open, Semi-Closed, and Closed Housing Systems
3	14.35 - 14.45	Dattadewi Purwantini	Setya Agus Santosa, Agus Susanto, Dewi Puspita Candrasari	ACTA-1 Gene Polymorphism Based on SNP in Local Duck
4	14.45 - 14.55	Jamrud Aminuddin	Mirda Prisma Wijayanto, Budi Pratikno	Automatization of Telescope Mounting as a New Moon Observer
5	14.55 - 15.05	Zusfahair Zusfahair	Shifa Sucita Ratnaningtyas, Dian Riana Ningsih, Niken Istikhari Muslihah, Bilalodin Bilalodin	Partial Purification Using Acetone Crude Urease Extract from Black Soybean Seeds (Glycine Max (L.) Merrill)
6	15.05 - 15.15	Uyi Sulaeman	Dea Ajeng Rahma Winarto Putri, Ari Asnani, Rini Larasati, Shu Yin	Chlorophyll-modified Ag ₃ PO ₄ for enhanced photocatalytic activity under visible light irradiation
7	15.15 - 15.25	Julia Febyati	Agus Riyanto, Joko Maryanto	The Effect of Combination of NPK Fertilizer Doses and Kasgot Organic Fertilizer on the Growth of Soybean Plants (Glycine max l. merr) on Ultisol Soil
8	15.25 - 15.35	Intan Megasari	Roy Andreas, Anung Riapanitra	Macronutrient Distribution in the Western Bali Sea: Seasonal Variability and the Role of The Indonesian Throughflow (ITF)
9	15.35 - 15.45	M. ALFIN KAMAL	Muhammad Arfani Fatmanto, Lulu Nurzahra, Shabrina Azmil Haque, Ghina Roudlotul Jannah, Intan Chaerunisa, Bambang Hendriya Guswanto	A Study of Viscoelastic Material Strenght with Fractional Calculus Approach

10	15.45 - 15.55	Dini Ryandini	Sri Martina Wiraswati, Meyta Pratiwi, Oedjijono Oedjijono, Dyah Fitri Kusharyati, Arif R Hikam, Dwiana M Yulianti, Aris Mumpuni, Yuriza Eshananda	The Bioprospection of Bacterial Consortium in Composting Water Hyacinth
11	15.55 - 16.05	Afik Hardanto	Santi Nur Handayani, Asna Mustofa	Design and Performance of a Coagulation-Flocculation Wastewater Treatment System for Electroplating Effluent
12	16.05 - 16.15	Rohmad Susilowarno	Elly Tugiyanti, Mochamad Sugiarto	Evaluation of Drinking Water Quality on Broiler Production Performance: A Case Study at CV. Berkah Putra Chicken



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CODE: A-2-1				
ROOM 2				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 2-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Muhamad Bata	Efka Aris Rimbawanto	The use of hibiscus leaf flour (HLF) and bamboo leaf flour (BLF) as natural feed additives based on ammoniated rice straw (RSA) on nutrient digestion and performance of local sheep as a fattening model in rural areas
2	10.55 - 11.05	Caribu Hadi Prayitno	Munasik Munasik, Agustinah Setyaningrum, Agus Susanto	Feed Digestibility and Daily Weight Gain of Jawarandu Goat Supplemented with Seaweed Flour and Chromium Organic
3	11.05 - 11.15	Desti Rizka Aziza	Santi Nur Handayani	Synthesis of C-cinamalcalix[4]resorcinarene Compounds and Activity Assay as Sunscreen
4	11.15 - 11.25	Endang Hilmi	Tjahjo Winanto, Rose Dewi, Ku Mohd Kalkausar Ku Yusof	Destilation Aquaponic's as Mangrove Rehabilitation to Reach Mangrove Sustainability in Permanently of Water Inundation
5	11.25 - 11.35	Rizqi Rizaldi Hidayat	Isnaini Prihatiningsih, Amir Yarkhasy Yulardi	Variability of Ocean Circulation and Water Mass Characteristics in Sulawesi Sea during ENSO Phase: A Numerical Modelling Approach
6	11.35 - 11.45	Eka Oktaviani	Suprayogi Suprayogi, Siti Nurchasanah, Agus Suroto	Genetic Relationship of Black Ginger (Kaempferia Parviflora Wall Ex. Baker) Mutants Irradiated with Gamma Rays Based on Morphological Traits
7	11.45 - 11.55	Siti Rukayah	W. Lestari, Moh Husein Sastranegara	Reproductive Biology of Javaean Barb(Systomus rubripinnis Valenciennes, 1842) in the Bodo River, Central Java as the Basis for Inland Fisheries Management
8	11.55 - 12.05	Santi Dwi Astuti	Dian Novitasari, Ervina Mela	Characterization of Physicochemical and Sensory Properties of Analog Rice Made from Modified Cassava Flour and Broken Rice Flour

CODE: A-2-2				
ROOM 2				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 2-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Fajar Husen	Nuniek Ina Ratnaningtyas, Juni Safitri Muljowati	In Silico Molecular Docking: Potential Activity of Flavonoid, Quercetin, and Gallic Acid from Coprinus Comatus Mushrooms as α -Amylase Enzyme Inhibitors
2	14.25 - 14.35	Qothrun Nada		Adsorption of Tartrazine Dye with Hydrotalcite Ni/Al Intercalated by Polyoxometalate K4[α -SiW ₁₂ O ₄₀]
3	14.35 - 14.45	Eko Setiyono	Sri Sukmaningrum, Priyo Susatyo, Atang Atang, Fathimah Nurfithri Hashifah	Growth Performance of Tilapia Fish Juvenile (<i>Oreochromis niloticus</i>) with Substitution Feed of Fifth-Instar Black Soldier Fly Maggot Flour.
4	14.45 - 14.55	Krissandi Wijaya	Ardiansyah Ardiansyah, Purwoko Hari Kuncoro, Irawadi Irawadi, Rifki Alfian	Crop Growth Model for Potato Seedlings under Different Growing Media and Organic Fertilizers
5	14.55 - 15.05	Fajar Husen	Nuniek Ina Ratnaningtyas, Juni Safitri Muljowati, Rina Sri Kasiamdari, Jiro Hasegawa Situmorang, Slamet Widiyanto	Bioactive Compound Activity of Abalone Oyster Mushroom (<i>Pleurotus cystidiosus</i>) Mushrooms as α -amylase enzyme Inhibitors: In Silico Molecular Docking
6	15.05 - 15.15	Achmad Wildan		Comparative Compositional Profiling of Fish Terasi Using Physicochemical and FTIR Approaches
7	15.15 - 15.25	Afifah Mariana	Sri Lestari, Sri Martina Wiraswati, Saefuddin Aziz	Screening of a PGPR and Nitrifying Bacteria for Heavy Metal Tolerance in Post-Mining Soils
8	15.25 - 15.35	Katon Muhammad	Satrio Prima Daru, Hasyim Asyari, Heri Irawan, Hurun'in	Optimization of Drying of Grains on Dryer Machines Using The Taguchi Method to Obtain The Best Water Content
9	15.35 - 15.45	Erwin Riyanto Ardli	Nuning Setyaningrum, Ani Widyastuti	Community Structure and Carbon Storage Potential of Mangrove at the Northern Coast of Java
10	15.45 - 15.55	Hendri Wasito	Nur Amalia Choironi	Simultaneous Determination of Curcumin and Piperine in Herbal Medicines Using High Performance Liquid Chromatography
11	15.55 - 16.05	Norman Arie Prayogo	Jefri Anjaini	Kisspeptin Elevates Estradiol and Up-regulates Reproductive Genes in Giant Gourami (<i>Osphronemus goramy</i>)

12	16.05 - 16.15	Purnama Sukardi	Lilik Setyaningsih	Effectiveness of Coating Materials in Nanoencapsulation of Hydrolyzed Tuna Fish Visceral Peptides
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**SUSTAINABLE DIGITAL TRANSFORMATION
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CODE: A-3-1				
ROOM 3				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 3-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Endang Mugiastuti	Loekas Soesanto, Ruth Rahayuniati, Deviana Primayuri	Isolation and Characterization of Pseudomonas fluorescens Group Collected from the Red Onion Rhizosphere, With Potential to Inhibit Fusarium Sp. Growth and Degrade Pesticides
2	10.55 - 11.05	Diana RUS Rahayu	Agatha Sih Piranti, Imam Widhiono, Eming Sudiana, Ani Widyastuti	Evaluation of Banjaran River Water Quality Based on Physical-Chemical and Biological Parameters in the Upstream, Middle, and Downstream Zones
3	11.05 - 11.15	Etik Wukir Tini	Sugiyono Sugiyono, Pudji Widodo, Rifqi Raditya Kurniawan, Rendie Prasetyo	Growth of Dendrobium stratiotes X Dendrobium lineale Orchid Plantlets During the Acclimatization Stage at Various Concentrations of Vitamin B1 and Foliar Fertilizer
4	11.15 - 11.25	Sakhidin Sakhidin	Endang Minarni, Rostaman Rostaman	Effect of Application of Fertilizers on Growth and Flowering of Lemon
5	11.25 - 11.35	Adi Amurwanto	Dian Bhagawati, Eko Setio Wibowo, Atang Atang, Agus Nuryanto	Molecular Profiling of CO1 Gene Diversity in Microworms Across Java: Bioprospecting Potential for Natural Resource Applications
6	11.35 - 11.45	Rokhmani Rokhmani		Ectoparasites on Tilapia Seeds Belonging to the Minasari Kutasari Fish Farming Group, Banyumas Regency
7	11.45 - 11.55	Ardhini Rin Maharning	Wilda Khafida, Yuriza Eshananda	Bio-Regenerative Capacity of Micro-Food Web Communities to Enhance Soil Health
8	11.55 - 12.05	Pudji Widodo	Alice Yuniaty	Diversity of Rare Trees Logged Down in Western Part of Central Java
9	12.05 - 12.15	Bambang Heru Budianto		Species of pest mites and predators on cassava plants (Manihot esculenta Krantz) at several altitudes

CODE: A-3-2				
ROOM 3				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 3-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Nuning Setyaningrum	Priyo Susatyo, W Lestari	Food Habits and Ecological Niche of Snakehead (<i>Channa striata</i>) in Bendung Gerak Serayu Banyumas, Central Java
2	14.25 - 14.35	Hidayah Dwiyantri	V Prihananto, Retno Setyawati	Antioxidant Activity of Coconut Sugar Coffee Drink Enriched with Black Rice Bran, Cardamom, and Ginger
3	14.35 - 14.45	Elly Tugiyanti	Ismoyowati Ismoyowati, Che Minh Tung, Irfan Fadhlurrohman	Supplementation of Waste Powder from Several Types of Mushrooms on Body Weight and Breast Circumference of KUB Chickens in the Starter Period
4	14.45 - 14.55	Ari Asnani	Undri Rastuti	The Assessment of <i>Strobilanthes cusia</i> Leaves as a Source of Natural Antioxidants
5	14.55 - 15.05	Mukhtar Effendi	Wahyu Tri Cahyanto	The Effect of Dysprosium Concentration on the Structure and Magnetic Properties of Strontium Ferrite as a Microwave Absorber
6	15.05 - 15.15	Zaroh Irayani	Sugito Sugito, Ika Maulita, Almas Gediana	Analysis of Clay Mineral Content from Different Weathering Levels of Rock (Case study from the landslide zone in Banjarmangu, Banjarnegara)
7	15.15 - 15.25	Aswi Andriasari Rofiqoh		Avitourism Potential and Bird Diversity in Karang Kemojing Village, Banyumas, Indonesia
8	15.25 - 15.35	Amin Fatoni	Irmanto Irmanto, Ely Setiawan, Dian Riana Ningsih	Multi-Cation Doped NiFe_2O_4 Nanoparticles for Enhanced Electrochemical Glucose Biosensors
9	15.35 - 15.45	Eman Sutrisna	Setiawati Setiawati	Sub-Chronic Nephrotoxicity Test of <i>Plantago Major</i> L. Extract
10	15.45 - 15.55	Hilmy Abdurrasyid Ammar	Mas Yedi Sumaryadi, Agustinah Setyaningrum, Dadang Mulyadi Saleh, Aras Prasetyo Nugroho, Chomsiatun Nurul Hidayah	The Application of Artificial Insemination Using Sexing Semen on the Reproductive Performance of Sakub Sheep

CODE: A-4-1				
ROOM 4				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 4-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Kartika Sari	Kartika Sari, Abiyyu Sayyid Muwaffaq, Evi Yulianti	Effect of Fly Ash-Derived Silica on the Functional Group Interactions and Ionic Conductivity of Chitosan/LiOH Solid Polymer Electrolytes Membrane
2	10.55 - 11.05	Imam Widhiono		Application of Tetragonula Biroi Colony Propagation Techniques for the Development of Stingless Bee Cultivation in the Klapaan Group, Langgongsari Village, Cilongok District
3	11.05 - 11.15	Imam Widhiono	Eming Sudiana	Colony Propagation of Tetragonula biroi by Producing Gyne for the Sustainability of Meliponiculture
4	11.15 - 11.25	Purwanto Purwanto	Lusiana Diah Astuti, Agus Riyanto	Productivity of Rice Plants (<i>Oryza sativa</i> L.) at Various Doses of N and Formulated Maggot Frass
5	11.25 - 11.35	Hernayanti Hernayanti	Nendyah Roestijawati	Ethanol Extract of Tomatoes in Increasing Enzymatic Antioxidants and Reducing Free Radicals in Rats Exposed to Bisphenol A
6	11.35 - 11.45	Purwanto Purwanto	Agus Sarjito, Risqa Naila Khusna Syarifah, Hanim Rahayuani Ratnaningsih, Lafi Na'imatul Bayyinah	Isolation and Characterization of PGPR Indigenous Sugarcane Rhizosphere
7	11.45 - 11.55	Dwi Nugroho Wibowo	Nuning Setyaningrum	Fish Diversity After Mass Mortality In 2022 At Serayu Movable Dam, Banyumas Regency, Central Java, Indonesia
8	11.55 - 12.05	Hery Pratiknyo	Supartoto -, Eming Sudiana	Diversity of Pest and its Correlation with Environmental Factors on Meliponiculture Tetragonula biroi in Banyumas Regency
9	12.05 - 12.15	Abdul Manan	Agus Suroto, Budi Prakoso, Lidia Sari, Tyas Puspita Oktaviani	Insects Feeding on the siam weed, <i>Chromolaena Odorata</i> , in Banyumas

CODE: A-4-2				
ROOM 4				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 4-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Indra Permanajati		The Changes of Mechanical Properties in The Pyroclastic Breccia Weathering, A Case Study of Soil Profile In Banjarmangu Area, Banjarnegara Regency
2	14.25 - 14.35	Indra Permanajati	Januar Aziz Zaenurrohman	Remote Sensing Analysis of Land Change in Segara Anakan
3	14.35 - 14.45	Wahyu Tri Cahyanto	Halexando Panama Putra, Budi Pratikno, Lusia Silfia Pulo Boli	A Density Functional Theory Study on The Hydrogenation of Anisole on a Basal Plane of MoS ₂ -based Catalysts
4	14.45 - 14.55	Furqon Furqon	Asna Mustofa, Irawadi Irawadi	Analysis of a Rack-Type Solar Dryer with Variations in Air Velocity and Rack Configuration
5	14.55 - 15.05	Daniel Wahyono	Saefuddin Aziz, Yuriza Eshananda, Dodi Safari	Prevalence of Staphylococcus Aureus Carriage by Healthy Children Under 12 Years of Age in The Batur Dieng Plateau, Banjarnegara Regency
6	15.05 - 15.15	Susanto B. Sulistyono	Krissandi Wijaya, Purwoko H. Kuncoro, Pepita Haryanti	Non-Destructive Estimation of Vitamin C and Total Soluble Solids in Mango Using a Triad Spectroscopy Sensor-Based UV-VIS-IR Portable Spectrometer
7	15.15 - 15.25	Gieks Sugiyono	Ruth Feti Rahayuniati, Hasna Dyah Kusumardani, Alda Wydia Prihartini Azar, Khavid Faozi, Rama Adi Pratama	Mapping of Banyumas Banana Toward The Designation of Banyumas Elite Banana Cultivar
8	15.25 - 15.35	Januar Aziz Zaenurrohman	Zufialdi Zakaria, Budi Muljana, Nana Sulaksana	The Relationship Between Soil Plasticity and Clay Minerals of Volcanic Rocks Weathering in Cimanggung, Indonesia
9	15.35 - 15.45	Eni Sumarni	Noor Farid, Gigieh Henggar Jaya	Air Temperature Distribution in Aeroponic and NFT System with Root Zone Cooling Application for Potato Seed Production in Tropical Lowlands
10	15.45 - 15.55	Naofal Dhia Arkan	Triana Setyawardani	Physicochemical Characteristics of Low-Fat, Fiber-Rich Synbiotic Yogurt

CODE: A-5-1				
ROOM 5				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 5-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Yulia Sistina	Suhestri Suryaningsih	Quality of Postmortem Source of Komet (Cyprinus carpio) Sperm before and After Storage for few Days in Fish Ringer Medium containing 1,5% Glycerine With or Without Honey
2	10.55 - 11.05	Oedjijono Oedjijono	Dini Ryandini, Dyah Fitri Kusharyati, Afifah Mariana	Formulation of Liquid Carrier Media Based on Natural Ingredients for Hydrolytic and Nitrifying Bacterial Consortium of Organic Waste Bioremediation Agent
3	11.05 - 11.15	Gratiana Wijayanti	Sorta Simanjuntak	Morphological and Histological Evaluation of the Placenta of Gravid Mice Treated with Bitter Melon Leaf Extract
4	11.15 - 11.25	Endang Srimurni Kusmintarsih	Trisowati Budi Ambarningrum	Genetic Structure and Phylogeny of Culicinae and Anophelinae Captured from Several Areas in Central Java
5	11.25 - 11.35	Juni Sumarmono	Novie Andri Setianto, Agus Susanto, Irfan Fadhlurrohman, Tasnim Hunin Abdelwhab Mohamed	Texture Modification of Goat Meat Sausages Using Enzymes
6	11.35 - 11.45	Nur Prihatiningsih	Puji Lestari	Managing Shallot Bacterial Leaf Blight with Rhizosphere Bacteria Applications and Different Planting Patterns
7	11.45 - 11.55	Heru Adi Djatkiko	Dhadang Wahyu Kurniaawan, Khavid Faozi	Formulation of Dispersible Tablets Based on Bacillus velezensis as a Candidate for Control of Rice Bacterial Leaf Blight
8	11.55 - 12.05	Isti Handayani	Nova Aprilia Putri, Aisyah Tri Septiana, Karseno Karseno, Retno Setyawati, Budi Sustriawan, Ita Amalia	Effect of Microwave-Assisted Extraction Time on the Color And Anti-Yeast Activity of Annatto Extracts Following Maceration
9	12.05 - 12.15	Dian Windy Dwiasi	Qothrun Nada, Dwi Kartika, Suyata -, Atik Kurniati	Adsorption of Tartrazine Dye with Hydrotalcite Ni/Al Intercalated by Polyoxometalate K4[α -SiW12O40]

CODE: A-5-2				
ROOM 5				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 5-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Bambang Hartoyo	Efka Aris Rimbawanto	Bamboo Leaf Extract as a Natural Feed Additive to Enhance Nutrient Digestibility in Heat-Stressed Broilers
2	14.25 - 14.35	Zahroh Almas Majid	Oedjijono Oedjijono, Taruna Dwi Satwika	The Ability of PGPR Isolates From Iron Sand Soil to Produce Exopolysaccharides in ATCC No. 14 Medium With Different Carbon Sources
3	14.35 - 14.45	Verina Daww	Oedjijono Oedjijono, Taruna Dwi Satwika	The Ability of Iron Sand Soil Bacterial Isolates to Produce Polyhydroxybutyrate (PHB) With Different Carbon Sources
4	14.45 - 14.55	Nurani Fara Diba	Oedjijono Oedjijono, Iman Budisantoso	Effect of Rhizosphere Bacterial Isolates From Iron Sand Plants on the Growth of Chili (CAPSICUM ANNUUM L.) Seedlings Using the Axenic Sand Culture Assay Method
5	14.55 - 15.05	Ratna Stia Dewi	Moh. Husein Sastranegara, Aulidya Nurul Habibah, Rosi Widarawati	Dual Filtration System: Integration of Physical-Chemical and Fungal-Based Biological Filters for Textile and Batik Wastewater Treatment
6	15.05 - 15.15	Taufik Budhi Pramono	Kasprijo Ksprijo, Petrus Hary Tjahja Soedibya, Lorichika Gustinda Larasati, Zulfas Haryo Fahkrury, Andiawan Hakim Davananda	Identification and Genetic Characterization of Barbonymus from Serayu River Basin, Indonesia, based on Mitochondrial Cytochrome c Oxidase Subunit I (COI) Gene
7	15.15 - 15.25	Wahyu Widanarto	Fasyah Ayu Khairunisaha, Dina Rahmawati	Effect of natural ferrite on microwave reflection loss and magnetic properties of coconut shell-based activated carbon
8	15.25 - 15.35	Adnan Mardika	Endang Hilmi, Tri Nur Cahyo	The Climate Maritime In The Coastal of South Cilacap
9	15.35 - 15.45	Hanif Nasiatul Baroroh	Najwa Mallika Paramitha, Salsadila Aldinata Maharani, Warsinah Warsinah	Chemometric Analysis of the Chemical Profile of Raw and Ripe Noni Fruit (MORINDA CITRIFOLIA L.) Juice and its Effect on Lymphocyte Proliferation

10	15.45 - 15.55	Munasik Munasik	Deni Setiadi, Prasetyo Prasetyo, Annistia Rahmadian Ulfah	The Forages Potential for Small Ruminant Feed on the Slopes of Mount Slamet in Banyumas Regency
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The 8th ICMA SURE

**SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT**

CODE: A-6-1				
ROOM 6				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 6-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Yugi Ahadiyat R.	Ervina Mela, Ahmad Fauzi	Application of Biochar Plus on of Physiological and Yield Characters of Sweet Potato
2	10.55 - 11.05	Woro Sri Suharti	Dina Istiqomah, Dini Sundari	The Effect of Nanoemulsion Biopesticide from Zingiber Purpureum Extract and Patchouli Oil Distillation Waste on Bacterial Leaf Blight and Rice Production
3	11.05 - 11.15	Dwi Kartika	Purwati Purwati, Zufahair Zufahair, Dian Riana Ningsih, Kyaza Azyckra Maha Arya	Synthesis of Silver Nanoparticles Using Bandotan Leaf Extract (<i>Ageratum conyzoides</i> L.) and Antibacterial Activity Testing
4	11.15 - 11.25	Saparso Saparso	Arief Sudarmaji, Muhammad Bachtiar Musthafa, Fatichin Fatichin	Physiological Aspects Of Vegetative Growth Of Melon (<i>Cucumis melo</i> L.) On Various Air Salinity And Foliar Flushing Volume In Coastal Sandy Soil
5	11.25 - 11.35	Dian Ningsih	Ely Setiawan, Purwati Purwati	Identification of Antimicrobial Peptides from Casein of Saanen Goat Milk (<i>Capra aegagrus</i>)
6	11.35 - 11.45	Trisnowati Budi Ambarningrum	Dwiana Muflihah Yulianti	Exploration of Entomopathogenic Bacteria from Cockroach Cadavers and Their Potential as Bioinsecticides for Controlling German Cockroaches, <i>Blattella germanica</i> L.
7	11.45 - 11.55	Eko Setio Wibowo	Endah Sri Palupi, Eko Setiyono, Hana Hana	Effect of Substrate Type on Growth and Metabolic Rate of <i>Diopatra clapedii</i>
8	11.55 - 12.05	Elly Tuti Winarni	Anastasia Endang Pulungsari	Freshwater Ornamental Crabs (<i>Geosesarma</i>) Diversity on the Western Slopes of Mount Slamet Based on Molecular Identification
9	12.05 - 12.15	Endang Warih Minarni	Mutala'liah Mutala'liah, Nurtiati Nurtiati, Deviana Primayuri, Rostaman Rostaman	Pathogenicity of <i>Fusarium oxysporum</i> on Five Plant Species from Different Families with Various Inoculation Methods

CODE: A-6-2				
ROOM 6				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 6-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Murni Dwiati	Alice Yuniaty, Agus Hery Susanto	Floral Morphology and Physiological Traits of Vanda limbata Blume 'Java' in the KPH Bojonegoro, East Java
2	14.25 - 14.35	Suprayogi Suprayogi	Ponendi Hidayat, Eka Oktaviani, Fikasya Cahya Lestari	Utilization Of Functional Marker Badh2.7 For Aromatic and Non-Aromatic Rice Differentiation Using Badex7-5 And Bradbury Primers
3	14.35 - 14.45	Indah Nuraeni	Rifda Naufalin, Juni Sumarmono, Condro Wibowo	Phenolic Content and Sensory Value of Synbiotic Goat Milk Kefir with Added Beetroot, Dragon Fruit, and Black Rice Extracts as a Functional Drink for Obesity Sufferers
4	14.45 - 14.55	Undri Rastuti	Moch Chasani, Senny Widyaningsih, Fanti Indriana Safitri, Biang Pratama, Dimas Saputra, Ririn Agustin	Nanoemulsions Formulation of Nutmeg Seed Essential Oil Fractions and Antibacterial Activity Evaluation against Staphylococcus aureus and Escherichia coli
5	14.55 - 15.05	Eman Sutisna	Dwi Nur Indah Sari, Fanni Kusuma Djati, Tuti Sri Suhesti	Antibacterial Activity of Clitoria Ternatea Flower Extract Against Post-Dental Extraction Bacteria: In Vitro and In Silico Analysis
6	15.05 - 15.15	Rama Adi	Muhamad Gifari, Mutala'liah, Prasmadji Sulistyanto	Induction of Somaclonal Variation through Silver Nanoparticles in Cavendish Banana
7	15.15 - 15.25	Kharisun Kharisun	Muhammad Rif'an	Application of Si Based on Wollastonite and Flying Ash Bottom Ash (FABA) on Sweet Corn in Marginal Ultisols
8	15.25 - 15.35	Sorta Basar Ida Simanjuntak	Wijayanti Gratiana Ekaningsih, Khofifah Liana Nur	Microalgae Supplementation as a Food Additive on Pepsin Activity and Body Composition of Tilapia (Oreochromis niloticus)
9	15.35 - 15.45	Dadan Hermawan	Suwandri Suwandri, Irmanto Irmanto, Aemi Syazwani Abdul Keyon	Chiral Separation of Sulconazole Using Cyclodextrin-Modified Micellar Electrokinetic Chromatography

CODE: A-7-1				
ROOM 7				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Life Applied Sciences 7-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Agus Nuryanto	Atang Atang, Dwi Nugroho Wibowo	Molecular Identification of Sparidae Members Collected from North Coast of West Java
2	10.55 - 11.05	Agus Nuryanto	Siti Rukayah	Barcoding of Fish Collected in the Downstream Og Ijo River During Dry Season
3	11.05 - 11.15	Ponco Iswanto	Khairun Nisa, Eva Vaulina Yulistia Delsi, Ely Setiawan	Ab Initio Calculation Method Selection for Polyethylene
4	11.15 - 11.25	ismoyowati Ismoyowati	Elly Tugiyanti, Rosidi Rosidi, Hermawan Setyo Widodo, Oriza Praba Albani	Differences in Morphometric Characteristics and their Correlations between Three Local Chicken Lines
5	11.25 - 11.35	ALYAA HUMAYRA		Kinetic Evaluation of Methylene Blue Adsorption on Ni-Alginate Beads
6	11.35 - 11.45	AZWINDA QONITA YUSRY		Modified Alginate Beads with Nickel Cross-Linking to Reduce Methylene Blue Contamination
7	11.45 - 11.55	Prita Sari Dewi	Ida Widiyawati, Sapt Nugroho Hadi	Genetic Variability of Turmeric (<i>Curcuma longa</i> L.) Based on Microsatellite Markers, Cytochrome 450-Based Analogue (PBA), and Morphological Traits
8	11.55 - 12.05	Hamdan Syakuri	Era Widya Utami, Anandita Ekasanti, Dewi Nugrayani, Emyliana Listiowati, Taufik Budhi Pramono, Petrus Hary Tjahja Soedibya, Purnama Sukardi	Fish Farmers' Awareness and Perspectives on Disease Control in Gourami (<i>Osphronemus gouramy</i>) Aquaculture: A Mixed-Methods Study in Banjarnegara Regency, Central Java
9	12.05 - 12.15	Hamdan Syakuri	Lintang Cyan Nugraheni, Rien Azizah Mufadhila, Era Widya Utami, Anandita Ekasanti, Dewi Nugrayani, Emyliana Listiowati	Molecular Identification of Bacterial Isolates from Diseased Tilapia (<i>Oreochromis niloticus</i>) Cultured in Banjarnegara Regency Using 16S rDNA Gene Sequencing

CODE: A-7-2				
ROOM 7				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Life Applied Sciences 7-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Zulfa Ulinnuha	Dyah Susanti, Agus Sarjito, Rama Adi Pratama	Morphological Characterization of Laeliinae (Orchidaceae) Genotypes
2	14.25 - 14.35	Hilmy Abdurrasyid Ammar	Dadang Mulyadi Saleh, Mas Yedi Sumaryadi, Aras Prasetyo Nugroho, Chomsiatun Nurul Hidayah, Mochamad Sugiarto, Rosidi Rosidi, Titin Widiyastuti	Room-Temperature Storage in Skim Milk-Glucose Diluent Reduces Motility, Fertility, and Fertile Period of Kampung Rooster Sperm
3	14.35 - 14.45	Anandita Ekasanti	Hamdan Syakuri, Emyliana Listiowati, Dewi Nugrayani	Molecular Identification of Pathogenic Bacteria in Diseased Cachama (Colossoma macropomum) Cultured in Banjarnegara, Indonesia
4	14.45 - 14.55	Titin Widiyastuti	Deni Setiadi	The Growth Dynamics and Blood Profile of Thin-Tailed Sheep Supplemented with Urea Multimineral Molasses Block (UMMB) Plus as an Effort to Improve Rumen Ecology
5	14.55 - 15.05	Petrus Hary Tjahja Soedibya	Lorichika Gustinda Larasati, Ren Fitriadi, Kasprijo Kasprijo	The Effect of Probiotic Candidate Bacteria on The Immune Response of Vannamei Shrimp (Litopenaeus vannamei)
6	15.05 - 15.15	Anggi Anggraeni		Heterojunction Formation of BiVO ₄ /g-C ₃ N ₄ Composite: Photocatalyst For Visible Light-Driven Degradation of Dye Waste
7	15.15 - 15.25	Harwoko Harwoko	Maria Tri Cahyaningtyas, Mochammad Reza Dista Permana	Antibacterial and Antibiofilm Potential of a Nudibranch-Associated Fungus, Penicillium citrinum K6
8	15.25 - 15.35	Meylida Ichsyani	fanni kusuma djati, mutia rochmawati, dian noviyanti agus imam	Biofilm Eradication Potential of Fractionated Abrus Precatorius Leaf Extract Against Cariogenic Streptococcus Species
9	15.35 - 15.45	Pepita Haryanti	Hidrotunnisa Hidrotunnisa, Nur Wijayanti, Mustaufik Mustaufik, Siswanto Siswanto, Irawadi Irawadi, Masrukhi Masrukhi, Dian Novitasari, Aisyah Ainur Rofiq, Fhika Dyan Kartika, Syarifah	Effect of Acidic, Basic, and Neutral pH Soaking Pretreatments on the Antioxidant Activity of Germinated Soybean

			Nabila	
10	15.45 - 15.55	Dian Palupi	Sri Lestari, Riska Desi Aryani, Hasna Dyah Kusumardani	Morphological Diversity of Seven Nephrolepis Species in Banyumas Regency, Central Java
11	15.55 - 16.05	Wilda Khafida	Hanim Rahayuani Ratnaningsih, Haris Maulani	Microbial Communities and Soil Properties Shaped by Fertilization Inputs in Agroecosystems



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CODE: B-8-1				
ROOM 8				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Health and Well-Being 8-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Kikin Windhani	Ratna Setyawati Gunawan, Dicky Satria Ramadhan, Anzar Alfat Firdaus	Analysis of the Determinant of Stunting from A Regional Perspective in Indonesia
2	10.55 - 11.05	Dwi Utami Anjarwati	James Wiera Satya Linardy, Rafif Atama Saputra, Anriani Puspita Karunia Ning Widhi, Rani Afifah Nur Hestiyani	Preliminary Surveillance of Antimicrobial Resistance in Sputum Isolates: Implications for Biofilm-Associated Chronic Infections
3	11.05 - 11.15	Agung Saprasetya Dwi Laksana	Lily Kusumasita Burkon, Yudhi Wibowo	Hepatotoxicity in Subchronic Lead (Pb) Exposure: Scooping Review
4	11.15 - 11.25	Teguh Jati Prasetyo		Obesity and Knowledge Gap: A Cross-Sectional Study on Body Composition and Nutritional Knowledge in Banyumas
5	11.25 - 11.35	Nafiisah Nafiisah	Joko Mulyanto, Muhamad Rifqy Setyanto, Ika Murti Harini, Nur Signa Aini Gumilas, Pugud Samodro	Renal Markers Associated with Diabetic Retinopathy in Patients with Type 2 Diabetes Mellitus in Banyumas, Central Java, Indonesia
6	11.35 - 11.45	Zulfa Fadhillah	Jajang Jajang, Renny Renny	Application of The NB-CAR Model in Dengue Hemorrhagic Fever Modelling
7	11.45 - 11.55	Haris Budi Widodo	Meylida Ichsyani, Restian Febi Andini, Mutia Rochmawati	Anti-Biofilm Potential of Carboxymethyl Chitosan-Encapsulated Torch Ginger Extract Nanoparticles in Oral Pathogens
8	11.55 - 12.05	Warsinah Warsinah		The Phytochemical Screening of Cinnamomum burmannii Extract and its Activity on β -Glucosidase
9	12.05 - 12.15	Afina Rachma Sulistyaning	Sifa Aulia Wicaksari, Katri Andini Surijadi	Analysis of Contributing Factors to Pre-Metabolic Syndrome in Young Adults

CODE: B-8-2				
ROOM 8				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Health and Well-Being 8-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Mite Setiansah	Haniyah Rizky Oktaviani, Ahmad Arijal Lutfi, Muhamad Muzakir	Inclusive Communication in The Digital Era: Media Challenges in Empowering Persons with Disabilities Against Seexual Violence
2	14.25 - 14.35	Mite Setiansah	Pandika Adi Putra, La Ode Muhamad Rizal Sangkalibu, Nadya Syifa Nayanti	Neuroscience Approaches to Enhancing Instagram Engagement for Sexual Violence Prevention
3	14.35 - 14.45	Fitranto Arjadi	Putri Mufidatul Khasanah, Wahyu Siswandari	The Effects of Various Types of Sleep Deprivation on Blood Levels of Low-Density Lipoprotein (LDL), Nitric oxide (NO), and The Histomorphological Features of Thoracic Aortic Endothelium in Male Wistar Rats
4	14.45 - 14.55	MM Rudi Prihatno	Fitranto Arjadi, Hajid Rahmadianto Mardihusodo, Qodri Santosa, Lily Kusumasita Burkon	Human Health Risk Assessment of Neurotoxic Metals (Manganese, Arsenic, and Lead) in Kawunganten District, Indonesia
5	14.55 - 15.05	Wahyudin Wahyudin	Setiawati Setiawati, Fajar Wahyu Pribadi, Rizqi Yanuar Pauzi	Therapeutic Potential of Artocarpus altilis Leaf Extract in Modulating Insulin, DPP-4, GLP-1, IL-1 β , and CRP in Obesity: An Experimental Study in Rats
6	15.05 - 15.15	Friska Citra Agustia	Umi Faza Rokhmah, Kifayati Rosiyanti Dewi	Glycemic Index, Glycemic Load, and Satiety Level of Jack Bean Sprout Milk with Stevia and Palm Sugar Sweeteners
7	15.15 - 15.25	Muhammad Yusuf Ilham	Diana Indrasanti, Mohandas Indradji, Lu'lu' Sahara Wusahaningtyas	Effect of Intensive and Semi Intensive Management System on the Incidence of Coccidiosis in Ongole Crossbreed Cattle
8	15.25 - 15.35	Nayla Alawiya	Nurani Ajeng Tri Utami, Alef Musyahadah Rahmah	Indonesian Ministry of Health's Regulatory Sandbox Policy on Digital Health Innovation
9	15.35 - 15.45	Imam Suswoyo	Mohandas Indradji	The Effect of Vitamin E Supplementation on Blood Cholesterol and Triglyceride Levels of Laying Ducks Under Village Farming

10	15.45 - 15.55	Muhammad Addin Rizaldi	Khaidar Ali, Yemima Sahmura Vividia	Microplastic Pollution In Kranji River and Its Public Health Potential Risks
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CODE: B-9-1				
ROOM 9				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Health and Well-Being 9-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Amalia Muhaimin	Anggita Puan Maharani, Arfi Nurul Hidayah, Diyah Woro Dwi Lestari, Miko Ferine, Raditya Bagas Wicaksono	Moral Distress among Clerkship Students at The Faculty of Medicine Universitas Jenderal Soedirman
2	10.55 - 11.05	Lutfatul Latifah	Nina Setiawati, Aprilia Kartikasari, Reza Fajar Amalia	Help-Seeking Behavior for Mental Health Among Pregnant Women in Rural Indonesia
3	11.05 - 11.15	Daniel Joko Wahyono	Saefuddin Aziz, Yuriza Eshananda	Prevalence of Staphylococcus aureus Carriage by Healthy Children under 12 years of Age in the Batur Dieng Plateau, Banjarnegara Regency
4	11.15 - 11.25	Rumpoko Wicaksono	Condro Wibowo, Mustaufik Mustaufik, Muhammad Shandy Althof, Muhammad Ramdhani Wibowo, Rizky Nur Rahmadian	Effect of Torch Ginger (Etlingera elatior) Extract on the Mechanical and Physical Properties of PVA-Starch/Nanocellulose Bioplastics
5	11.25 - 11.35	Ruth Feti Rahayuniati	Nurtiati Nurtiati, Dina Istiqomah, Ruly Eko Kusuma Kurniawan, Dumaris Prikila Purba	Endophytic Bacteria—Induced Systemic Resistance Enhances Banana Defense Against Bunchy Top Disease (BTD)
6	11.35 - 11.45	Siwi Pramata Mars Wijayanti	Dwi Sarwani Sri Rejeki, suratman suratman	Understanding Control Barriers and Required Interventions in a High-Burden Tuberculosis Setting, Indonesia
7	11.45 - 11.55	Untung Susilo	Farida Rachmawati, Balqis Nadia Rahmah	Effect of Different Temperature on Pepsin and Trypsin-like Activities in Tropic Eel (Anguilla bicolor McClalland)
8	11.55 - 12.05	Sri Nurlaela	Devi Octaviana, Novita Endang Fitriyani, Rosita Dwi Jayanti	Prevalence and Characteristics of TB-DM Patients in Banyumas District, 2025
9	12.05 - 12.15	Dwi Sunu Widyartini	Endang Aeiyani Setyowati	Potential of Efferfescient Spirulina platensis Supplementation in Improving Hematological Profiles as a Basis for Malaria-Associated Anemia Management

CODE: B-9-2				
ROOM 9				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Health and Well-Being 9-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Iwan Purnawan	Eman Sutrisna, Sidik Awaludin	Non-Pharmacological Interventions for Psychological Outcomes in Invasive Cardiac Procedures: A Systematic Review of Randomized Controlled Trials
2	14.25 - 14.35	Nur Signa Aini Gumilas	Lantip Rujito, Wahyudin Wahyudin, Ghea De Silva, Tendi Novara, Annida Nurhidayah, Debora Paramita Naibaho	Characteristics of Chronic Kidney Disease Patients at RSUD Prof. Dr. Margono Soekarjo
3	14.35 - 14.45	Hery Winarsi	Friska Citra Agustia, Dilla Ambar Dewi	Flavonoid and Vitamin C Antioxidants Content of Sprouted Edamame Yoghurt with Turmeric and Aromatic Ginger: A Functional Drink for Dyslipidemia Patients
4	14.45 - 14.55	Heny Ekowati	Shuntia Maslaha, Eva Dania Kosasih, Esti Dyah Utami, Nuryanti Nuryanti	Potential Adverse Effect of Oral Antidiabetic Drug in Outpatients at Puskesmas Cilongok 1 Banyumas
5	14.55 - 15.05	Dyah Purnamasari	Atikah Proverawati, Wahyu Vera Wardani	Teacher's Food and Nutrition Literacy in Primary School: Mixed Methods Study
6	15.05 - 15.15	Nur Ulfah	Siti Harwanti, Dian Anandari	The Effect of Stretching Exercise to Reduce Work Fatigue at Office Employees in Purwokerto
7	15.15 - 15.25	Daffa Noor Ainy	Santi Nur Handayani	Determination of the Total Flavonoid Content from Shallot Peel Extract (<i>Allium cepa</i> Var. <i>Agregatum</i>)
8	15.25 - 15.35	Eva Rahayu		Instrument Development to Predict Preventive Behaviors of Non-Communicable Diseases among Adolescents Using the Theory of Planned Behavior Model
9	15.35 - 15.45	Mariama Abdulai	Elly Tugiyanti, Ismoyowati Ismoyowati, Sri Rahayu, Bambang Hartoyo, Rosidi Rosidi, Agus Susanto	Impact of Dietary Synbiotic Supplementation on Growth Performance, Hematological Indices, and Intestinal Health of Broiler Chickens Challenged with <i>Escherichia coli</i>

CODE: B-10-1				
ROOM 10				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Health and Well-Being 10-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Aisyah Apriliciciliana Aryani	Jajang Dede Mulyani, Qoni Oktanti, Pramesthi Widya Hapsari	Nutrition Education and Assistance for Pregnant Women Based on Local Wisdom as a Prevention of Chronic Energy Deficiency (CED) in Bojongsari Village, Banyumas Regency
2	10.55 - 11.05	Aisyah Apriliciciliana	Jajang Dede Mulyani, Pramesthi Widya Hapsari, Qoni Oktanti	Improving Maternal Nutrition Knowledge through Local Wisdom-Based Education: Evidence from Pregnant Women with Chronic Energy Deficiency in Banyumas, Indonesia
3	11.05 - 11.15	Indah Nuraeni	Koernia Nanda Pratama, Budi Sustriawan, Nur Wijayanti	Physicochemical Characteristics of Synbiotic Goat Milk Kefir with Added Beetroot and Dragon Fruit Extracts as an Alternative Drink for Obese People
4	11.15 - 11.25	Erna Kusuma Wati	Setiyowati Rahardjo, Dian Anandari	MATCH-Based Stunting Prevention Intervention for Children Aged 0-24 Months: Analysis of the Role of Cadres in Providing Nutritional Information and Support
5	11.25 - 11.35	Elviera Gamelia	Arrum Firda Ayu Maqfiroch, Windri Lesmana Rubai, Ifa Najiyati, Arif Kurniawan	Depression Levels and Demographic-Psychosocial Profiles: A Descriptive Study among Junior High School Students in Banyumas Regency
6	11.35 - 11.45	Synta Fadlilah	Amanda Saviolla	Building Healthy Habits: Strengthening PHBS Culture in the Children of Indonesian Migrant Workers in Malaysia
7	11.45 - 11.55	Dwi Rejeki	Siwi Wijayanti, Bella Wiranti	Screening and Transmission Tuberculosis in Islamic Boarding Schools in Banyumas District
8	11.55 - 12.05	Niken Paramarti Dasuki	Sukarso Sukarso, Ahmad Rofik	Accelerating the Anti-Stunting Program: Analysis of the Inclusiveness of the Stunting Reduction Program in Villages Priorities for Accelerating Integrated Stunting Reduction in Banyumas Regency

9	12.05 - 12.15	Vitasari Indriani	Teguh Triyono, Tri Lestari	The Role of Haptoglobin Profile and Blood Group Genotype in Assessing Hemolysis and Transfusion Burden in β -Thalassemia Major
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CODE: B-10-2				
ROOM 10				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Health and Well-Being 10-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Lasmedi Afuan	Nurul Hidayat, Ipung Permadi, Rizky Budi Saputra	Machine Learning-Based Fall Detection for the Elderly: A Support Vector Machine (SVM) Approach
2	14.25 - 14.35	Siti Nurhayati	Devi Octaviana, Hafiidhaturrahmah, Hafiidhaturrahmah, Mochammad Agri Triansyah, Nurina Mayasari	Navigating Health Information System Resilience in the Digital Era: A Scoping Review
3	14.35 - 14.45	Siti Nurhayati	Devi Octaviana, Hafiidhaturrahmah, Hafiidhaturrahmah, Mochammad Agri Triansyah, Nurina Mayasari	Assessing Digital Resilience in Primary Health Care: A Structural Framework
4	14.45 - 14.55	Lita Heni Kusumawardani	Endang Triyanto, Asep Iskandar	Integrating Self-Help Group Education and Complementary Therapy via Mobile Application: A Community-Based Strategy to Strengthen Self-Care Behavior in Older Adults with Hypertension
5	14.55 - 15.05	Nuraeni Ekowati	Daniel Joko Wahyono	The Potential of Pleurotus cystidiosus Bioactive Compounds in Inhibiting the Proliferation of Cervical and Colorectal Cancer Cells
6	15.05 - 15.15	Hanif Nasiatul Baroroh	Khairina Rahmania Prayoga Putri, Esti Dyah Utami	Molecular Interactions of Active Compounds from Zingiber Ottensii with Protein Targets in Rheumatoid Arthritis
7	15.15 - 15.25	Ratna Stia Dewi	Probo Hardini, Tri Rachmanto Prihambodo, Afifah Mariana	Fungal Biodegradation of Liquid Ammonia Waste Using Immobilized Isolates from Poultry Rice Husk
8	15.25 - 15.35	Dhadhang Wahyu Kurniawan		Preparation, Characterization, and Toxicity Study Of Channa Striata Extract Alginate Nanoparticles on HepG2 Cells
9	15.35 - 15.45	Annas Sumeru	Desiyani Nani, Afina Rachma Sulistyning	Measuring Renal Function (Knowledge and Management) among Youth Karang Taruna Member in Banyumas Regency: Instrument Development and Validation

10	15.45 - 15.55	Setiyowati Rahardjo	Erna Kusuma Wati, Colti Sistiarani	The Relationship Between Knowledge and Quality of Life of Pregnant Women
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The 8th ICMA SURE

**SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT**

CODE: B-11-1				
ROOM 11				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Health and Well-Being 11-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Endah Sri Palupi	Eko Setio Wibowo, Atang Atang, IGA Ayu Ratna Puspitasari, Diani Mentari, Aulidya Nurul Habibah	Phytochemical Compounds of the Purple Colored Gradation of the Local Cultivar of Sweet Potato Tuber from Banyumas Regency
2	10.55 - 11.05	Wahyu Siswandari	Nur Signa Aini Gumilas, Thianti Sylviningrum, Tri Lestari	The Potential Effect of Ciplukan (<i>Physalis angulata</i> L.) Extract on Neutrophil Gelatinase-Associated Lipocalin (NGAL) Levels in Diabetic Rat Models
3	11.05 - 11.15	Dyah Woro Dwi Lestari	Amalia Muhaimin, Wahyu Djatmiko, Ernasiwi Astri Oktavilia	More Than Just Pills : Lived Experiences of Adult Thalassemia Patients on Iron Chelation Therapy
4	11.15 - 11.25	Dian Ningsih	Ely Setiawan, Zufahair Zufahair	Cytotoxicity of Bioactive Peptides from Cowpea (<i>Vigna unguiculata</i> L. Walp) Against Breast Cancer Cells (MCF-7)
5	11.25 - 11.35	Fajar Rubiyanti		Systematic Review: Midwives' Perceptions of Patient Safety and Their Impact on Patient Outcomes
6	11.35 - 11.45	Arya Dwiki Ramadhan	Titin Widiyastuti, Krismiwati Muatip, Sri Rahayu	Dietary Replacement Effect of Fish Meal by Maggot (<i>Hermetia illucens</i>) Hydrolysate on Performance and Nutrient Digestibility in Native Chicken Feed
7	11.45 - 11.55	Siti Khoerunnisa	Masayu Alfiyah Mutiara, Jassy Berly Fitriani, Nabila Rifatul Izzah, Livia Sa'diatun Nisa	Preparation of Photoelectrochemical BIVO ₄ /rGO Sensor From Pet Waste for H ₂ O ₂ Detection as a Biomarker of Chronic Obstructive Pulmonary Disease
8	11.55 - 12.05	Edi Santoso	King Anugrah Wiguna, Wafirotul Masfuah, Sal Sabila Rizka Tama	Communication Strategy for Stunting Prevention and Management in Sokaraja Subdistrict, Banyumas
9	12.05 - 12.15	Lantip Rujito	Joko Mulyanto, Teguh Haryo Sasongko	Validation of Circulating miR-4435, miR-566, miR-219a, and miR-485-5p Dysregulation in Thalassemia: Evidence from an Independent Cohort

CODE: B-11-2				
ROOM 11				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Health and Well-Being 11-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Muhamad Syafei	Galih Santiko, Septi Rakhmawati, Duaji Nursantiko	Unlocking the Power of Multilateral Movement : Examining Elementary School Students Based on Territories Utilizing Fundamental Movement Skills Method
2	14.25 - 14.35	Panuwun Joko Nurcahyo	Arfin Deri Listiandi, Yudhi Teguh Pambudi	The Effectiveness of Small-Sided Games Training on Improving the Physical and Basic Technical Abilities of Soccer Players at the UKM Fikes Unsoed
3	14.35 - 14.45	Rifda Naufalin	Gunawan Wijonarko, Nuke Faradhila, Ananda Yasmin Nisa, Yuri Rossa Aprina	Physicochemical Characteristics of Ripened Cheese with the Addition of Kecombrang (Etlingera elatior) Powder as a Milk-clotting Agent
4	14.45 - 14.55	Kusnandar Kusnandar	Didik Rilastiyo Budi, Panuwun Joko Nurcahyo	Relationship Between Intelligence Quotient (IQ) and Body Mass Index (BMI) with The Motor Skills In Junior Volleyball Athletes
5	14.55 - 15.05	Hartiwi Diastuti	Ari Asnani, Muhamad Salam Fareza	Identification and Antibacterial Assays of Bioactive Compounds from Kaempferia parviflora Rhizome Extracts
6	15.05 - 15.15	Sidik Awaludin	Iwan Purnawan, Galih Noor Alivian, Arif Imam Hidayat, Tri Wisesa Soetisna	Development of A Smartphone-Based Arrhythmia Intervention Model on The Quality of Life of Cardiac Surgery Patients: A Research and Development
7	15.15 - 15.25	Hikmi Muharromah Pratiwi	Made Sumarwati, Koernia Nanda Pratama	Effectiveness of Case-Based Concept Map on Critical Thinking and Nursing Process Confidence among Professional Nursing Students
8	15.25 - 15.35	Izka Sofiyya Wahyurin	Hiya Alfi Rahmah, Pramesthi Widya Hapsari	Anthropometry Indices in Adolescent Girls with Anemia
9	15.35 - 15.45	Arif Setyo Upoyo	Yunita Sari, Hasby Pri Choiruna	Determinant Factors of Stroke Risk Awareness in Hypertensive Patients

CODE: C-12-1				
ROOM 12				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Resilience and Sustainable Infrastructure 12-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Rili Windiasih	Siti Kunarti	Strategy of Internalizing Pancasila Values through Educational Game Media in Strengthening National Education Resilience
2	10.55 - 11.05	Gema Ikhsal Setyo Aji	Suroso Suroso	Climate Change Impact Modelling on Low Flow Discharge in the Tajum Watershed Using HEC-HMS Based on IPCC AR6 Scenarios
3	11.05 - 11.15	Niko Siameva Uletika	Viansri Mawar Pitaloka, Amanda Sofiana, Rani Aulia Imran, Radita Dwi Putera	Improving the User Experience of Electric Vehicle Charging through PLN Mobile: Evidence from Indonesia
4	11.15 - 11.25	Lina Rifda Naufalin	Yanuar Eko Restianto, Aldila Krisnaresanti, Farah Revani Nazarina	Mapping Economics Teachers' Needs in Developing a Hots-Oriented TPACK Self-Assessment Model
5	11.25 - 11.35	Arief Bakhtiar Darmawan	Dias P. S. Mahayasa, Arum Tri Utami, Syazwana Syazwana, Umi Mariyah	Facilitating Access to Education for Children of Indonesian Migrant Workers in Malaysia: A Comparison of Sabah and Kuala Lumpur
6	11.35 - 11.45	Ade Bagus Ramdhanu	Triyani Triyani, Renny Renny	The Laplacian Energy on the Generalized Total Graph of the Comutative Ring of Integers Modulo
7	11.45 - 11.55	Suryanto Suryanto	Syifa Ula Hamidya, Siti Harwanti, Muhammad Syah Fibrika Ramadhan, Lieza Dwianasari Susiawan	The Effect of Safety Behavior, Energy Intake and Work Environment on Increasing Productivity of Micro, Small and Medium Enterprises in Purbalingga Regency
8	11.55 - 12.05	Arief Sudarmaji	Agus Margiwiaytno	Design of Mobile Irrigation Machine on Ditch Channels for Dry Land Farming
9	12.05 - 12.15	Gandjar Pamudji	Arwan Apriyono, Sumiyanto Sumiyanto, Widhiatmoko Herry Purnomo, Dwi Andy Priyanto	The Influence of Bacillus Subtilis Addition on The Compressive Strength of Polypropilene Waste Aggregate Concrete

CODE: C-12-2				
ROOM 12				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Resilience and Sustainable Infrastructure 12-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Sehah Sehah	Abdullah Nur Aziz, Lusia Silfia Pulo Boli, Muhammad Rizki Ariyanto	Utilization of Magnetic Anomaly Data for Identification of Fractured Groundwater Aquifers; a Case Study from Sumbang District, Banyumas Regency, Indonesia
2	14.25 - 14.35	Lasmedi Afuan	Agus Darmawan, Raden Demas Amirul Plawirakusumah, Putranto Surya Wijanarko	Smart Waste Sorting through Advanced Computer Vision: Optimizing YOLOv11 for High-Accuracy Waste Classification
3	14.35 - 14.45	hari prasetijo		Analitical Design of a Three-Phase Permanent Magnet Synchronous Generator for Pico-Hydro Power Generation
4	14.45 - 14.55	Fiqri Yudistira	Elisa Fijanila Sembiring, Sanidhya Nika Purnomo, Wahyu Widiyanto	Analysis of Extreme Flood Districts Modeling in Demak, Kudus, Pati and Rembang Districts Using SNAP and HEC-RAS 2D Software
5	14.55 - 15.05	Vera Nur Fadiya	Yuliyanti Dewi Lestari, Anggi Nur Pratama, Zaldi Feby Gumelang, Bambang Hendriya Guswanto	A Conformable Model of Viscoelastic Material Deformation
6	15.05 - 15.15	Voilla Oktaviani	Agus Maryoto, Nor Intang Setyo Hermanto	Effect of Particle Fineness of Ceramic Roof-Tile Waste Powder as Cementitious Material on Mortar Performance
7	15.15 - 15.25	Imam Wibowo	Agus Maryoto, Nor Intang Setyo Hermanto	Effect of Ceramic Roof Tile Waste Powder Substitution on The Setting Time and Compressive Strength of Concrete
8	15.25 - 15.35	Ferensa Oemry		Neutron Scattering and X-ray Spectroscopy for Catalyst Characterization in Second-Generation Biofuels
9	15.35 - 15.45	Sanidhya Nika Purnomo	Elisa Fijanila Sembiring, Fiqri Yudistira, Wahyu Widiyanto	Application of SNAP and HEC-RAS 2D for Extreme Flood Risk Assessment in Northern Central Java: A Case Study in Demak, Kudus, Pati, and Rembang

CODE: C-13-1

ROOM 13

SESSION 1

7th October 2025 10.45 - 12.15

Theme: Resilience and Sustainable Infrastructure 13-1

No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Ulfah Nurdiani	Alpha Nadeira Mandamdari, Akhmad Rizqul Karim, Syahrul Ganda Sukmaya	Farmer Resilience in Cardamom Farming: Evidence from Banyumas Regency
2	10.55 - 11.05	Agnes Fitria Widiyanto	Khaidar Ali, Muhammad Addin Rizaldi, Saudin Yuniarno	Family-Based Local Potential Model as an Efforts to Handle Waste Emergency
3	11.05 - 11.15	Yogi Ramadhani	Priswanto Priswanto, Widhiatmoko Herry Purnomo, Mulki Indana Zulfa, Adrian Axel Prayunda, Dita Ayu Anggraini	Measurement and Verification of Energy Performance at the Rectorate Building of UNSOED: Stage 1 - Baseline Energy Assessment and Saving Potential
4	11.15 - 11.25	Winasis Winasis		Optimization of grid-connected PV operations considering electricity tariffs
5	11.25 - 11.35	Wahyu Widiyanto	Amru Muyassar Raharjo, Sanidhya Nika Purnomo, Muhammad Azmy Ikhsani	Optimization of Tsunami Evacuation Routes in Pelabuhanratu Using Dijkstra's Algorithm
6	11.35 - 11.45	Siti Nurul Hijanah	Yulia Azizah Sulaeman, Agni Lili Ariyanti, Gangsar Edi Laksono	Inorganic Waste Composition and Integrated Solid Waste Management Strategies in Purwokerto
7	11.45 - 11.55	Agatha Sih Piranti	Kirani Aprianti, Elly Proklamasiningsih, Aris Mumpuni, Nurdin Nurdin, Diana Retna Utarini Suci Rahayu, Ing Nasihin	Utilization of Water Hyacinth for The Production of Humic Acid Powder (An Effort to Control Eutrophication of "Embung Lereng" Waters of Grabag Purworejo)
8	11.55 - 12.05	Tamad	Purwanto -	A Study of Heavy Metal Bioconcentration Factor (BCF) for The Safety of Several Horticultural Commodities in The Dieng Andisols Soil of Central Java
9	12.05 - 12.15	Aryuni Yuliantiningsih	Wismaningsih Wismaningsih	Ocean Governance in the BBNJ Era: Indonesia's Policies for the Conservation of Marine Biodiversity Beyond National Jurisdiction"

CODE: C-13-2				
ROOM 13				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Resilience and Sustainable Infrastructure 13-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Indro Prakoso	Ardi Jumanto, Sugeng Waluyo	Fog Catching: A Fog Harvesting Tool Design Using the Theory of Inventive Problem Solving (TRIZ)
2	14.25 - 14.35	Budi Pratikno	Sherlinda Meiyana Karisma, Supartoto Supartoto, Jajang Jajang, Mashuri Mashuri	Method and Model on Problem of Outlier Data
3	14.35 - 14.45	Amanda Sofiana	Agus Musthofa, Katon Muhammad	Vehicle Routing Problem in Blood Distribution Using a Hybrid Sweep Algorithm and Genetic Algorithm
4	14.45 - 14.55	Sachrul Iswahyudi	Fadlin Fadlin, Dwi Rachmawati, Mochammad Aziz, Yogi Adi Prasetya, Siswandi Kastari, Ryan Dwi Wahyu Ardi	Meteoric Water Isotope Analysis: A Comparative Study Between LMWL and GMWL in Purwokerto-Purbalingga Basin
5	14.55 - 15.05	Suhestri Suryaningsih	Yulia Sistina	Scanning Electron Microscope (SEM) of the Spermatozoa From Four Species of Cyprinids
6	15.05 - 15.15	gathot sudibyo	Nanang Wariyatno, Bagyo Mulyono, Yanuar Haryanto, Hsuan Hu, Fu Hsiao, laurencius nugroho	Flexural Response of RC T-Beams Strengthened with Polymer Cement Mortar: An Analytical Approach
7	15.15 - 15.25	Nur Wijayanti	Laksmi Putri Ayuningtyas, Nofiyati Nofiyati, Achmad Wildan	Diffusion on Science and Technology Application and The Use of Automatic Sieving Machines to Improve The Quality and Quantity of Palm Sugar by The Nira Sari Murni Cilongok Group
8	15.25 - 15.35	Arif Darmawan		Climate Literacy in ASEAN: A Comprehensive Literature Study on Regional Approaches to Climate Education and Public Awareness
9	15.35 - 15.45	Fadlin Fadlin	Januar Aziz Zaenurrohman, Yogi Adi Prasetya, Sachrul Iswahyudi, Prasetya Kusuma Djati, Ranum Rizqiyatul Azizah	Preliminary Study on The Geological Controls of Gold Mineralization in Sedimentary Rocks of The Rambatan Formation, Banjarmangu Area, Banjarnegara, Central Java

CODE: C-14-1

ROOM 14

SESSION 1

7th October 2025 10.45 - 12.15

Theme: Resilience and Sustainable Infrastructure 14-1

No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Rovario Aslam Hadi		CFD Analysis of The Effect of Blade Number and PSA on Savonius Wind Turbines for Aerodynamic Performance Optimisation and Energy Sustainability Support
2	10.55 - 11.05	Redityo Januardi	Paulus Setyo Nugroho, Anni Khamidah	Structural Equation Modeling to Capture Digital Technology Needs in Construction Project Time Control Through a Comparison of the Perceptions of Supervision Consultants and Construction Management Consultants
3	11.05 - 11.15	Farzand Abdullatif	Fuad Abdulloh	Design of a Smart Automated Switching Multi-Channel, Multi-Configuration Resistivity Meter
4	11.15 - 11.25	Indra Herdiana	Ammar Syafiqkhan Dewantara, Mutia Nur Estri, Glagah Eskacakra Setyowisnu, Isnu Aji Saputro	Clusterisation of Electricity Power Supply in Central Java by Productivity Using Fuzzy and Crisp Mean-based Clustering
5	11.25 - 11.35	Mirda Prisma Wijayanto	Arifin Achmad, Muflihatun Muflihatun, Rizqi Fadli	Tsunami Evacuation Route Optimization in Pangandaran: A Dijkstra's Algorithm Approach to Disaster Mitigation
6	11.35 - 11.45	Rio Dhani Laksana	Ade Banani, Rio Dhani Laksana	Corporate Governance, Socially Oriented Investments, and Firm Value: Evidence from Forestry Sustainability Practices in Central Java
7	11.45 - 11.55	Lilik Muzdalifah	Agus Sugandha, Mashuri Mashuri, Agung Prabowo, Noor Sofiyati, Dian Puspita	Implementation of the Critical Path Method-Cuckoo Search (CPM-CS) in Project Scheduling Optimization eith Term Cost Balancing
8	11.55 - 12.05	Rani Aulia Imran	Hasyim Asyari, Mohammad Ghiyats Athoillah, Salsa Afni Laily	Climber Risk Profile Mapping and Cluster Analysis of Climbing Routes: A Case Study of Mount Sindoro, Temanggung, Central Java
9	12.05 - 12.15	Purwanto Bakti Santoso	Marsid Marsid, Nastain Nastain, Adi Candra	Shoreline Change Analysis Using Satellite Imagery: A Case Study of the Cilacap Coast

CODE: C-14-2				
ROOM 14				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Resilience and Sustainable Infrastructure 14-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	preparation		
1	14.15 - 14.25	Wahyu Widanarto	Dayu Ridho Purnomo, Reggy Aghatha Ningtyas, Dina Rahmawati, Kartika Sari	Effect of reduction temperature on reduced graphene oxide from coconut shell synthesized by the hydrothermal method for supercapacitors
2	14.25 - 14.35	Priswanto Priswanto	Daru Tri Nugroho, Arief Wisnu Wardhana	The Modeling and Kinematic Analysis for the Stability of PID-Based Navigation Control System in Hexapod Robots
3	14.35 - 14.45	Bilalodin Bilalodin	Puji Lestari, Santi Nurhandayani, Zufahair Zufahair, Siti Nurjanah	Microdosimetric Evaluation of BNCT Using Simultaneous BPA and BSH in Single and Multi-Cell Models with PHITS Simulation
4	14.45 - 14.55	Suroso Suroso		Simulation of Climate Change Impacts On Low-Flow Discharge in The Nusantara Capital Region Using HEC-HMS Based on IPCC AR6 Scenarios
5	14.55 - 15.05	Suroso	Agung Cahyadi Putra, Hari Prasetyo	An Analysis Study of Three-Level Common-Emitter CSI Equipped with Low Frequency Transformer for Grid Connected Photovoltaics
6	15.05 - 15.15	Suroso Suroso		Modeling the Impact of Climate Change on Low Flow Discharge in the Tajum Watershed Using the HEC-HMS Model Based on the IPCC AR-6 Scenario
7	15.15 - 15.25	Nastain Nastain	Nanang Wariyatno	Run-Up Height in a Box Culvert-Type Breakwater for Coastal Protection
8	15.25 - 15.35	Didik Rilastiyo Budi	Kusnandar Kusnandar, Panuwun Joko Nurcahyo	Development of Hologram-Based Learning Media to Improve Literacy and Motor Skills of Primary School Students

CODE: D-15-1				
ROOM 15				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Social, Economy and Justice 15-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Mochamad Sugiarto	Danang Nur Cahyo, Yusmi Nur Wakhidati, Agus Darmawan	Economic, Social, and Environmental Sustainability in Sheep Farming: Evidence from Highland Farmers in Banjarnegara Regency
2	10.55 - 11.05	Ade Irma Anggraeni	Devani Laksmi Indiyastuti, Bambang Triyono, Ahmad Nasori	The Concept of Emotional Branding in the Marketing of Urban Heritage Tourism Destinations
3	11.05 - 11.15	Ade Irma Anggraeni	Adi Indrayanto, Oman Rusmana	Authentic Leadership for Social Capital Development among Rural Enterprise Managers in the Face of Digital Era Challenges
4	11.15 - 11.25	Thahrina Azriah	Baharudin Harya Pamungkas	Digital-Based Strategy for Enhancing the Performance of State Civil Apparatus through Work From Anywhere
5	11.25 - 11.35	Krismiwati Muatip		Profiling Customers and Their Preference Toward Sakub Sheep Breed in Brebes Regency, Indonesia
6	11.35 - 11.45	Rini Widianingsih	Dewi Susilowati, Dona Primasari	The Impact of Accounting Application on The Financial Performance of SMES: A Bibliometric Study
7	11.45 - 11.55	Ely Triasih Rahayu		An Exploration of the Use of Sonkeigo by Migrant Caregivers in Japan: Linguistic and Social Perspectives
8	11.55 - 12.05	Hartati Hartati	MUAMMAR KADAFI	Keigo and Japanese Family Communication: A Phenomenon of the Maintenance or Shift of Honorific Language within Intra-Family Communication in Japan
9	12.05 - 12.15	Riefki Fajar Ganda Wiguna	Eka Yunita Liambo	Applying Media Information Literacy to Foster University Students' Critical Thinking Skills in Argumentative Writing: A Case Study at Jenderal Soedirman University

CODE: D-15-2				
ROOM 15				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Social, Economy and Justice 15-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Malinda Aptika Rachmah	Lutfi Zulkifli, Dewanti Risa Utami	Stakeholder Perceptions of the Failure of Organic Rice Cultivation in Purbalingga Regency from the Financing Aspect
2	14.25 - 14.35	Ratna Setyawati Gunawan	Barokatuminalloh Barokatuminalloh, Agus Arifin, Goro Binardjo, Anzar Alfat Firdaus, Hutama Wijaya	Financial Literacy of Students in the Development Economics Program at Universitas Jenderal Soedirman
3	14.35 - 14.45	Tri Rini Widyastuti	Soetji Lestari, Edy Suyanto	Learning Moral Socialization from the Bonokeling Community
4	14.45 - 14.55	Lynda Susana Widy Ayu Fatmawaty	Dinar Danahari Amalia	Cultural Identity Empowerment through Transnational Education for Migrant Children in Malaysia
5	14.55 - 15.05	Hariyadi Hariyadi	Tri Wuryaningsih, Joko Santoso, Nalfaridas Baharuddin	Women Question Religion: A Study of the Representation of Women in the Films "Tuhan Izinkan Aku Berdosa (2023) and "Siksa Kubur" (2024)
6	15.05 - 15.15	Hendri Restuadhi	Ratna Dewi, Puri Septiana	The Approach of Power to Violence: Cases of Violence in Higher Education
7	15.15 - 15.25	Fajar Hidayat	Elly Tugiyanti, Yusmi Nurwakhidati	Analysis of Business Cost Efficiency on Broiler Production Performance of Partnership Broiler Farmers in Majalengka and Kuningan Districts West Java
8	15.25 - 15.35	Tri Prasetyoningsih	Indriyati Hadiningrum, Ika Sholikhah	A Language Maintenance: Code-Mixing Communication of the Indonesian Diaspora
9	15.35 - 15.45	Sri Lestari	Ary Yunanto, Esih Jayanti	Investment Decisions Based on Capital Structure as a Mediator of the Effect of Financial Flexibility on SMEs' Financial Performance

10	15.45 - 15.55	Wiwiek Rabiatal Adawiyah	Hijroh Rokhayati	Knowledge Sharing, Social Performance in Indonesian SMEs: The Role of Innovation
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**SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT**

CODE: D-16-1				
ROOM 16				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Social, Economy and Justice 16-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Puji Lestari	Dona Primasari, Siti Maghfiroh	Innovation, Learning Organizations, and MSME Performance: The Moderating Role of Networking
2	10.55 - 11.05	Catharina Widiartini	Nicholas Edwin Handoyo, Ismiralda Oke Putranti, Fajar Wahyu Pribadi	Comparison of Concept Map Scores among Various Learning Styles According to the Visual-Aural-Read/Write-Kinesthetic (VARK) Model
3	11.05 - 11.15	Aidatul Chusna	Arizal Mutahir, Wiman Rizkidarajat	Halal Encounters: The Dynamics of Korean Street Food in Contemporary Indonesia
4	11.15 - 11.25	Arif Andri Wibowo	Muhammad Farid Alfarisy, Suharno Suharno	Social Capital & Achievement of Food Security in Farming Households
5	11.25 - 11.35	Wisnu Widjanarko	Juni Sumarmono, Bambang Tri Harsanto, Mekar Dwi Anggraeni, Eman Sutrisna, Alpha Nadeira Mandamdari, Muhammad Yamin, Zaroh Irayani, Ardiansyah	Analysis on the Implementation of Internal Quality Assurance System at Universitas Jenderal Soedirman
6	11.35 - 11.45	Suliyanto Suliyanto	Weni Novandari, Refius Pradipta Setyanto	The Effect of Use of Social Media on Marketing Performance with Social Commerce Branding as Mediation
7	11.45 - 11.55	Yusida Lusiana	Kuntarto -, Idah Hamidah, Dyah Tjaturrini, Nunung Supriadi, Tribuana Sari	From Classroom to Workplace: Qualitative Insights into Students' Readiness for Multicultural Work Environments
8	11.55 - 12.05	Arif Haryadi	Kusni Ingsih, Artha Febriana	Look at the sequential mediation analysis: The consequence of employer branding: Job satisfaction, organizational identification, relational psychological contract, and employee retention
9	12.05 - 12.15	Dona Primasari	Puji Lestari, Siti Maghfiroh	Implementation of the Web-Based Accounting Application Si Apik in the Preparation of Financial Statements for MSMEs (Sor Theory Approach)

CODE: D-16-2				
ROOM 16				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Social, Economy and Justice 16-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Dyah Raina Purwaningsih		Solutions to Translation Errors in Fiction Texts: An Analysis of the Role of Context and Translator Competence
2	14.25 - 14.35	Cut Misni Mulasiwi	Bambang Triyono, Dian Isnawati, Dwita Aprilia Floresti	Implementation of the Culturally Responsive Teaching (CRT) Approach to Enhance Self-Efficacy and Pedagogical Competence of Preservice Teacher Education Students
3	14.35 - 14.45	Zaenudin Zaenudin	Ajeng Aditya Listyani, Wasis Singgih Sasono, Nanda Rahayu Haryadi, Pritha Arintha Natasaputri	The Existence of Bonokeling's Customary Inheritance Law Amidst Legal Pluralism
4	14.45 - 14.55	Rio Dhani Laksana	intan Shaferi, Alisa Tri Nawarini	The Influence of Climate Change and Energy Consumption on Economic Growth in Indonesia
5	14.55 - 15.05	Lilis Siti Badriah	Arintoko Arintoko	The Influence of Climate Change and Energy Consumption on Economic Growth in Indonesia
6	15.05 - 15.15	Bowo Sugiarto	Sofa Marwah, Khairu Roojiqien Sobandi, Neneng Sobibatu Rohmah	Religious Care and Situated Agency: The Politics of Care by an Indonesian Faith-Based NGO for Migrant Workers in Hong Kong
7	15.15 - 15.25	Muslih Faozanudin	Denok Kurniasih, Titi Rahmawati, Lilis Sri Sulistiani	Retrospective Policy Analysis of Village Fund Priorities in Strengthening Food Security at the Village Level
8	15.25 - 15.35	Sofa Marwah	Oktafiani Catur Pratiwi, Titis Perdani	Women's Representation in Three Cycles of Simultaneous Local Elections in Central Java: A Portrait of Political Vulnerability
9	15.35 - 15.45	Setya Wahyudi	Rani Hendriana, Dwi Hapsari Retnaningrum, Dwiki Oktobrian, Eva Dwi Dayati, Eriene Chindy Octaviandini, Palupi Rantau, Rohadhatul Aisy	Home Visit in The Juvenile Justice: A Comparative Study Between The Indonesian Juvenile Justice Law and International Instruments
10	15.45 - 15.55	Mintarti Mintarti	Abdul Rohman, Thahrina Azriah, Rin Rostikawati	The Internalization of Belief-Value Education in Adherent Families: Patterns, Processes, and the Challenge of Regeneration

11	15.55 - 16.05	Retno Kurniasih	Sudarto Sudarto, Ade Banani	Passion Meets Creativity: A Dual Pathway to Entrepreneurial Intention
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**SUSTAINABLE DIGITAL TRANSFORMATION
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CODE: D-17-1				
ROOM 17				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Social, Economy and Justice 17-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Nuryanti Nuryanti	Nana Sutikna	Women's Empowerment Through Religious-Based Community Organizations: A Case Study of Salimah and Muslimat in Banyumas Regency
2	10.55 - 11.05	Kadar Pamuji	Noor Asyik, Kartika Winkar Setya, Aditya Riza Dharmawan	Reformulation of Legal Policy Regulating Regional-Owned Enterprises (BUMD) Within the Framework of Regional Autonomy Implementation in Indonesia
3	11.05 - 11.15	Irlan Supriyanto	Elly Tugiyanti, Novie Andri Setianto	Socio-Economic Analysis and Profitability Assesment of Commercial Layer Farming: Evaluating Production Costs, Revenue, BEP, R/C Ration, and ROI
4	11.15 - 11.25	Muhammad Syaiful Anwar	Ndaru Satrio, Rafiqs Sari	Discretion Beyond Authority Unlawful Acts by The Government in Issuing Mining Permits
5	11.25 - 11.35	Imam Santosa	Ali Rokhman	Strengthening Social Capital for Empowerment: A Model for Undocumented Indonesian Migrant Workers in Malaysia
6	11.35 - 11.45	Mia Fitria Agustina	Ririn Kurnia Trisnawati, Eka Dyah Puspita Sari, Dian adiarti	Supporting Characters in Seri Antologi Fabel Nusantara: How Animal Supporting Characters Contribute in Promoting Indonesian Values
7	11.45 - 11.55	AGUS SUPRIYANTO	Yohan Wismantoro, Sih Darmi Astuti	AI-Driven Management and its Psychological Impact: Petty Tyranny, Toxic Workplaces, and Emotional Exhaustion in e-Commerce Platforms
8	11.55 - 12.05	Rio Dhani laksana	Ary Yunanto, Dian Purnomo Jati	Building SME Marketing Performance through Entrepreneurship Orientation, Product Innovation, and Social Media: The Role of Competitive Advantage as an Intervening Variable
9	12.05 - 12.15	Tevi Melviana	Elly Tugiyanti, Novie Andri Setianto	Analyzing the Impact of Corn Import Ban Policy on Production Cost Fluctuations and Feed Prices in the Indonesian Feedmill Industry

CODE: D-17-2				
ROOM 17				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Social, Economy and Justice 17-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Nurani Utami	rani hendriana, dessi puspitasari, Helmi Gunawan, Ajeng Pramesti	Accessibility of The Criminal Justice System for The Community in Pangandaran Regency in Fulfilling Access to Justice
2	14.25 - 14.35	Ghassani Irsia Khairina	Bimo Fajar Hantoro, Fathimah Azzahro, Dwi Tirtousada, Anandyta Nur Khoirunnisa	Public Use for Private Interest: The Paradigm Shift on Land Acquisition for National Strategic Projects in Indonesia
3	14.35 - 14.45	rizky.amalia.putri@unsoed.ac.id 1	Nicolaus Petrus Likuwatan Werang, Khayu Rohmi, Frida Nurrahma Masturi Masturi	The Education Models of Public Policy and Legal Education to Foster Competence for the Young Generation: Empirical Evidence from Indonesia
4	14.45 - 14.55	Najmudin Najmudin	Luthfi Mahasin, Sofiatul Khotimah, Cut Misni Mulasiwi, Ramita Kholifaturrohman	Examining The Effect of Price Volatility and Foreign Currency Exchange on Trading Liquidity: Cross-Country Analysis Using Panel ARDL Approach
5	14.55 - 15.05	sutarmin sutarmin	Siti Badiatul Umroh, Sugeng Riyanto, Tria Putri Yani, Khoirun Nisa Ambary	The Role of Digital Supply Chain Agility in Enhancing MSME Performance in The Digital Era
6	15.05 - 15.15	Christina Tri Setyorini	Krisnhoe Rachmi Fitrijati	Financial Reporting as a Social Contract: A Phenomenological Study of Local Government Apparatus in Purbalingga Regency, Indonesia
7	15.15 - 15.25	Bayu Jati	Djeimy Kusnaman, Novie Setianto	Mapping Complex Situations in Agribusiness Cooperatives Using Systems Thinking
8	15.25 - 15.35	Poppy Arsil	Wita Ramadhanti	Local or imported coffee? A Study of Consumer Preferences in Coffee Shops and Restaurants
9	15.35 - 15.45	Fuad Dudin	Rahayu Widiyanti, Titin Widyastuti	Broiler Feed Market Share Enhancement Strategy Based on Farmers' Needs Analysis Through Market Survey in The Jabodetabek Region
10	15.45 - 15.55	Intan Shaferi	Alisa Tri Nawarini, Cut Misni Mulasiwi	Financial Management Practices Based-Fintech Literacy on the Influence of Funding Access and Entrepreneurial Ability on SME Financial Performance

11	15.55 - 16.05	Viviana Mayasari	Devani Laksmi Indyastuti, Muhammad Taufiq, Sofiatul Khotimah	The Characteristics of Lecturers, Their Engagement and Contributions within Higher Education Institutions, and The Strategies for Developing Competencies in Relation to The Pedagogical Competence Model
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CODE: D-18-1

ROOM 18

SESSION 1

7th October 2025 10.45 - 12.15

Theme: Social, Economy and Justice 18-1

No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Dian Bayu Firmansyah	Octaria Putri Nurhayani, Monika Herliana	Video-Based Shadowing in a CLIL Framework: Enhancing Japanese Language Proficiency and Cultural Literacy
2	10.55 - 11.05	Yogi Prihatsongko	Yohan Wismantoro, Sih Darmi Astuti	The Role of Virtual Reality in Enhancing Teachers' Professional Competence: Systematic Literature Review
3	11.05 - 11.15	Muhammad Farid Alfarisy	Muhammad Farid Alfarisy, Arif Andri Wibowo	Governance Indicators in Public Institutions: Do they accurately reflect the quality of public institutions?
4	11.15 - 11.25	Chusni Hadiati	Rosdiana Puspita Sari, Usep Muttaqin, Nadia Gitya Yulianita	Individual Challenges in Learning Speaking: A Review for a More Engaging Speaking Class
5	11.25 - 11.35	Eva Dwi Dayati	Eriene Chindy Octaviandini, Luthfi Kalbu Adi, Palupi Rantau, Rohadhatul Aisy	Legal Regulations and Activities of Griya Abhipraya in the Community Development System
6	11.35 - 11.45	Ibtsam Awad Ali	Hirani Justina, Suryo Budi Santoso	The Impact of Commitment, Discipline and Job Satisfaction on Employee Performance
7	11.45 - 11.55	Tri Nugroho Adi	Agus Ganjar Runtiko, Petrus Imam Prawoto Jati	Participatory Communication in Coastal Community Empowerment for Ecotourism Development
8	11.55 - 12.05	Agus Arifin	Rakhmat Priyono, Goro Binardjo	Business Environment: Conduct Strategy Analysis of Coconut Sugar Small Enterprises

CODE: D-18-2

ROOM 18

SESSION 2

7th October 2025 14.15 - 16.15

Theme: Social, Economy and Justice 18-2

No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Muhammad Fauzan	Hermawan Prasojo, Wismaningsih Wismaningsih	Legal Reconstruction of Executive Power Relations to Redefine the Role of Deputy Regional Heads in Indonesia's Decentralized Government System
2	14.25 - 14.35	Wiman Rizkidarajat	Aidatul Chusna, Kholifatus Saadah	Sociological Challenges of the Creative Economy in Banyumas Regency: Youth Transitions and the Unfinished Creative City
3	14.35 - 14.45	Triani Arofah	Wita Ramadhanti, Oman Rusmana	Digitalization and Green Business Practices: The Sustainability Journey of Banyumas MSMEs
4	14.45 - 14.55	Faishal Permana	Sunendar Sunendar, Rifki Andi Novia, Budiyoko Budiyoko, Muhamad Solekan, Anggi Fitriah Cahyaningsih	An Analysis of the Soybean Supply Chain in Banyumas: A SCOR Framework Approach
5	14.55 - 15.05	Ummi Nurjamil Baiti Lapiana	Wiekandini Dyah Pandanwangi, Sri Nani Hari Yanti	From Imagination to Reality: Social Issues in Djokolelono's Children's Stories
6	15.05 - 15.15	Siti Junawaroh	Ika Oktaviana, Ummi Lapiana, Aldi Aditya	The Language Attitudes of Jenderal Soedirman University Students: The Role of Study Programs in Fostering Positive Attitudes
7	15.15 - 15.25	Tri Lisiani Prihatinah	Sulistyandari Sulistyandari	The Legal Status of Child Marriage in Several Countries
8	15.25 - 15.35	Wahyu Adhi Saputro	Irene Kartika Eka Wijayanti, Anggi Fitriah Cahyaningsih, Ernes Septia Azizi, Hurun'in Hurun'in, Kunandar Prasetyo	Farming Efficiency and The Effects of Using Pranoto Mongso in Rice Cultivation Among Farmers (Case Study of The Serayu Dam Area in Indonesia)
9	15.35 - 15.45	Riris Ardhanariswari	Fathimah Azzahro, Enny Dwi Cahyani, Muhammad Syaiful Anwar	Public Participation in The Legislative Process: Questioning 'Directly Affected Parties' in The Draft Law
10	15.45 - 15.55	Agus Raharjo	Dwi Hapsari Retnaningrum, Rahadi Wasi Bintoro, Helmi Gunawan, Fahmi Athalla Firdaus	Hacktivism and Cyberterrorism from a Human Rights Perspective

11	15.55 - 16.05	Agus Suroso	Ascaryan Rafinda	Antecedents of Small and Medium Business Financing through Online Lending Platforms: A Cross-Country Study of Indonesia, Hungary, and Romania
12	16.05 - 16.15	Arief Bakhtiar Darmawan	Agus Haryanto, Ulil Afwa, Noraini Noraini	How to Protect the Educational Rights of Children of Indonesian Migrant Workers in Malaysia



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CODE: D-19-1				
ROOM 19				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Social, Economy and Justice 19-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Ascaryan Rafinda	Eliada Herwiyanti, Negina Kencono Putri, Agus Suroso, Putri Purwaningtyas, Hasal Al Jafa	The Impact of Financial Knowledge on Poverty in a Developing Archipelago: An Empirical Study of Indonesia
2	10.55 - 11.05	Muhamad Riza Chamadi	Kuntarto Kuntarto, Muhamad Baedowi	Campus Da'wah Movements and Their Role in Preventing Student Violence in Indonesian Higher Education
3	11.05 - 11.15	Soetji Lestari	Tri Wuryaningsih, Salsabila Damayanti	Sharing to be Recognized: The Practice of Sharing Religion-Based Content Among Elderly Women
4	11.15 - 11.25	dwi hapsari	Yafi Surya	The Correlation of Restorative Justice with Pancasila as the Local Wisdom of the Indonesian Nation
5	11.25 - 11.35	Wiwik Novianti	Caecilia Menzelthe, Wisnu Widjanarko, Nana Sutikna, Hafizh Faikar Agung Ramadhan	Internal Communication, Trust, and Organizational Learning: A Case Study of Paguyuban Budaya Bangsa
6	11.35 - 11.45	Supriyanto Supriyanto	Nunung Nurhayati, Niken Larasati, Abdul Aziz, Eliz Rosmyana Karen	Regional Inequality and Sustainability: Building Inclusive Growth in Indonesia through Dynamic Panel Analysis
7	11.45 - 11.55	Hijroh Rokhayati	Kiky Sirejeki, Negina Kencono Putri, Lina Rifda Naufalin, Retno Kurniasih	Unveiling the Research Impact: Sustainable Development Goals Frameworks.
8	11.55 - 12.05	Nur Choirul Afif	Larisa Pradisti, Asmi Ayuning Hidayah, Faiz Nuha Ilmawan	From Minimalism to Personalization : Strengthening Digital Value Accentuate to Improve Sales Performance of B2B SMEs in the Age of Digital Detox
9	12.05 - 12.15	Suharno Suharno	Yudha Aryo Sudibyo, Sheilka Janice Leandro, Dwi Asih Septi Wahyuni	Determinants of Social Return on Investment (SROI) in Community-Based Tourism Village Development (Case Study: Pekunden Tourism Village, Banyumas)

CODE: D-19-2

ROOM 19

SESSION 2

7th October 2025 14.15 - 16.15

Theme: Social, Economy and Justice 19-2

No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Denok Kurniasih	Paulus Israwan Setyoko	"Entrepreneurial Government" As a Strategy In Developing The Tourism Sector in Banyumas Regency
2	14.25 - 14.35	Hurun'in Hurun'in	Najwa Fairuz Gandasari Atmaja	Inventory Planning Analysis Using the Continuous Review System Method in the Cotton, Kapok, and Ester Raw Material Warehouse
3	14.35 - 14.45	Lusi Suwandari	Candra Suparno	Improving the Innovation Performance of Iconic Products from Small and Medium Enterprises (SMEs) in Purbalingga Regency in a VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) Business Environment
4	14.45 - 14.55	Bambang Agus Pramuka	Poppy Dian Indira Kusuma, Gista Rismayani	Mechanisms of Sharia Investor Satisfaction: The Roles of Islamic Financial Literacy, Financial Self-Efficacy, and Sharia Investment Decisions
5	14.55 - 15.05	Dindy Darmawati Putri	Irene Kartika Eka Wijayanti, Altri Mulyani, Lutfi Zulkifli, Kunandar Prasetyo	Indonesia's Rice Sufficiency: An Analysis of Availability Trends Toward Sustainable Food Security
6	15.05 - 15.15	Imam Suhardi	Lynda Susana WAF, Ulul Huda	Dialectics of Ritual and Incantation in Cowogan Art in Banyumas Regency, Central Java
7	15.15 - 15.25	Hibnu Nugroho		Reconstruction of Asset Seizure as an Effort to Save Assets from Corruption Crimes
8	15.25 - 15.35	Idha Sihwaningrum	Charista Aprilia Putri, Mutia Nur Estri, Indra Herdiana	A Forecasting of Rupiah Exchange Rate to Us Dollar by Using Markov Chain and Cheng Methods
9	15.35 - 15.45	Dwita Darmawati	Indah Mayang Sari	The Influence of Entrepreneurial Self-Efficacy on Green Entrepreneurial Intention: The Moderting Role of Perceived Social Support
10	15.45 - 15.55	Abdul Nasihuddin	Manunggal Kusuma Wardaya, M. Syaiful Anwar	Democracy Without Competition: Single Candidates in Local Elections and the Crisis of Representation in Indonesia

11	15.55 - 16.05	Aldila Krisnaresanti	Suwatno Suwatno, Hari Mulyadi, Dian Herdiana Utama	Leading with Vision: The Role of Transformational Leadership in Enhancing Differentiated Learning Readiness among Economics Teachers
12	16.05 - 16.15	Abdul Aziz Ahmad	Diah Setyorini Gunawan, Anzar Alfat Firdaus, Khalid Eltayeb Elfaki	Identification of Economic Potential in Sokaraja, Banyumas



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CODE: D-20-1				
ROOM 20				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Social, Economy and Justice 20-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Indah Setiawati	Djeimy Kusnaman, Asrie Uny Lestari	Contribution of Waste Management Results to Revenue at The Integrated Waste Processing Facility Based on Environment and Education Banyumas
2	10.55 - 11.05	Farida Nuryantiningsih		Changes in Meaning in Conversations on Social Media: A Semantic Study
3	11.05 - 11.15	Shadu Satwika Wijaya	Thahrina Azriah, Tissa Silvia, Ranjani Ranjani, Rizky Amalia Putri, Khayu Rohmi, Titi Rahmawati	Transformation of Local Public Services to Support the Achievement of SDGs (A Study in Banyumas Regency, Indonesia)
4	11.15 - 11.25	Poppy Arsil	Wita Ramadhanti, Altri Mulyani, Lis Syafitri, Dina Nabila Cantika Zaen	Measurement of Chicken Slaughterhouse Behavior toward Halal Certification Using Cluster Analysis
5	11.25 - 11.35	Itsna Hidayatul Khusna	Dian Bestari Santi Rahayu	The Role of Film Communities in Building Local Film Networks and Collaborations in The Digital Era
6	11.35 - 11.45	Nuniek Ina Ratnaningtyas	Sri Hartini, Sri Lestari, Nurani Ajeng Tri Utami, Arif Rahman Hikam	Activity Program of the Unsoed Community Service Center in Increasing the Number of Community Service Titles Funded by Internal and External Funding Sources
7	11.45 - 11.55	Ririn Kurnia Trisnawati	Mia Fitria Agustina, Tribuana Sari	Southeast Asian Women and Generational Dynamics of Womanhood In Netflix's Never Have I Ever (2020)
8	11.55 - 12.05	Agus Raharjo	Dwi Hapsari Retnaningrum, Helmi Gunawan, Fahmi Firdaus	Artificial Intelligence-Based Criminal Justice: An Offer of Crime Prevention in the Criminal Justice System
9	12.05 - 12.15	Nur Indah Sholikhathi	Etin Pujiastuti, Novita Pri Andini, Dyah Wijayawati	The Construction of Social Identity of Adolescents Through Slang in The Era of Globalization

CODE: D-20-2				
ROOM 20				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Social, Economy and Justice 20-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Yanuar Restianto	Dian Bestari Santi Rayahu, Dadang Iskandar, Aldila Krisnaresanti, Lina Rifda Naufalin, Aldila Dinanti, nur chasanah	Business Model Innovation for Student Startups: A Study on Inova Creative Solutions in Packaging and Selling Organic Coconut Sugar Online
2	14.25 - 14.35	Luthfi Makhasin	Chanifia Izza Millata, Indaru Setyo Nurprojo	The Politics of Inclusive Social Protection at the Local Level: Examining the Case of Health Insurance Program in Pekalongan, Central Java
3	14.35 - 14.45	Aldila Krisnaresanti	Lina Rifda Naufalin, Dadang Iskandar, Wulan Lifa Nurfathonah	Dynamic Capabilities of Eco-Friendly MSMEs in Embracing Digital Marketing: Evidence from Batik Ecoprint in Banyumas, Indonesia
4	14.45 - 14.55	Ulul Huda	Imam Suhardi, Noor Asyik, Hariyadi Hariyadi, Wahyu Budiantoro	The Relationship Between Religion and Local Culture in the Ruwatan Tradition in Banyumas
5	14.55 - 15.05	Altri Mulyani	Irene Kartika Eka Wijayanti, Dindy Darmawati Putri, Indah Widyarini, Wahyu Adhi Saputro	Analysis of Potential Agricultural Commodities in the Upper Serayu Watershed, Wonosobo Regency
6	15.05 - 15.15	Rifki Andi Novia	Indah Widyarini, Dwi Purtiana Nuramanah Kinding	Marketing Characteristics and Integrated Marketing Communications of Organic Rice in Banyumas Regency
7	15.15 - 15.25	Agni Lili Ariyanti		Economic Valuation of Polyethlyene Terephthalate , Paper, and Cans Recycling in Purbalingga, Central Java
8	15.25 - 15.35	Timbul Sihombing	Ismoyowati -, Novie Andri Setianto	Comparative Analysis of Production Cost Efficiency Between Modern Automated Technology Housing Systems and Conventional Systems in Broiler Farming Businesses
9	15.35 - 15.45	Wahyu Adhi Saputro	Irene Kartika Eka Wijayanti, Dindy Darmawati Putri, Ernes Septina Azizi	Factors Affecting Rice Prices in Central Java Province
10	15.45 - 15.55	Ashari Hidayat		Deixis in Student Conversational Discourse

CODE: D-21-1				
ROOM 21				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Sustainable Communities 21-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	preparation		
1	10.45 - 10.55	Ali Maksum	Ike Purbowati, Gigieh Jaya, Dian Novitasari	Community Empowerment Through Capacity Building in Robusta Coffee Brewing: Supporting Edu-Tourism Development at Bukit Kepuh, Kebumen, Indonesia
2	10.55 - 11.05	Diana Indrasanti	Enny Dwi Cahyani, Arfi Nurul Hidayah, Tri Rachmanto Prihambodo, Amalia Muhaimin, Aris Mumpuni, Dian Riana Ningsih, Kunandar Prasetyo, Dian Bayu Firmansyah, Siwi Prammatama Mars Wijayanti, Ankarlina Pandu Primadata, Emylana Listiowati Listiowati, Lu'lu Sahara Wusahaningtyas	Evaluation of the effectiveness of the Research Ethics Committee (KEP) LPPM Unsoed's workflow: Identification of factors that influence
3	11.05 - 11.15	Novie Andri Setianto	Yusmi Nur Wakhidati, Imbang Haryoko	Strategies to Improve Beef Farming in Kebumen; A System Thinking Approach
4	11.15 - 11.25	Idah Hamidah	Yusida.Lusiana 2, Eko.Kurniawan 3, Wisnu.Widjanarko 4	Implementation of Teaching Factory Based on Japanese Corporate Culture in Vocational Schools to Enhance Student Internship Readiness
5	11.25 - 11.35	Suroto Suroto	Sherly Wulandari, Bambang Hendriya Guswanto, Lilik Muzdalifah, Glagah Eskacakra Setyowisnu, Triyani Triyani	Application of Additive Group Coset of Integer Sets in Cryptographic Algorithms
6	11.35 - 11.45	Miko Ferine	Catharina Widiartini, Madya Ardi Wicaksono	An analytic study of knowledge retention among undergraduate medical students of Universitas Jenderal Soedirman
7	11.45 - 11.55	Ahmad Muthohar Sa'idi	Mintarti Mintarti, Muslihudin Muslihudin	The Socio-Ecological Paradigm of Belief Communities as a Strategy for Sustainable Natural Resource Development
8	11.55 - 12.05	Triana Ahdiati	Oktafiani Catur Pratiwi, Bowo Sugiarto, Manung Soebiantoro, Solahuddin Kusumanegara	Village Identity Change in the Concept of Smart Village in Indonesia

9	12.05 - 12.15	Agus Haryanto	Elpeni Fitrah, Tundjung Linggarwanti	The Disconnect Between Village Potential and BUMDES Initiatives in Rural Development: A Study of Rural Development in Indonesia The Disconnect between Village Potential and BUMDES Initiatives in Rural Development: A Study of Rural Development in Indonesia
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CODE: D-21-2				
ROOM 21				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Sustainable Communities 21-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Destyanisa Tazkiyah	Dyah Tjaturrini, Rizki Utami, Henggar Prasetyowati, Adilla Achmad Syahputri	Improving Communication Competence of Mandarin Diploma Program Graduates through Grammar Mastery
2	14.25 - 14.35	Eko Suyono	Adi Wiratno	Analysis of Factors Influencing The Effectiveness of The Whistleblowing System With Professional Commitment As A Moderating Variable in Regional Apparatus Organizations in Banyumas and Purbalingga Region of Indonesia
3	14.35 - 14.45	Diana Retna Utarini Suci Rahayu	Agatha Sih Piranti, Endang a Setyowati, Ani Widyastuti, Ika P Rini	Green Innovation at SMK Muhammadiyah 3: Developing Ecopreneurship Attitudes Through Aquaponics-Based Project Learning
4	14.45 - 14.55	Ita Fitriana	Raden Pujo Handoyo, Tri Wahyu Setiawan Prasetyoningsih, Usep Muttaqin, Asrofin Nur Kholifah	Multimodal Semantic Analysis of Tourist Signage in Baturraden
5	14.55 - 15.05	Masrukin -	Simin -, Nalfaridas Baharudin	Study on Inhibiting Factors of Smart Village Implementation in Karangsoka Village, Kembaran Sub-district, Banyumas Regency
6	15.05 - 15.15	Sulyana Dadan	Joko Santoso, Agung Kurniawan	Involment of Adolescent in Traditional Rituals as a Model of Cultural Inheritance in Bonokeling Community
7	15.15 - 15.25	Slamet Rosyadi	Wahyuningrat Wahyuningrat, Muhammad Yamin, Shadu Satwika Wijaya, Isran Kamal	Policy Convergence and Divergence in Community-Based Tourism: Comparative Lessons for ASEAN Sustainable Development
8	15.25 - 15.35	Soetji Lestari	Edy Suyanto, Tri Rini Widyastuti	Local Wisdom of Bonokeling (Banyumas) Indigenous Women in Preserving Nature
9	15.35 - 15.45	Ankarlina Pandu Primadata	Shinta Julianti, Agung Kurniawan, Tissa Silvia	Karangkitri : Local Wisdom Practices of Rural Communities in Maintaining Family Food Security (A Study of Rural Communities in Banyumas Regency)

10	15.45 - 15.55	Bambang Harsanto	Muhammad Yamin, Tobirin Tobirin	Institutional Conflicts in Coastal Tourism Management: A Multi-Stakeholder Collaborative Governance Model for Sustainable Development Goals Achievement
11	15.55 - 16.05	Monica Rosiana	Tiladela Luhita, Ekaningtyas Widiastuti, Dian Purnomo Jati	Community Transformation and Local Economy: Business Networks and SMM for the Sustainability of Small and Medium Enterprises in Banyumas
12	16.05 - 16.15	Neneng Sobibatu Rohmah	Indaru Setyo Nurprojo, Khairurrizqo Khairurrizqo, M. Soebiantoro	The Urgency of Smart Tourism Implementation in Tourism Village Development: A Case Study of a Tourism Village in Serang, Purbalingga



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CODE: D-22-1				
ROOM 22				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Sustainable Communities 22-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Hikmah Nuraini	Lilis Sri Sulistiani, Simin Simin, Isty Mustikaningtyas Wahuningsih	Social Empowerment and Creative Economy for Improving the Welfare of Rural Communities in Banyumas Regency
2	10.55 - 11.05	Kiky Srirejeki	Vincent Chong, Agung Praptapa, Poppy Dian Indira Kusuma	Accountability Frameworks in AI-Driven Sustainability: Bridging the Governance Gap in Ethical Decision Making
3	11.05 - 11.15	Colti Sistiarani	Qoni Oktanti, Waluyo Sejati	Smartvillage through the Concept of Integration of Primary Services in Gununglurah Village, Cilongok District
4	11.15 - 11.25	Wahyuningrat	Guntur Gunarto	Enhancing Public Sector Competencies and Collaborative Governance for Agrotourism Development in Rural Indonesia: A Case Study of Kanigara, Wonosobo
5	11.25 - 11.35	Muhammad Azwar	Dhimas Adiewijaya, Annisa Salimah, Jeni Amalia Kartika, Muhammad Faisal Susandra, Sista Rizqiana	Synergy of Cattle-Rice in Pulau Pinang Village: Training on Rice Straw Ammoniation Technology
6	11.35 - 11.45	Ashlikhatul Fuaddah	Enny Dwi Cahyani, Condro Wibowo	Collaboration Strategies of LPPM Unsoed with Business and Industry in Strengthening Research and Community Engagement
7	11.45 - 11.55	Nunung Noor Hidayat	nunung.hidayat@unsoed.ac.id	Potential and Mapping of Goat Livestock Development Bases in Banyumas Regency
8	11.55 - 12.05	Syahrul Ganda Sukmaya	syahrul.ganda@unsoed.ac.id	Circular Economy and Sustainability of Arabica Coffee Agribusiness in the Gunung Slamet Region, Banyumas Regency
9	12.05 - 12.15	Siti Zulaikha Wulandari	sitizulaikhaw@gmail.com	Digital Training as a Moderator In Technology Adoption: an Empirical Extension of Tram Among MSME Actors

CODE: D-22-2				
ROOM 22				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Sustainable Communities 22-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Ratna Satriani	Budi Dharmawan, Sunendar Sunendar	Development of Biopharmaca Coconut Sugar Products and “Tungku Hemat Energi” to Enhance The Competitiveness of Palm Sugar Farmers In Pekuncen, Banyumas
2	14.25 - 14.35	Ratna Satriani	Budi Dharmawan, Nur Wijayanti	Sustainable Strategy Model for Developing the Palm Sugar Agroindustry in Banyumas Regency to Enhance Local Product Competitiveness
3	14.35 - 14.45	Suliyanto Suliyanto	Rahab Rahab, Daffa Redika Fauzi	The Effect of Green Tourist Practices on Revisit Intention with Tourist Satisfaction as an Intervening Variable and Environmental Concern as a Moderating Variable
4	14.45 - 14.55	Tundjung Linggarwati	Arief Bakhtiar Darmawan, Soni Martin Anwar, Resya Nur Intan Putri	Tambaknegara Village Community Perception of the Serayu Mangrove Adoption Program
5	14.55 - 15.05	Sofa Marwah	Chanifia Izza Millata, Bella Shelfia Nindy, Alfiah Alfiah	Knowledge-Sharing Forum : Contributing to Empowerment and Solidarity in Southern Thailand
6	15.05 - 15.15	Sofiatul Khotimah	Atiek Sri Purwati, Najmudin najmudin, Viviana Mayasari, Ike Wijayanti	The Influence of Academic and Psychosocial Support on the Study Success of Students in the Papua Affirmation Program
7	15.15 - 15.25	Muhammad Riyanton	Mustasyfa Thabib Kariadi, Dani Arifudin	Revitalization of Agricultural Language Varieties: a Study on Pengiyongan, Sasak, and Balinese Dialects
8	15.25 - 15.35	Muslihudin Muslihudin	Rili Windiasih, Elis Puspitasari	Good Practices in The Development of Melung Tourism Village in Banyumas Regency
9	15.35 - 15.45	Edy Suyanto	Soetji Lestari, Ignatius Sutoyo, Nanang Martono	Community-Based Waste Management Strategy Through the Garbage Charity Movement: An Effort to Empower Community Welfare at Teluk Penyu Beach, Cilacap

10	15.45 - 15.55	Hendro Sukoco		Achieving Sustainable Development Goals through Halal Micro Small Medium Enterprises: Evidence from Digital Marketing, Product Innovation, and Islamic Economic Practices
11	15.55 - 16.05	Dijan Rahajuni	Lilis Siti Badriah, Barokatuminalloh Barokatuminalloh	Enhancing Rural Economic Development Through Collaboration Between MSMEs and Village-Owned Enterprises: Evidences from Sunyalangu Village, Banyumas, Indonesia
12	16.05 - 16.15	Frengki Wibowo	Dwiki Oktobrian, Wilujeng Kusuma Putri, Patience Maulana Putri	Conditional Sentences in Indonesia: Normative Developments and Their Relevance to Offender Rehabilitation and Community Protection



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CODE: D-23-1				
ROOM 23				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Sustainable Communities 23-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Arintoko Arintoko	Herman Sambodo, Rakhmat Priyono	Key Determinants of Crop Production in Indonesia: Empirical Evidence of The Application of Cointegration Regression
2	10.55 - 11.05	Eliada Herwiyanti	Permata Ulfah, Umi Pratiwi, Probo Hardini	Fundamental Study of Potential Natural Resources for Economic Development and Empowerment of Pageraji Village
3	11.05 - 11.15	Barokatuminallo h Barokatuminallo h	Lilis siti badriah, Dijan Rahajuni	Increasing Farmers' Adaptive Capacity to Face Climate Change through Strengthening Farmer Groups
4	11.15 - 11.25	Nadhira Shania Tabrizia Azis	Isty Mustikaningtyas Wahyuningsih, Salsabila Damayanti	Toward Youth-Driven Sustainable Digital Futures: Embeddedness of Local Wisdom in Rural Transformation
5	11.25 - 11.35	Sri Pangestuti	S. Bekti Istiyanto, Ashlikhatul Fuaddah	Stakeholder Synergy in the Management of Banteran Tourism Village, Sumbang Subdistrict
6	11.35 - 11.45	Sutarmin Sutarmin	Siti Badiatul Umroh, M Hari Ramadhan, Meri Aguk Setiani, Ivan Akmal Nur, Undri Rastuti	Implementation of Arabica Coffee Roasting Technology to Build Economic Independence in Sridadi Village, Sirampog Distric
7	11.45 - 11.55	Rio Dhani laksana	intan Shaferi, Ary Yunanto	Human Resource Dynamics and Profitability in Village Owned Enterprises: An Empirical Study from Indonesia
8	11.55 - 12.05	Abdul Rohman	Imam Suhardi, Sendy Noviko, Ulul Huda, Nisa Roiyasa, Exwa Andriyan Verrysaputro	The Bonokeling Community in Maintaining Inclusive Values
9	12.05 - 12.15	Gita Anggria Resticka	Erwita Nurdiyanto, Monika Herliana	Ethnolinguistic Study on the Cultural Heritage of the Kasepuhan Kalitanjung Tambaknegara Banyumas Community

CODE: D-23-2				
ROOM 23				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Sustainable Communities 23-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Dwiyanto Indiahono	Tobirin Tobirin, Rizky Amalia Putri, Tissa Silvia	Single Candidacy from the Perspective of Local Online Media: Democracy and the SDGs Issues
2	14.25 - 14.35	Shinta Prastyanti	Adhi Iman Sulaiman, Tri Nugroho Adi, Nadya Syifa Nayanti	Supply Chain of Urban Farming Products Based on Technological Innovation: Toward Achieving Local Food Security
3	14.35 - 14.45	Waluyo Handoko	Shinta Prastyanti	Empowering former migrant workers in the development of innovation-based cooperatives and MSMEs in Cilacap
4	14.45 - 14.55	Adhi Iman Sulaiman	Alya Husnul Khotimah, Lilik Kartika Sari	Regeneration of Young Farmers in Productive Entrepreneurship Based on Local Resources
5	14.55 - 15.05	Adhi Iman Sulaiman	Shinta Prastyanti, Lilik Kartika Sari	Community Empowerment in Developing Family Medicinal Plants
6	15.05 - 15.15	Manunggal K. Wardaya	Tenang Haryanto, Alef Musyahadah Rahmah, Handityo Basworo, Eneng Anisyah	Model of Community Participation in Cultural Preservation Within the Framework of Sustainable Development Goals (SDG): A Study of Museum Musik Indonesia
7	15.15 - 15.25	Agus Ganjar Runtiko	Petrus Imam Prawoto Jati, Nisa Roiyasa, Rohmah Nia Chandra Sari	Millennial-Driven Communication in Rural Sustainable Waste Management Through Village-Owned Enterprises
8	15.25 - 15.35	Mustasyfa Thabib Kariadi	Muhammad Riyanton, Tri Asiati	Integrating Banyumas Local Wisdom into AI- Based Interactive Learning Media to Enhance Students' Vocabulary
9	15.35 - 15.45	SAFRINA ARIFIANI FELAYATI	AGUNG BENTA FEBRIA NURYANTO	Revealing the Self in Kaiman Sang Pendiri Banyumas: A Travel Literature Study as an Effort to Enhance Cultural Awareness among Universitas Jenderal Soedirman Students
10	15.45 - 15.55	Titis Perdani	Raihan Maulana, Indaru Setyo Nurprojo, Neneng Sobibatu Rohmah, Chanifia Izza Millata	Prima Panembangan: Smart Government Integration through Instagram for Sustainable Community Development in Rural Indonesia

11	15.55 - 16.05	Nuriyeni Bintarsari	M. Musa Al Hasyim, Rifka Amalia	Gender Equality and SDGs: Perception of the Management of Pengurus Jam'iyah Perempuan Pengasuh Pesantren dan Mubalighoh (JPPPM) in Pemalang Regency as an Effort to Prevent Sexual Violence in the Islamic Boarding Schools
12	16.05 - 16.15	HARYANTO HARYANTO	Yohan Wismantoro, Sih Darmi Astuti	A Socio-Technical Framework for Evaluating Public Employee Performance in Digital Government Environments



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CODE: D-24-1				
ROOM 24				
SESSION 1				
7th October 2025 10.45 - 12.15				
Theme: Sustainable Communities 24-1				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	agatha Sih Piranti	Eming Sudiana, Diana retna Utarini Suci Rahayu, Puji Widodo, Lilik Kartikasari	Community Empowerment in the Conservation of Rare Plants Based on Local Biodiversity that Have The Potential to be Superior Crops With Economic Value in Ketenger Village, Baturaden
2	10.55 - 11.05	Budi Dharmawan	Sunendar Sunendar	Sustainable Livelihood Strategies Based on Assets in Horticultural Area Development in Wonosobo District, Central Java, Indonesia
3	11.05 - 11.15	Yogi Ramadhani	Muhammad Syaiful Aliim, Mohammad Irham Akbar, Eko Fauzi Hartono, Salman Paris Harahap, Hermawan Prasojo, Undiono Undiono	Development of an Intellectual Property Information System at the IP Service and Product Certification Center, LPPM UNSOED (Year 2)
4	11.15 - 11.25	Danang Nur Cahyo	Prasetyo Prasetyo, Wilis Cahyani	Purbalingga Farm Group Empowerment Towards Sustainable Production Through Group Strengthening, Feed Security, and Biogas Production
5	11.25 - 11.35	Ike Sitoresmi Mulyo Purbowati	Gunawan Wijonarko, Ali Maksum, Adi Inrayanto, Gigieh Henggar Jaya	Inventory of Forest Resources in KHDTK Unsoed as a Basis for Sustainable Green Management
6	11.35 - 11.45	Ike Sitoresmi Mulyo Purbowati	Ali Maksum, Risqa Naila Khusna Syarifah	Development of Rosella Flower Tea Products into Signature Products of Bukit Teng Tung Baturaden Tourism as an Effort to Improve Business Classification to the Platinum Category
7	11.45 - 11.55	Ike sitoresmi mulyo purbowati	Ali Maksum, Gigieh Henggar Jaya, Adi Indrayanto	Accelerated Shelf Life Estimation of Roselle (Hibiscus sabdariffa L.) Tea Bags: Effects of Bag Type and Particle Size
8	11.55 - 12.05	Weni Novandari	Siti Zulaikha Wulandari, Ratno Purnomo, Sulyanto Sulyanto, Tri Yuwono	Innovation Orientation on Marketing Performance: The Mediating Role of Product Excellence and Digital Transformation
9	12.05 - 12.15	Farida Rachmawati	Untung Susilo, Ani Suryanti	Dietary Spirulina Platensis and Its Effects on Reproductive Performance in Anguilla bicolor McClelland

CODE: D-24-2				
ROOM 24				
SESSION 2				
7th October 2025 14.15 - 16.15				
Theme: Sustainable Communities 24-2				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Icuk Rangga Bawono	Rifda Naufalin, Poppy Arsil, Selly Nohan, Elma Rachmayanti, Tiara Ananda Dewi	Evaluating Consumer Preferences and Feasibility Study of Kecombrang (etlingera Elatior) Probiotic Beverages
2	14.25 - 14.35	Poppy Arsil	Wilis Cahyani, Naila Permata Sahrita, Sausan Salsa Bila	Halal Center Job Training Institution Development Strategy Using The Analytical Hierarchy Process
3	14.35 - 14.45	Nur Wijayanti	Ratna Satriani, Taufik Budhi Pramono, Irene Kartika Eka Wijayanti, Wahyu Adhi Saputro, Kunandar Prasetyo, Altri Mulyani, Ulfah Nurdiani, Muhamad Solekan	Factors Influencing the Effectiveness of the Beginner Independent Workforce Program (TKMP) Mentoring
4	14.45 - 14.55	Sri Handayani	Siti Kunarti, Anggitariani Rayi Larasati Siswanta, Normalita Destyarini	Land Bank and Fair Partnership for the Sustainable Welfare of Indonesian Farmers
5	14.55 - 15.05	Nuke Faradhila	Rifda Naufalin, Rumpoko Wicaksono	Development of Low-Fat Cream Cheese Powder Using Natural Preservative Modification And Fat Replacer to Extend Shelf Life
6	15.05 - 15.15	Maria Dyah Nur Meinita	Fitria Nurul Alfiah, Riyanti Riyanti, Riviani Riviani, Dyahruri Sanjayasari, Hamdan Syakuri	DNA barcoding and Antimicrobial Bioactive Compounds Metabolomic Profiling of Selected Red Seaweed
7	15.15 - 15.25	Ratna Stia Dewi	Dyahruri Sanjayasari, Mardiyah Kurniasih, Any Kurniawati, Wilda Khafida	Indigenous Fungi from Community-Based Agroforestry on Calcareous Drylands in Southwest Sumba, Indonesia: Potential for Batik Dye Waste Biodegradation
8	15.25 - 15.35	Muhamad Baedowi	Musmuallim Musmuallim, Lis Safitri, Akhyarul Anam, Jovan Aditya Dilly Pratama, Marini Marini	Instilling Religious Tolerance in Children at Sidoarum 1 Public Elementary School, Sempor District, Kebumen Regency

9	15.35 - 15.45	Akhmad Rizqul Karim	Ahmad Fauzi, Faishal Permana	Trade-offs between Conservation Agriculture and Economic Needs: A Case Study of Coffee Farmers' Perceptions in the Banjarnegara Highlands, Indonesia
10	15.45 - 15.55	Rahayu Widiyanti	Nunung Noor Hidayat, Indra Sugiharto	Analysis of Production Function of Commercial Layer Chicken Farming in Banyumas Regency
11	15.55 - 16.05	Undri Rastuti	Sutarmin Sutarmim, Umi Pratiwi, Puwanto Purwanto, Ririn Agustin, Dimas Saputra, Fanti Indriana Safitri, Biang Pratama, Novia Amalina Ramdhiani	Secondary Innovation in Coffee Agribusiness to Improve the Quality and Capacity of Superior Regional Products in Salem District, Brebes Regency
12	16.05 - 16.15	Alpha Nadeira Mandamdari	Ulfah Nurdiani, Djeimy Kusnaman	How can Farmers in Cilongok District, Banyumas Regency Adapt to Climate Change?



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ROOM 25				
SESSION 1				
7th October 2025 10.45 - 12.15				
No	Time	Author	Contributor	Title
	10.35 - 10.45	<i>preparation</i>		
1	10.45 - 10.55	Condro Wibowo	Susanto Budi Sulisty, Amin Fatoni	Enhancement of Mechanical Properties of Sodium Alginate-Based Bioplastics through the Incorporation of Silica, Bentonite, and Polyvinyl Alcohol Fillers
2	10.55 - 11.05	Condro Wibowo		The International Community Service Program in Vietnam for Cultural Exchange and to Strengthen International Relations
3	11.05 - 11.15	Probo Hardini	Eva Indriyati, Diah Setyorini Gunawan, Yemima Sahmura Vividia, Khaidar Ali	Development of the Cibalingmas Regional Development Model
4	11.15 - 11.25	Probo Hardini	Eva Indriyati, Paulus Nugroho, Izza Anwer	Developing A Model of Side Friction Effect on Average Speed Change in Urban Zone-Industrial Area
5	11.25 - 11.35	Roy Andreas	Intan Megasari, Tien Setyaningtyas	Surface Macronutrient Variability along the Indonesian Throughflow (ITF) Pathways: Insights from the Bali-Lombok Region
6	11.35 - 11.45	Roy Andreas	Fira Nadiatul Faizah, Suwandri Suwandri	Kinetic and Isotherm Analysis of Rhodamine B Adsorption onto Humic Acid
7	11.45 - 11.55	Arfin Deri Listiandi	Neva Widanita, Iqbal Indra Awaludin	Analysis of VO ₂ max, Body Composition, and Personal Best Performance among Recreational Runners
8	11.55 - 12.05	Hiya Alfi Rahmah	Izka Sofiyya Wahyurin	Empowering Community Cadres through Behavior Change Communication (BCC) : Enhancing Local Food Based Complementary Feeding Implementation
9	12.05 - 12.15	Khaidar Ali	Saudin Yuniarno, Suratman Suratman	PeerHealth: A Digital Health Screening and Education Tool for Islamic Boarding School Students
10	12.15 - 12.30	Mekar Dwi Anggraeni	Eni Rahmawati, Endang Triyanto, Amin Fatoni	Usability Test of The Dianing-App for a Community Empowerment and Sustainable Hyperbilirubinemia Early Detection in Rural Areas

ROOM 25				
SESSION 2				
7th October 2025 14.15 - 16.15				
No	Time	Author	Contributor	Title
	14.00 - 14.15	<i>preparation</i>		
1	14.15 - 14.25	Elpeni Fitrah	Agus Haryanto, Tundjung Linggarwati	The Impact of Cross-Border Community Engagement on Regional Cooperation: A Qualitative Analysis of the Unsoed International KKN Program
2	14.25 - 14.35	Elpeni Fitrah	Nuriyeni Kartika Bintarsari, Arif Darmawan, Ayusia Sabhita Kusuma, M Musa Al-Hasyim, Rizky Yunas Saputra, Afifah Asma Nailah, Raden Mokhamad Luthfi	Optimizing Multi-Stakeholder Collaboration in Local Development: Lessons from Banyumas Regency's SDG Implementation
3	14.35 - 14.45	Farah Fadhillanisa	Muhammad Rif'an, Hana Hanifa	Evaluation of Phosphorus Availability in Paddy Fields: A Case Study in Ajibarang, Banyumas
4	14.45 - 14.55	Ridlwan Kamaluddin		Regulation and Optimization of Village Ambulance Vehicles in the Integrated Rural-Based Emergency Response System as a Community-Based Disaster Risk Reduction
5	14.55 - 15.05	Lis Safitri	Afduha Nurus Syamsi	Animal Welfare in Halal Studies: Trends and Insights from Bibliometric Analysis
6	15.05 - 15.15	Akhmad Sodiq	Pambudi Yuwono, Yusuf Subagyo, Setya Agus Santosa, Ari Dwi Nurasih	Bibliometric Analysis of Practical Management Systems in Improving Sheep Productivity
7	15.15 - 15.25	Tri Murniati	Eri Wahyuningsih, Katri Andini Surijadi, Hendri Restuadhi	Community Perceptions of Adolescent Problems in Gumelar Subdistrict, Banyumas Regency
8	15.25 - 15.35	Yemima Sahmura Vividia		Continuity and Change: Strategy to Re-Read "Kampung" in Indonesia During the Pandemic Period
9	15.35 - 15.45	Muhammad Yamin	Slamet Rosyadi, Bambang Tri Harsanto, Ali Nurudin	Institutional Fragmentation and Tourism Development: A Case Study of Coastal Area Management in Central Java
10	15.45 - 15.55	Enny Dwi Cahyani	Riris Ardhanariswari, Hikmah Rahmawati	Towards Sustainable Communities in the Banyumas Detention Center: Advancing Human Rights, Health, and Economic Empowerment

11	15.55 - 16.05	Sri Maryani	Triyani Triyani, Renny Renny	Application of Hanzawa Transformation to the Boundary Condition of Korteweg Model Fluid Motion
12	16.05 - 16.15	Nur Aini	Ismi Khauyatul Husna, Budi Sustriawan, Hadana Sabila Arsyistawa, Vincentius Prihananto, Indarto Indarto, Banun Diyah Prabawati	Estimation of the shelf life of corn cookies using the accelerated shelf life testing (ASLT) method using the Arrhenius model



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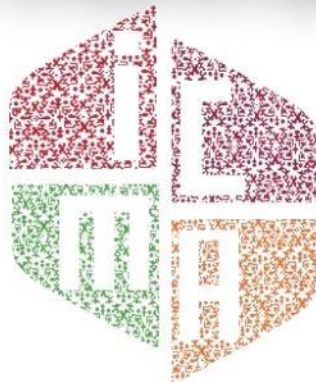
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ABSTRACT



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**SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT**

f Gracillaria Verrucosa Seaweed by Materials and Extraction Time Using Ultrasonic Wave Methods

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Abstract

Seaweed contains pigments that can be used as functional food. One type of seaweed that is quite abundant in the Indonesian sea is *Gracilaria verrucosa* (*G. verrucosa*). *G. verrucosa* seaweed belongs to the red algae group. One of the compounds contained in red algae is ficobiliprotein. To increase the flexibility of utilization, ficobiliprotein needs to be extracted out of the seaweed cells. The extraction method used is the ultrasonic wave extraction method. The length of extraction time and the use of solvent type is one of the factors that affect the extraction process so that it needs to be studied further to improve the quality and quantity of pigments produced. The purpose of this study was to determine the effect of solvent type variation and extraction time variation on the physicochemical properties of seaweed ficobiliprotein extraction results. This study used a completely randomized design. The factors studied included the type of solvent, namely distilled water (P1), 1% CaCl (P2), phosphate buffer pH 7 (P3), and extraction time, namely 30 minutes (L1), 40 minutes (L2), 50 minutes (L3). Variables observed were phycobiliprotein content, total anthocyanins, color intensity, protein content, and antioxidant content. Variable data were analyzed using ANOVA and continued using DMRT at the 5% level. The results of this study obtained the right type of solvent for the characteristics of ficobiliprotein extraction is distilled water with an average value of 26.639 mg/100g. The right time for the characteristics of ficobiliprotein extraction results in this study is 40 minutes with an average value of 25.488 mg/100g. The best treatment combination between variations in solvent type and extraction time on the physicochemical properties of ficobiliprotein extraction results is treatment P1L2 (distilled water, 40 minutes), then from the best treatment results conducted antioxidant test. Antioxidant levels produced in this study amounted to 1.58%.

Keywords: Extraction; *gracilaria verrucosa*; phycobiliproteins; ultrasonic waves

Genetic Parameters Estimation of Phalaenopsis Orchid Mutants Induced by Gamma Ray Irradiation

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Abstract

Phalaenopsis is a genus of Orchidaceae that has high economic value, especially because of the beauty and diversity of flowers it offers. Consumer demand for Phalaenopsis continues to increase, along with increasing interest in the variety of colors, shapes, and sizes of flowers produced. Efforts to increase genetic diversity are carried out through gamma ray irradiation. The purpose of this study is to obtain information about genetic diversity and heritability values of Phalaenopsis mutant characters. The genetic material observed was seven Phalaenopsis genotypes irradiated with gamma rays at 3 doses of 0, 25, and 35 Gy, 10 plants each. The study was conducted in the greenhouse of the Faculty of Agriculture, Jenderal Soedirman University, Purwokerto, Indonesia. The results showed that the estimated values of genetic and phenotype diversity were classified as low, except for the number of flowers. While the estimated value of heritability showed a high category.

Keywords: diversity, flower, heritability, orchidaceae

Profiles of Three Main Genes in the Biosynthesis of Vinblastine and Vincristine in Some Madagascar Periwinkle [*Catharanthus Roseus* (L.) G. Don] Cultivars

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Abstract

Two monoterpene indole alkaloids (MIAs) compounds in Madagascar periwinkle [*Catharanthus roseus* (L.) G. Don], i.e. vinblastine and vincristine, are known for their anti-cancer activities. Exploration on both alkaloids in some *C. roseus* cultivars is necessarily based on the studies of characterization of main genes involved in the alkaloid biosynthesis. In addition, characterization of genes related to the expression of flower colour is also important as supporting data on the variation of *C. roseus* cultivars. This study aims to unveil the profiles of three main genes involved in the biosynthesis of vinblastine and vincristine and those encode for enzymes in the anthocyanin biosynthesis in seven different *C. roseus* cultivars. Plant samples were collected from Purwokerto city, followed by genomic DNA extraction, amplification of genes *Str*, *D4h*, *Dat*, and those encode for *CHI*, *F3H* and *DFR* enzymes using universal primers, and sequencing of the six genes. The results show that genomic DNAs of all seven plant samples are successfully extracted with concentrations ranging from 1,600 to 3,200 ng/ μ L and A260/280 ratios ranging from 1.400 to 2.133. However, so far only gene encoding for *DFR* has been successfully amplified showing one single clear band in samples C2, C4, C5 and C6 respectively. The other samples, i.e. C1, C3 and C7, show no amplicon. In addition, the other five genes still show multiple bands in all samples. At the moment PCR optimization is still in progress.

Keywords: anthocyanin, *Catharanthus roseus*, vinblastine, vincristine

Crosslinked Chitosan–Tripolyphosphate as a Green Adsorbent for Methyl Orange Removal: Synthesis, Characterization, and Adsorption Performance

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Abstract

The synthesis of crosslinked chitosan–tripolyphosphate (TPP) was successfully carried out, and its potential application for removing methyl orange from aqueous solutions was demonstrated. This work aimed to characterize the physicochemical properties of chitosan and crosslinked chitosan–TPP, and to determine the optimum conditions and adsorption performance. Crosslinking was achieved by reacting chitosan with sodium tripolyphosphate at pH 3. The obtained materials were characterized using FTIR spectroscopy, solubility tests in 1% acetic acid, and molecular weight analysis. Adsorption experiments were performed under varying pH values, contact times, and initial dye concentrations to evaluate the adsorption mechanism. FTIR spectra confirmed the presence of –NH_2 groups in chitosan at 1589 cm^{-1} and –PO groups in crosslinked chitosan–TPP at 1026 cm^{-1} . Chitosan and crosslinked chitosan–TPP had solubilities of 8.63 and 1.16 mg/mL, and molecular weights of 298,743.44 and 345,241.96 g/mol, respectively. Crosslinked chitosan–TPP exhibited optimum adsorption at pH 7 with a contact time of 120 minutes, achieving an adsorption capacity of $5.255 \times 10^{-8}\text{ mol/g}$. The adsorption behavior followed the Freundlich isotherm, suggesting heterogeneous multilayer adsorption. These findings highlight the potential of crosslinked chitosan–TPP as an effective, low-cost adsorbent for dye removal.

Keywords: adsorption, crosslink, chitosan–tripolyphosphate, dye, methyl orange

Formulation of Flakes from Modified Sorghum with the Addition of Coconut Flour

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Abstract

Demand for ready-to-eat items, such as flakes, arises from the tendency of those with busy lifestyles to forgo breakfast. Sorghum is a healthy grain that promotes local food variety, rendering it an appropriate raw material for flakes. Nonetheless, its nutritional, sensory, and functional deficiencies can be enhanced with starch modification through fermentation. The incorporation of coconut flour, a source of dietary fiber, boosts the nutritional value and consumer appeal of the product. This study sought to improve the ratio of modified sorghum flour and coconut flour in the formulation of flakes and to assess their physicochemical and sensory characteristics. Modified sorghum flour was generated and examined for its physicochemical properties and amylographic profile. D-Optimal combination design was utilized to ascertain the ideal proportions of modified sorghum flour (40–50%) and coconut flour (5–15%), with replies encompassing hardness, rehydration capacity, and crispness retention in milk. The ideal formula was achieved with 50% modified sorghum flour and 5% coconut flour, yielding a desirability value of 0.929. This formulation yielded flakes with a hardness of 705.67 gf, a rehydration capacity of 40.08%, and a crispness retention of 7.10 minutes. Proximate analysis revealed moisture content of 6.39%, ash content of 2.16%, fat content of 6.40%, protein content of 3.42%, carbohydrate content of 88.02%, dietary fiber content of 9.78%, and total energy of 3.30 kcal/g. Sensory test revealed a yellowish-brown hue, an exceptionally crispy texture, a taste reminiscent of sorghum, a faint coconut aroma, a somewhat gritty mouthfeel, and a greater overall preference relative to commercial flakes. Modified sorghum flour and coconut flour flakes exhibited comparable physicochemical and sensory properties, suggesting significant promise as an alternative nutritious breakfast cereal.

Keywords: coconut flour, flakes, fermentation, modified sorghum flour, formulation

Effect of Slaughtering Techniques on the Efficiency of Blood Removal and Meat Quality of Broiler Chickens

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Abstract

This study investigated the effect of slaughtering techniques on blood removal efficiency and meat quality in broiler chickens. A total of 24 broilers (42 days old) were randomly assigned to three groups using a completely randomized design, with each group replicated three times. The slaughtering techniques compared were: horizontal with the chicken's head bent (P1), horizontal with two-person handling (P2), and vertical (P3). Parameters measured included blood jet distance, blood volume, and meat quality attributes (pH, color, texture, and shelf life at 0, 3, and 6 h post-slaughter). Results showed significant differences in blood jet distance among the treatments, with P3 (48.17 cm) producing the greatest distance, followed by P2 (35.67 cm) and P1 (25.33 cm). Blood volume was also significantly affected, with the highest values obtained in P3, moderate in P2, and lowest in P1. Meat quality evaluation indicated that the vertical method produced more stable pH, brighter color, and better texture, while the two-person horizontal method yielded intermediate results. In conclusion, vertical slaughtering proved more effective in maximizing blood removal and improving broiler meat quality compared to horizontal methods.

Keywords: broiler chicken, slaughtering technique, vertical, horizontal, blood removal, meat quality

The Effect of Combination of NPK Fertilizer Doses and Kasgot Organic Fertilizer on the Growth of Soybean Plants (*Glycine max* L. merr) on Ultisol Soil

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Abstract

Soybean production in Indonesia is still low due to the limited availability of fertile land. Marginal lands like ultisol have the potential to be an alternative, but their acidic and nutrient-poor characteristics require fertility improvement. This study aimed to examine the effect of a combination of inorganic NPK and organic kasgot fertilizer on the growth of soybean plants in ultisol, as well as to determine the optimal combination dose. The research was conducted at the Experimental Farm Screenhouse of Jendral Soedirman University's Faculty of Agriculture. Materials included ultisol soil, Slamet soybean variety, NPK fertilizer, and kasgot fertilizer. A 5x5 factorial Randomized Block Design (RBD) with 3 replications was used. The first factor was the dose of NPK fertilizer (0%, 25%, 50%, 75%, 100%), and the second was the dose of kasgot fertilizer (0%, 25%, 50%, 75%, 100%). The results showed that NPK fertilizer and kasgot fertilizer individually increased plant growth, with no significant interaction between the two. The highest plant height was achieved with NPK at 100% (N5). The maximum number of leaves was achieved using NPK at 50% (N3) and 100% (N5), and with kasgot at 75% (M4) and 100% (M5).

Keywords: Soybean, Ultisol Soil, NPK Fertilizer, Kasgot Fertilizer, Growth

Effect of Starter Concentration and Stirring Frequency on the Physicochemical Characteristics of Coconut Aminos

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Abstract

Coconut aminos is a salty sauce produced from coconut sap through moromi fermentation. The addition of a starter to moromi fermentation can accelerate the fermentation time. Stirring during the fermentation process facilitates distributing the substrate and microbial cells. This study aimed to investigate the effect of starter concentration and stirring frequency on the physicochemical characteristics of coconut aminos. This research used a Randomized Complete Block Design with 12 treatment combinations (4 starter concentrations were 0%, 5%, 10%, 15%; and 3 stirring frequencies were without stirring, daily, and every three days). Physicochemical parameters of coconut aminos were determined, and an effectiveness index test was used to select the most effective treatment. The results showed that starter concentration had no significant effect on all physicochemical parameters. Stirring frequency significantly affected reducing sugar and total sugar contents of coconut aminos, while moisture content and dissolved protein were not affected. The highest reducing sugar and total sugar contents were found in coconut aminos without stirring. Increasing stirring frequency resulted in lower reducing sugar levels, and treatments without stirring differed significantly from daily and every-three-day stirring. Based on the effectiveness index test, a combination of 5% starter concentration without stirring is the most effective treatment in coconut aminos fermentation.

Keywords: Coconut aminos, coconut sap, moromi fermentation, starter concentration, stirring frequency

Development of a Portable Screen-Printed Carbon Electrode (SPCE) Electrochemical Instrument for Conducting Electrochemical Measurements

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Abstract

A screen-printed carbon electrode serves as a biosensor for detecting electrochemical reactions. In this study, we designed a mobile potentiostat that functions similarly to a standard potentiostat, but at a more affordable price. The potentiostat is built using an ESP32D microcontroller with Wi-Fi connectivity. Users can access data through smartphones, tablets, and laptops as long as they are connected to the same network via a locally accessible website. We tested the device by comparing its measurement results with those obtained from a standard potentiostat. The results indicate that our device has significant potential for use in various sensory applications, particularly in research involving screen-printed carbon electrode-based biosensors.

Keywords: Potentiostat, Screen Printed Carbon Electrode, Cyclic Voltammetry, ESP32D, Biosensor

Impact of Microclimate and Heat Stress Index on Production Efficiency of Broiler Chickens in Open, Semi-Closed, and Closed Housing Systems

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Abstract

Heat stress is a major constraint in tropical broiler production. The housing system plays a critical role in modulating the indoor microclimate and, consequently, bird performance. This study evaluates the impact of microclimate conditions, specifically the Heat Index (HI), on key production efficiency metrics. A non-experimental, observational study was conducted using secondary data from three commercial broiler farms in West Java, Indonesia, representing open (Cikampek Farm), semi-closed (Anugerah Farm), and closed (Saprie Farm) controlled-ventilation housing systems. Data on average house temperature ($^{\circ}\text{C}$) and relative humidity (%) from one production cycle were used to calculate the average HI. Production data included Feed Conversion Ratio (FCR) and Performance Index (IP). Data were analyzed using descriptive statistics, correlation, and linear regression to determine the relationship between HI and production efficiency. The closed house system maintained a significantly lower average HI (155.0) compared to the semi-closed (163.1) and open (165.2) systems. Production efficiency was superior in the closed system, with the best FCR (1.46) and IP (433). A very strong positive correlation was found between HI and FCR ($r = +0.975$, $p < 0.01$), and a very strong negative correlation was found between HI and IP ($r = -0.987$, $p < 0.01$). Regression analysis indicated that for every one-unit increase in HI, FCR increased by approximately 0.013 and IP decreased by approximately 10.23 points. The Heat Index is a potent predictor of broiler production efficiency. Closed-house systems, by effectively mitigating heat stress through superior environmental control, achieve a significantly lower HI, which directly translates into improved FCR and IP. Investment in environmentally controlled housing is crucial for optimizing broiler production in tropical climates.

Keywords: Heat Stress, Temperature-Humidity Index, Feed Conversion Ratio, Housing System, Tunnel Ventilation, Tropical Poultry Production

ACTA-1 Gene Polymorphism Based on SNP in Local Duck

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Abstract

The study entitled " ACTA-1 gene polymorphism based on SNP in local duck " aims to (1) determine the specific ACTA-1 gene Single Nucleotide Polymorphism (SNP) in local duck populations; (2) determine SNP-based genetic markers as a basis for selection in local ducks. Actin, alpha1, skeletal muscle (ACTA-1) is an actin protein that is important for muscle cell movement, maintaining the cytoskeleton which is a structural framework that determines shape and organizes cells. Skeletal α-actin plays an important role in skeletal muscle, which is the muscle the body uses to move. In skeletal muscle cells, skeletal α-actin is an important component of a structure called a sarcomere. Overlapping actin and myosin allow them to move relative to each other so that muscles can contract. ACTA-1 gene mutations tend to have a significant effect on muscle contraction. This study uses experimental methods. The research material consisted of 260 ducks consisting of: the initial population (F0) used 10 male Tegal ducks, 50 female Magelang ducks and 200 ducks resulting from crossbreeding of male Tegal ducks with female Magelang ducks, which are in the local duck nursery in Cikidang village, Cilongok sub-district, Banyumas Regency. The study was conducted by identifying SNP of the ACTA-1 gene with PCR of genomic DNA using the forward primer L819 5'-TTGAGAACGAGATGGCCACT -3' and the reverse primer H987 5'-TAGGTCGTCTCATGGATGCC -3'. Allele and genotype frequencies were used to determine the Hardy-Weinberg (H-W) equilibrium. This study successfully amplified a PCR product of 169 bp which was used to determine the SNP. The results of the analysis showed that the ACTA-1 gene in local ducks is polymorphic. SNPs were found at two positions, namely 114 nt (c.114A>T), with 2 (two) types of genotypes, namely AA and AT, and position 237 nt (c.237C>T) with 2 (two) types of genotypes, namely CC and CT. The local duck population is not in Hardy-Weinberg (H-W) equilibrium. Based on the results of the study, it can be concluded that the ACTA-1 gene is polymorphic and can be recommended as a genetic marker in local ducks.

Keywords: polymorphism, ACTA-1 gene, local ducks

Automatization of Telescope Mounting as a New Moon Observer

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Abstract

The beginning of the day in the Hijri calendar is marked by the appearance of the young crescent moon, known as the new moon (**hilal**), following the conjunction process (*ijtima*). The rising of the hilal at the start of the month can be predicted through mathematical and astronomical calculations, known as the **hisab** method. Direct observation of the hilal as a sign of the new month, which is currently recognized as the **rukayah** method, increasingly relies on telescopes as supporting instruments. The visibility of the hilal during local and regional observations indicates the transition to a new month in the Hijri calendar. Hilal observation is carried out shortly after sunset, requiring optical instruments such as telescopes to assist in the process. However, manual operation of telescopes often poses problems for observers, particularly regarding inaccuracies in acquiring the hilal's position coordinates as calculated relative to the telescope's alignment. During telescope adjustments, deviations in the azimuth and altitude axes frequently occur, causing the telescope to miss the celestial object that should be visible. To address this issue, an **automatic telescope drive system** integrated into the telescope mounting is required to minimize errors, improve accuracy, and optimize hilal observation. The engineering of such a telescope mounting has been successfully developed, enabling automatic tracking of the hilal based on its calculated coordinates through astronomical software.

Keywords: Astronomical software, Hijri-Calendar, Mounting, Telescope, The new moon

Partial Purification Using Acetone Crude Urease Extract from Black Soybean Seeds (Glycine Max (L.) Merrill)

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Abstract

Black soybean is one of the potential plants that can produce urease enzyme. Urease is an enzyme that acts as a catalyst in the process of urea hydrolysis into NH_3 and CO_2 , and has been widely utilized in various industrial processes. This research aims to extract, fractionate, and characterize urease enzyme from black soybean seeds. The research began with the extraction of black soybean seeds and obtained crude extract of urease enzyme. The enzyme crude extract was then fractionated using acetone with different saturation levels of 20, 40, 60, and 80%. The fraction with the highest specific activity was characterized including variations in incubation temperature, pH, substrate concentration, storage time at 4 °C, and molecular weight determination using SDS-PAGE. The highest specific activity in this study was shown in the fraction with 60% acetone saturation level (F60) which has a purity level of 2.6 times compared to the crude extract. The optimum conditions of F60 were at incubation temperature of 35 °C, pH 7, substrate concentration of 550 ppm with a specific activity value of 0.042 U/mg, and also obtained V_{max} and K_M values in the crude extract were 0.0343 ppm/min; 0.00423 M, while in F60 were 0.0541 ppm/min; 0.00279 M, respectively. The specific activity value of urease enzyme F60 remained 40% on the fourth day of storage at 4 °C. There were also seven protein bands in the 60% fraction sample with a molecular weight of 104.4; 98.3; 74.7; 48.7; 35.9; 16.2; and 12.7 kDa.

Keywords: acetone, black soybean seeds, characterization, partial purification, urease

Chlorophyll-modified Ag₃PO₄ for enhanced photocatalytic activity under visible light irradiation

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Abstract

The development of visible-light-responsive photocatalysts has attracted considerable attention in the fields of environmental remediation and energy conversion. Among them, silver orthophosphate (Ag₃PO₄) is a promising material due to its strong oxidation ability; however, its photocatalytic efficiency is limited by rapid charge recombination. To solve this problem, natural chlorophyll was introduced as a photosensitizer to modify Ag₃PO₄. The composite was successfully synthesized by a coprecipitation method. The composite was characterized using XRD, SEM, TEM, UV-Vis DRS, PL spectra and Raman spectra. The photocatalytic performance was evaluated under visible-light irradiation. The results showed that chlorophyll-modified Ag₃PO₄ exhibited significantly higher activity compared to pure Ag₃PO₄. This improvement was attributed to the photosensitizing role of chlorophyll, which provides a new absorption and facilitates charge separation. These results suggest that chlorophyll can effectively act as a natural sensitizer, providing a simple and environmentally friendly strategy to improve the photocatalytic efficiency of Ag₃PO₄-based systems.

Keywords: Ag₃PO₄, chlorophyll, methylene blue, photocatalyst, photosensitizer

Graphene Quantum Dot–Modified BiVO₄ As An Efficient Photocatalyst for Dye Degradation Under Visible Light

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Abstract

The degradation of methylene blue dye was performed via a photocatalytic process using a BiVO₄/graphene quantum dots (GQDs) composite under visible light irradiation. The influence of GQDs volume on the structural, optical, and photocatalytic performance of the composite was systematically investigated. The composite was characterized using X-ray diffraction (XRD), transmission electron microscopy (TEM), Brunauer–Emmett–Teller (BET) surface area analysis, and UV–Vis diffuse reflectance spectroscopy (UV–Vis DRS). The BiVO₄/GQDs composite exhibited a monoclinic crystal structure with an average crystallite size of 11.1 nm. BET analysis revealed a surface area of 12.735 m²/g. UV–Vis DRS analysis indicated a band gap reduction from 2.51 eV (pure BiVO₄) to 2.47 eV in the BiVO₄/GQDs composite, suggesting enhanced visible-light absorption. Among the prepared samples, the BV/10GQ composite demonstrated the most effective photocatalytic performance at pH 9, achieving 93.60% degradation of methylene blue within 120 minutes. These findings confirm that coupling BiVO₄ with GQDs improves both light-harvesting ability and surface reactivity, resulting in enhanced photocatalytic efficiency. This work highlights the potential application of BiVO₄/GQDs composites in environmental remediation, particularly for the degradation of organic pollutants in wastewater treatment.

Keywords: BiVO₄/GQDs composite, photocatalysis, methylene blue degradation, visible light irradiation, environmental remediation

Macronutrient Distribution in the Western Bali Sea: Seasonal Variability and the Role of The Indonesian Throughflow (ITF)

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Abstract

Macronutrients are essential drivers of marine productivity, supporting phytoplankton growth and sustaining food webs. Despite the ecological significance of the western Bali Sea, knowledge of their seasonal variability remains scarce. This study investigated the surface distribution of phosphate, nitrate, and silicate during the rainy season (November 2024) and the dry season (July 2025). Nutrient concentrations were measured using spectrophotometry, with spatial patterns mapped through Ocean Data View (ODV) and analyzed statistically using Principal Component Analysis (PCA). Results revealed higher concentrations during the rainy season, influenced by terrestrial inputs from aquaculture and tourism, while dry-season enrichment reflected oceanographic forcing from upwelling and the presumed Indonesian Throughflow (ITF). PCA highlighted distinct seasonal groupings, illustrating how natural circulation and human activities jointly shape nutrient dynamics. These findings provide new insight into the interplay of ITF pathways, and anthropogenic pressures, emphasizing the need for continuous monitoring to better understand biogeochemical processes in this dynamic region.

Keywords: Macronutrient, Western Bali Sea, Seasonal Variability, Indonesian Throughflow (ITF)

A Study of Viscoelastic Material Strenght with Fractional Calculus Approach

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Abstract

A viscoelastic material is a material that has both elastic and viscous properties. A viscolastic material in the form of slime is given a vertical force from above. Then the deformation of the viscoelastic material because of the force is modeled using Caputo fractional derivative. The numerical simulation of the solution to the mathematical model fits to the experimental data obtained.

Keywords: : viscoelastic, deformation, Caputo fractional derivative

The use of hibiscus leaf flour (HLF) and bamboo leaf flour (BLF) as natural feed additives based on ammoniated rice straw (RSA) on nutrient digestion and performance of local sheep as a fattening model in rural areas

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Abstract

This study aims to examine the use of hibiscus leaf flour (HLF) and bamboo leaf flour (BLF) as natural feed additives based on ammoniated rice straw (RSA) on nutrient digestion and performance of local sheep as a fattening model in rural areas. A total of 24 local male sheep with an average age of 1.5-2 years with a weight of 25-28 kg were used in this study. The sheep were given worm medicine and placed in individual pens measuring 1 x 0.75 m. Dry matter (DM) intake of each sheep was 4.5% of body weight with DM ratio of RSA and concentrate of 70 : 30. Concentrate and RSA were fed as component feeding with a frequency of feeding was two times each. Sheep were randomly assigned to receive four treatment diets of P0 = 70% ammoniated rice straw + 30% concentrate, P1 = P0 + 12.45 g HLF and 6.5 g BLF/kg DM concentrate, P2 = P0 + 18.75 g HLF and 3.25 g BLF/kg DM concentrate and P3 = P0 + 6.23 g HLF and 9.75 g BLF/kg DM concentrate. Each treatment was repeated 6 times. The results showed that the treatment had no significant effect ($P>0.05$) on dry matter intake, digestibility of dry matter, organic matter, crude fiber, crude protein and average daily gain (ADG), and feed conversion (FC). The conclusion is that HLF and BLF as feed additives are unable to improve nutrient digestibility and fattening performance of local sheep

Keywords:

SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT

The Influence of Bacillus Subtilis Addition on The Compressive Strength of Polypropylene Waste Aggregate Concrete

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Abstract

This study investigates the effectiveness of *Bacillus subtilis* in improving the mechanical properties of polypropylene (PP) waste aggregate concrete. The research addresses the strength reduction problem in lightweight concrete containing hydrophobic PP aggregates by utilising microbial-induced calcium carbonate precipitation (MICP) technology. Concrete specimens with a water-cement ratio of 0.32 were prepared using PP aggregate replacement and varying bacterial concentrations (0%, 2.5%, and 5% by volume of water). Compressive strength was tested at 7, 14, and 28 days. Results indicate that bacterial incorporation significantly enhances compressive strength compared to control specimens, with optimal performance at 5% concentration. The improvement is attributed to the MICP mechanism, where bacterial activity precipitates calcium carbonate that seals microcracks and pores within the cement matrix and the interfacial transition zone. This study establishes that *Bacillus subtilis* effectively mitigates strength reduction in PP waste aggregate concrete, producing sustainable lightweight concrete with improved mechanical properties.

Keywords: *Bacillus subtilis*, self-healing concrete, polypropylene plastic aggregate, compressive strength, MICP

Feed Digestibility and Daily Weight Gain of Jawarandu Goat Supplemented with Seaweed Flour and Chromium Organic

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Abstract

This study evaluated a feed supplementation made of Gracilaria sp. seaweed flour and organic chromium as to enhance the productivity of Jawarandu goats. The experiment was conducted in two treatments: basal diet + 1.5 ppm organic chromium (R0) and basal diet + 1.5 ppm organic Chromium + 2% seaweed flour (R1), and 12 replicates each. Parameters were intake and digestibility of dry matter (DM) and organic matter (OM), feeding behavior, blood physiology, average daily gain (ADG), and body condition score (BCS). The results show that supplementation did not significant effects ($P > 0.05$) on DM and OM digestibility. OM digestibility showed a slight increase from 72.80% in R0 to 74.69% in R1. Blood glucose levels significantly increased, but total volatile fatty acid (VFA) concentrations decreased. Growth performance improved significantly, with higher ADG and BCS observed in the supplemented group. Conclusion that Gracilaria seaweed flour and organic chromium are feasible functional feed additives to support adaptive and sustainable production systems in goat farming.

Keywords: seaweed flour, digestibility, daily gain, goat

Synthesis of C-cinamalcalix[4]resorcinarene Compounds and Activity Assay as Sunscreen

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Abstract

Exposure to UV radiation from sunlight on the skin can cause wrinkles, erythema, aging, and even skin cancer. It is to protect the skin from exposure to UV radiation is by using sunscreen. The aim of the research is the synthesis of the compound C-cinamalcalix[4]resorcinarene and activity testing as a sunscreen. Synthesis of the compounds was made through the reaction of cinnamaldehyde with resorcinol with HCl as a catalyst. The synthesized compounds were analyzed using thin layer chromatography (TLC), solubility test, melting point test, and FTIR spectrophotometer. Activity test as an active sunscreen ingredient through UV absorption test and photostability test using a UV Vis spectrophotometer. The synthetic product obtained was brownish red (powder) with a yield of 79.93%, melting point 270 °C decomposed, slightly soluble in DMSO. FTIR characterization showed that there was a wide absorption of the OH group at 3433.29 cm⁻¹, absorption at 2924.09 cm⁻¹ and 2854.65 cm⁻¹ came from Csp³-H from the methine bridge (1450 cm⁻¹). The UV absorption test results obtained λ_{max} at 266 nm which is the UVC area, a molar absorption coefficient of 26,991 M⁻¹ cm⁻¹, SPF with minimal protection with a value of <3 and relatively low photostability.

Keywords: C-cinamalcalix[4]resorcinarene, sunscreen, and synthesis

Destillation Aquaponic's as Mangrove Rehabilitation to Reach Mangrove Sustainability in Permanently of Water Inundation

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Abstract

Destillation aquaponics is the system of mangrove rehabilitation in permanent water inundation. Destillation aquaponic's has different system with vertical and horizontal aquaponics. Destillation aquaponics give bigger planting media than the vertical and horizontal aquaponics to support the growth of mangrove plants. This paper aimed to analyze the growth and survival rate of mangrove plants using the destillation aquaponic's. The results of this research showed that (1) the average percentage of mangrove survival with destillation aquaponics system was 68.33% (one year old). The vertical aquaponic system was 9.17% (one year old), 46.39% (two years old), and 45.26% (three years old). The horizontal aquaponic system was 16.67% (one year old), 31.67% (two years old), and 40.0% (three years old). (2) based on the mangrove species showed that the survival rate of (a) *Bruguiera gymnorhiza* was 61.85% (vertical aquaponic system) and 55.56% (horizontal aquaponic system), (b) *Rhizophora stylosa* 42, 96% (vertical aquaponic system), 44.44% (horizontal aquaponic system), 71.67% (distillation aquaponic system), (c) *Rhizophora mucronata* 48.52% (vertical aquaponic system), 37.78% (horizontal aquaponic system), and 81.67% (distillation aquaponic system). However, *Rhizophora apiculata* and *Avicennia marina* were the mangrove species with the lowest survival percentage

Keywords: destillation aquaponic's, mangrove rehabilitation, permanent water inundation, mangrove growth, survival rate

Variability of Ocean Circulation and Water Mass Characteristics in Sulawesi Sea during ENSO Phase: A Numerical Modelling Approach

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Abstract

The Celebes Sea serves as the primary gateway of the Indonesian Throughflow (ITF), transporting warm Pacific water into the Indian Ocean. Consequently, its oceanographic dynamics are strongly influenced by global climate variability, particularly ENSO. Using CROCO numerical modeling with global climatological and oceanographic datasets, this study examined circulation patterns and water mass characteristics in the Sulawesi Sea during 2015–2020. Based on the ONI index, ENSO phases shifted several times within the study period: a strong El Niño occurred in 2015, while weak to moderate La Niña events were observed in late 2016, the 2018 west monsoon, and late 2020. Model results indicate that the 2015 El Niño reduced temperature and increased salinity, whereas the 2018 and 2020 La Niña events elevated temperature and lowered salinity, particularly at the ITF inflow and outflow. Furthermore, a strong El Niño weakened seasonal currents, while La Niña events enhanced current velocities, especially within the thermocline. These findings highlight the significant role of ENSO in shaping circulation dynamics and water mass variability in the Sulawesi Sea.

Keywords: Celebes Sea, ITF, Model, CROCO, ENSO

Genetic Relationship of Black Ginger (*Kaempferia Parviflora* Wall Ex. Baker) Mutants Irradiated with Gamma Rays Based on Morphological Traits

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Abstract

The black ginger is a member of the medicinal plant family Zingiberaceae. This plant has diverse pharmacological activities, thus playing an essential role in the health sector. Sustainable black ginger cultivation practices are needed to ensure the availability of raw materials for the medicinal industry. However, the cultivation of black ginger to produce secondary metabolites as raw materials for drugs encounters several challenges, such as slow growth patterns, instability and impurity of bioactive compounds, inconsistency of product due to environmental factors, the threat of extinction due to limited genetic diversity, and attacks by pests and pathogens. Development of traits related to cultivation aspects can be done through plant breeding programs. One crucial technique in plant breeding programs to increase genetic variation as germplasm sources is through induced mutations, one of which is physical mutation (exposure to gamma ray irradiation). The purpose of this study was to determine the genetic relationships of black ginger mutants treated with gamma ray irradiation based on morphological characters. This study obtained 13 mutant genotypes irradiated at doses of 2 Gy, 4 Gy, 6 Gy, 8 Gy, 10 Gy, 15 Gy, and 50 Gy. Using NTSYS 2.11 software, based on 20 morphological parameters studied (Labrooy et al., 2018), the genotypes were classified into 2 (two) clusters. Cluster 1 consisted of non-mutant genotypes and a 4 Gy genotype. Meanwhile, the other 12 (twelve) irradiated genotypes showed grouping with diverse branches. The Jaccard similarity coefficient value ranged from 0.77 to 1.00, indicating that the relationship between these mutants is close, so they have a narrow genetic distance.

Keywords: gamma rays, genetic distance, *Kaempferia parviflora* Wall ex. Baker, morphology, mutants

Reproductive Biology of Javaean Barb(*Systomus rubripinnis* Valenciennes, 1842) in the Bodo River, Central Java as the Basis for Inland Fisheries Management

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Abstract

Javaean barb is an indigenous species of freshwater fish belonging to the family Cyprinidae. Research on the reproductive biology of the Javaean barb was conducted in the Bodo River, Kebumen Regency, Central Java, with the aim of understanding its reproductive characteristics as a foundation for inland fisheries management. Sampling was carried out using purposive random sampling techniques, and the data were analyzed both descriptively and quantitatively. The sampling period spanned from February to December 2023. The results showed that the sex ratio between male and female Javaean barb was 1:3. Gonadal maturity stages (TKG) were predominantly observed in stages I, II, and III. The highest gonadosomatic index (IGS) value was recorded in October, with male Javaean barb exhibiting a lower value (3.11%) compared to female Javaean barb (8.15%). The fecundity of Javaean barb ranged from 506 to 5,104 eggs, with egg diameters between 0.41 and 0.65 mm. The length at first gonadal maturity in male Javaean barb (10.5–11.8 cm) was smaller than that of female Javaean barb (13.3–14.5 cm). Based on these findings, Javaean barb in the Bodo River demonstrates good reproductive potential and consistent gonadal maturation, indicating its suitability as a biological basis for inland fisheries management.

Keywords: Bodo, javaean barb, reproduction, river

In Silico Molecular Docking: Potential Activity of Flavonoid, Quercetin, and Gallic Acid from *Coprinus Comatus* Mushrooms as A-Amylase Enzyme Inhibitors

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Abstract

Diabetes mellitus is one of the global health problems whose prevalence continues to increase. Based on IDF data for 2024, the prevalence of DM in Indonesia is 11.3%. Therefore, comprehensive management of DM patients is necessary. One therapeutic strategy that has been widely researched is the inhibition of the α -amylase enzyme, which functions to hydrolyze starch into glucose. Inhibition of this enzyme can suppress postprandial blood glucose levels, making it effective in controlling type 2 diabetes. The use of natural compounds is a potential alternative because they have relatively fewer side effects compared to synthetic drugs. *Coprinus comatus* mushrooms are known to contain bioactive metabolites such as flavonoids, alkaloids, triterpenoids, quercetin, and gallic acid, which have potential antidiabetic activity. This study aims to evaluate the potential of these three compounds as α -amylase enzyme inhibitors through an in silico approach using the molecular docking method. Ligand preparation was carried out on flavonoids, quercetin, and gallic acid, while the target protein used was α -amylase (1OSE). The docking process was performed to obtain binding affinity values and analyze active residues involved in ligand-protein interactions using Resep Python (PyRx 1.2) and BIOVIA Discovery Studio 2022 Client ver. 21.1 software. The results showed that flavonoids had the lowest binding affinity value, namely -6.8 kcal/mol, followed by gallic acid at -5.2 kcal/mol. Meanwhile, quercetin showed a value of -4.5 kcal/mol, making its affinity relatively weaker than flavonoids and gallic acid. This study concludes that flavonoid compounds show the greatest potential as α -amylase inhibitors. These results support the role of *C. comatus* as a source of natural bioactive compounds that can be developed as candidate antidiabetic agents. However, further in vitro and in vivo studies are needed to verify their biological activity and pharmacological aspects.

Keywords: *Coprinus comatus*, α -amylase, flavonoids, quercetin, gallic acid, molecular docking.

Adsorption of Tartrazine Dye with Hydrotalcite Ni/Al Intercalated by Polyoxometalate K₄[α -SiW₁₂O₄₀]

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Abstract

The treatment of tartrazine dye waste is necessary because tartrazine can cause harms for the environment as well as to the living organisms. One of the methods of the tartrazine dye treatment is through adsorption process. Hydrotalcite material is commonly used as an adsorbent of synthetic dye due to its effectiveness in adsorption process. The structure of hydrotalcite modified with an intercalant can enhance its adsorption capacity. This study aims to investigate the adsorption of tartrazine dye using Ni/Al hydrotalcite intercalated with polyoxometalate K₄[SiW₁₂O₄₀], with experimental parameters including pH, contact time, and adsorbate concentration. Additionally, the kinetic model and adsorption isotherm are studied. The synthesis of hydrotalcite pristine was performed using the coprecipitation method followed by a hydrothermal process at 100°C for 15 hours with a 3:1 (Ni:Al) ratio, yielding Ni/Al-NO₃. The intercalation of the polyoxometalate compound K₄[SiW₁₂O₄₀] and Ni/Al-NO₃ was performed using the ion exchange method at a 1:1 ratio, resulting in Ni/Al-[α -SiW₁₂O₄₀]. The synthesis results were characterized using Fourier Transform Infrared (FTIR), X-Ray Diffraction (XRD), and Scanning Electron Microscopy - Energy Dispersive X-Ray Spectroscopy (SEM-EDX). The optimal conditions for tartrazine adsorption by Ni/Al-[α -SiW₁₂O₄₀] hydrotalcite were obtained at pH 3, contact time of 90 minutes, and adsorbate concentration of 10 mg/L. The adsorption kinetics followed the pseudo-second-order kinetic model with an R² value of 0.9997; an adsorption rate constant of 0.9368 g/mg·min; and a q_e value of 22.0264 mg/g. The adsorption isotherm followed the Langmuir isotherm model with an R² value of 0.9974; a KL value of 3.4758 L/mg; and a Q_{max} value of 68.4931 mg/g.

Keywords: Adsorption, Hydrotalcite, Tartrazine

Growth Performance of Tilapia Fish Juvenile (*Oreochromis niloticus*) with Substitution Feed of Fifth-Instar Black Soldier Fly Maggot Flour.

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Abstract

Black soldier fly (BSF) maggot meal has a high protein content, which has the potential to replace fish meal as a feed ingredient. Maggot meal of the 5th instar was chosen because, in addition to having a high protein content, it also has optimal biomass. The study aims to determine the growth performance of female tilapia fish when fed with 5th instar BSF larvae meal as a substitute. The research method used a completely randomized design with five treatments: 0%, 25%, 50%, 75%, and 100% substitution of BSF maggot meal. A total of forty-five tilapia juveniles with a size of ten cm and a weight of 6-7 grams were used in the study for 28 days. Research parameters include growth performance and fish survival rate. One-way ANOVA analyzed data with a 95% confidence level and Tukey's further test. Absolute weight gain, length gain, SGR, FCR, and feed efficiency during maintenance varied and were best in the P5 treatment, which were 6.78g, 2.15cm, 6.06%, 0.64, and 157%, respectively. The fish survival rate can reach 80% at P3 and P5. Based on the study's results, providing 5th-instar maggot flour can replace fish meal in improving the growth performance of tilapia juveniles.

Keywords: 5th-instar maggot flour, growth, substitution feed, survival rate, tilapia juvenile

Crop Growth Model for Potato Seedlings under Different Growing Media and Organic Fertilizers

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Abstract

Potatoes are a high-economical product that supports food self-sufficiency and security as well as farmer welfare. After a number of cultivation periods, the potato production tends to decrease due to reduced land fertility by erosion and inadequate seed quality. Suitable growing media and fertilizers play an important role in providing good potato seedling, but it needs to be further investigated to confirm the seed quality. In this study, potato seedlings under different treatments of growing media and organic fertilizers were modeled using a system dynamic-based simulation to analyze seed growth and yield during a cultivation period. There were 2 types of growing media (cocopeat/CPT; whole-soil/TU) and 3 dosages of organic fertilizers (27-ton/ha, PO1; 41-ton/ha, PO2; 54-ton/ha, PO3) applied into the polybag-scale of potato seedlings. In each growth-stage, biomass parameters (leaves, stems, roots, tubers) of seeds and microclimate parameters (temperature, RH, wind-speed, radiation, rainfall) were periodically measured. The multiple growth-stage data and influencing factors were incorporated and modeled using a Vensim PLE software. The simulated data were validated against the measured ones by root mean square error (RMSE). The results revealed that the growth and yield of potato seeds could be well modeled, by which the biomass distribution for seed compartments and growth-stages in each combined-treatment could be smoothly represented. The RMSE values were varied for each combined-treatment, but it showed reliable value in the combined whole-soil and organic fertilizer of 27 ton/ha (TU-PO1) with highest-average biomass production of the potato seeds.

Keywords: Crop growth model, potato seedling, growing media, organic fertilizer, Vensim PLE

Bioactive Compound Activity of Abalone Oyster Mushroom (*Pleurotus cystidiosus*) Mushrooms as α -amylase enzyme Inhibitors: In Silico Molecular Docking

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Abstract

Diabetes mellitus (DM) is one of the global health problems whose prevalence continues to increase. Based on IDF data for 2024, the prevalence of DM in Indonesia is 11.3%. Therefore, comprehensive management of DM patients is necessary. One therapeutic strategy that has been widely researched is the inhibition of the α -amylase enzyme, which functions to hydrolyze starch into glucose. Inhibition of this enzyme can suppress postprandial blood glucose levels, making it effective in controlling type 2 diabetes. The use of natural compounds is a potential alternative because they have relatively fewer side effects compared to synthetic drugs. *Pleurotus cystidiosus* mushrooms are known to contain bioactive metabolites such as flavonoids, alkaloids, triterpenoids, quercetin, and gallic acid, which have potential antidiabetic activity. This study aims to evaluate the potential of these three compounds as α -amylase enzyme inhibitors through an in silico approach using the molecular docking method. Ligand preparation was carried out on flavonoids, quercetin, and gallic acid, while the target protein used was α -amylase (1OSE). The docking process was performed to obtain binding affinity values and analyze active residues involved in ligand-protein interactions using Resep Python (PyRx 1.2) and BIOVIA Discovery Studio 2022 Client ver. 21.1 software. The results showed that flavonoids had the lowest binding affinity value, namely -6.8 kcal/mol, followed by gallic acid at -5.2 kcal/mol. Meanwhile, quercetin showed a value of -4.5 kcal/mol, making its affinity relatively weaker than flavonoids and gallic acid. The conclusion of this study is that flavonoid compounds show the greatest potential as α -amylase inhibitors. These results support the role of *P. cystidiosus* as a source of natural bioactive compounds that can be developed as candidate antidiabetic agents. However, further in vitro and in vivo studies are needed to verify their biological activity and pharmacological aspects.

Keywords: α -amylase, flavonoids, quercetin, gallic acid, *Pleurotus cystidiosus*, molecular docking

Comparative Compositional Profiling of Fish Terasi Using Physicochemical and FTIR Approaches

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Abstract

This study provides a comparative characterization of Indonesian fish terasi from various regions based on physicochemical properties and Fourier Transform Infrared (FTIR) spectral profiles. Parameters analysed included proximate composition, salt, lactic acid, pH, water activity, amino acid composition, free glutamic acid, and nucleotides (AMP and IMP). Free amino acids and nucleotides were quantified using High-Performance Liquid Chromatography (HPLC), while total amino acids were determined via Ultra-Performance Liquid Chromatography (UPLC). Texture and colour were measured instrumentally, and FTIR-ATR spectroscopy was employed to identify functional groups and assess molecular similarity. Principal Component Analysis (PCA) revealed distinct compositional patterns linked to differences in raw materials and processing methods. FTIR-PCA clustering further indicated an association between protein content and spectral profiles, suggesting that protein levels could potentially be predicted from FTIR absorbance intensities. While umami-related compounds such as glutamic acid and IMP were detected, sensory evaluation was not conducted. Overall, the findings offer preliminary insights into the chemical and physical characteristics of Indonesian fish *terasi* and underscore its potential as a source of bioactive peptides for functional food and nutraceutical applications.

Keywords: Fermented fish paste, Fourier transform infrared spectroscopy (FTIR), Compositional and quality analysis, Physicochemical properties, Fish terasi

Screening of a PGPR and Nitrifying Bacteria for Heavy Metal Tolerance in Post-Mining Soils

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Abstract

Gold mining provides economic benefits but also causes negative environmental impacts, including ecosystem damage, pollution, and land degradation. Post-mining soil is generally poor in nutrients due to heavy metal accumulation, acidic pH, and low organic matter. Conventional restoration methods using lime and urea are often ineffective and costly. An alternative approach is the use of a microbial consortium composed of PGPR and nitrifying bacteria, which can improve soil structure, enhance fertility, and support the growth of pioneer plants. This study aimed to develop a bacterial consortium tolerant of pollutant metals commonly found in post-mining soils (Zn, Pb, and Al). To achieve this, salinity- and low-pH-tolerant PGPR isolates were obtained from iron sand and the rhizosphere of coastal plants in Java, while nitrifying bacterial isolates were collected from fish pond sediments by the Microbiology Laboratory. The results showed that 17 of the 62 PGPR isolates were able to grow in NB medium supplemented with 0.1 mg/L Zn, Pb, and Al. In contrast, all nine nitrifying bacterial isolates tested exhibited resistance under the same conditions. These results indicate the potential of combining PGPR and nitrifying bacteria to develop a resilient microbial consortium for post-mining soil restoration.

Keywords: Bioremediation; microbial consortium; nitrifying bacteria, PGPR, post-mining soils

Optimization of Drying of Grains on Dryer Machines Using The Taguchi Method to Obtain The Best Water Content

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Abstract

PT MDP faces challenges in the grain drying process, where the final moisture content is often unstable and does not meet the National Food Agency's (BAPANAS) target of 14%. This fluctuation impacts the quality and yield of the resulting rice. This study aims to optimize the grain drying process in a rice dryer by applying the Taguchi method to determine the most effective combination of factors and levels to achieve the best and most stable moisture content. This experimental method uses an L4(2³) orthogonal matrix with three control factors: initial moisture content (level 1: $\leq 25\%$; level 2: 26-30%), drying time (level 1: 8 hours; level 2: 10 hours), and furnace temperature (level 1: 90°C; level 2: 95°C). Data analysis was performed using ANOVA and Signal-to-Noise (S/N) Ratio with the characteristic "Nominal is the Best". The results showed that the most influential factor was the initial moisture content with a contribution of 91.62%, followed by the furnace temperature at 6.06%, while the drying time had no significant effect. The optimal combination of levels obtained was the initial moisture content at quality 1 ($\leq 25\%$), a drying time of 10 hours, and a furnace temperature of 95°C. The results of the confirmation experiment with this combination showed an average final moisture content of 14.0% and 14.1%, very close to the desired target and proving the validity of the optimal setting.

Keywords: Drying process, Optimization, Taguchi Method

Community Structure and Carbon Storage Potential of Mangrove at the Northern Coast of Java

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Abstract

This study analyzes the community structure and carbon storage potential of mangrove ecosystems in three locations along the North Coast of Java: Sidoarjo, Pemalang, and Brebes. The survey method was applied using quadratic plots. Results show that vegetation composition was dominated by the genera *Avicennia*, *Sonneratia*, and *Rhizophora*, with varying importance value indices across stations. The highest total carbon storage was found at station P-02 (Pemalang) at 346.94 tons/ha, followed by B-03 (Brebes) at 273.66 tons/ha, and S-02 (Sidoarjo) at 225.53 tons/ha. CO₂ absorption also varied, with the highest value reaching 1272.10 tons/ha at P-02. The findings indicate that mangrove ecosystems in these three locations play a significant role as carbon sinks, with varying potentials depending on species composition and habitat conditions. This study highlights the importance of conservation and sustainable management to maintain the ecological functions of mangroves.

Keywords: Mangrove, carbon storage, community structure, North Coast of Java, importance value index

Simultaneous Determination of Curcumin and Piperine in Herbal Medicines Using High Performance Liquid Chromatography

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Abstract

Curcumin and piperine are well-established bioactive compounds in herbal medicines, known for their potential therapeutic benefits. This study aimed to develop a method for the simultaneous estimation of curcumin and piperine using high-performance liquid chromatography (HPLC). Chromatographic separation was achieved using a C8 column (150 x 3.0 mm, 3.5 μ m) as the stationary phase, with a gradient elution method employing a mobile phase of methanol and deionized water (60:40 v/v) at a UV detection wavelength of 365 nm. A calibration curve was established within a concentration range of 5-100 μ g/ml, demonstrating linearity for both curcumin and piperine. The method was validated according to International Conference on Harmonisation (ICH) guidelines, assessing parameters such as linearity, accuracy, precision, limit of detection, limit of quantification, sensitivity, and specificity. However, the recovery and relative standard deviation (RSD) percentages did not meet the acceptance criteria. In commercial product samples, curcumin and piperine concentrations ranged from 0.036% to 0.166% (b/b) and 0.048% to 0.105% (b/b), respectively. The developed method can serve as a quality control tool for the qualitative and quantitative estimation of curcumin and piperine in herbal medicines, though further validation of several parameters is still required.

Keywords: Curcumin, Piperine, Herbal Medicines, HPLC, Validation

Isolation and Characterization of *Pseudomonas fluorescens* Group Collected from the Red Onion Rhizosphere, With Potential to Inhibit *Fusarium* Sp. Growth and Degrade Pesticides

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Abstract

The study aims to isolate and characterize fluorescent-group *Pseudomonas* strains from the red onion rhizosphere and to evaluate their potential to inhibit *Fusarium* sp. and degrade pesticides. The work was conducted at the Plant Protection Laboratory from June to September 2025. The project followed a three-stage design: (1) isolation and characterization of fluorescent-group *Pseudomonas* from the red onion rhizosphere, (2) antagonism assays against *Fusarium* sp., and (3) assessment of pesticide bioremediation potential. Six isolates of fluorescent-group *Pseudomonas* were recovered from the red onion rhizosphere. Several isolates showed >50% inhibition of *Fusarium* sp. growth and demonstrated potential to degrade pesticides, including mancozeb (fungicide), paraquat (herbicide), and chlorpyrifos (insecticide).

Keywords: Antagonistic bacteria, bioremediation, *Pseudomonas*, *Fusarium*, pesticide

Evaluation of Banjaran River Water Quality Based on Physical-Chemical and Biological Parameters in the Upstream, Middle, and Downstream Zones

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Abstract

This study aimed to evaluate the water quality of the Banjaran River by analyzing physical, chemical, and biological parameters in three distinct zones: upstream, midstream, and downstream. Sampling was conducted at representative locations to measure temperature, turbidity, pH, dissolved oxygen (DO), biochemical oxygen demand (BOD), total dissolved solids (TDS), total suspended solids (TSS), and nutrient concentrations (nitrate and phosphate). The biological assessment focused on macrobenthic diversity and abundance as bioindicators of ecological health. The results showed spatial variations in water quality, with the upstream zone mostly showing better conditions, including higher DO levels. Conversely, the downstream zone showed increased turbidity and nutrient enrichment, indicating anthropogenic pressures such as domestic waste discharge, agricultural runoff, and land-use change. Meanwhile, the highest macrobenthic diversity was found in the midstream zone. The integration of physical-chemical and biological parameters provides a comprehensive understanding of the river's ecological status. This evaluation highlights the need for targeted watershed management and community-based conservation strategies to mitigate pollution and restore ecological integrity. It serves as a basis for monitoring and developing policies that emphasize the importance of maintaining river health not only for the ecosystem services of the Banjaran watershed communities but also for biodiversity.

Keywords: Banjaran river, biological indicators, physical-chemical parameters, water quality assessment

Growth of *Dendrobium stratiotes* X *Dendrobium lineale* Orchid Plantlets During the Acclimatization Stage at Various Concentrations of Vitamin B1 and Foliar Fertilizer

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Abstract

Acclimatization is one of the most important stages in plant in vitro culture processes. Reducing plant stress and providing sufficient nutrients are critical in this stage. Vitamin B1 can reduce stress and stimulate root growth, while the foliar fertilizer improves nutrient availability during the acclimatization of hybrid orchids. The study aims to determine the optimal concentration of vitamin B1 and foliar fertilizer for the growth of *Dendrobium stratiotes* x *Dendrobium lineale* orchids during the acclimatization stage and to identify the most effective treatment combination. The study used a factorial randomized block design consisting of two treatment factors. The first factor was the vitamin B1 application, which consisted of four levels: 0, 1.5, 3, and 4.5 ml l⁻¹. The second factor was leaf fertilizer concentration: 0, 2, 3, and 4 g l⁻¹. Vitamin B1 at a concentration of 3 ml l⁻¹ was the most effective treatment in increasing root length by 3.23 cm and root number by 14.00 roots. A leaf fertilizer concentration of 2 g l⁻¹ increased leaf length by 3.67 cm, leaf area by 6.04 cm², and plant height by 3.65 cm. The 4 g l⁻¹ foliar fertilizer increased in root number of 13.83 roots and leaf greenness of 98.46 SPAD units. The combination of different vitamin B1 concentrations and foliar fertilizer did not show an optimal combination.

Keywords: *Dendrobium stratiotes* x *Dendrobium lineale*, acclimatization, vitamin B1, foliar fertilizer.

Effect of Application of Fertilizers on Growth and Flowering of Lemon

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Abstract

Lemon is an important fruit for human health and agribusiness. Sustainable production of lemon need many appropriate cultivation techniques. One of them is fertilization with corect doses. The research aimed to study the effect of application of fertilization on growth and flowering of plant. The research was conducted from July to September 2025 at MOA Farm that located at Pekaja, Kalibagor, Banyumas. We used 5 years-old lemon trees var California. This nonfactorial experiment used Completely Randomized Design with 4 replications. There were nine treatments namely without NPK (control), NPK Rusia 100 g/tree, NPK Rusia 200 g/tree, NPK Rusia 300 g/tree, NPK Rusia 400 g/tree, MKP Pak Tani 100 g/tree + KNO₃ putih 50 g/tree, MKP Pak Tani 200 g/tree + KNO₃ putih 100 g/tree, MKP Pak Tani 300 g/tree + KNO₃ putih 150 g/tree, MKP Pak Tani 400 g/tree + KNO₃ putih 200 g/tree. Observed variables were number of vegetative flush, number of generative flush, time of flowering, and number of flower. Data was analysed by Anova and DMRT at 5%. The results of research showed that application of fertilizer of MKP Pak Tani 300 g/tree + KNO₃ putih 150 g/tree gave the highest number of vegetative and generative flush at 6 WAT. The earliest flowering and the highest number of flower were achieved by application of MKP Pak Tani 400 g/tree + KNO₃ putih 200 g/tree.

Keywords: lemon, fertilizer, flower, vegetative flush, generative flush

Molecular Profiling of CO1 Gene Diversity in Microworms Across Java: Bioprospecting Potential for Natural Resource Applications

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Abstract

Microworms are a significant yet underexplored component of soil biodiversity with considerable potential for biotechnological applications. This study examined the molecular diversity of microworms across five cultivation sites in Java, Indonesia, using cytochrome c oxidase subunit I (CO1) gene sequencing. Microworm samples were collected from five distinct locations (BAN, GRE, LUM, DEP2, SIDO). DNA was extracted, assessed for quality using a NanoDrop 2000 spectrophotometer, and amplified via PCR targeting the CO1 gene. PCR products were analyzed by gel electrophoresis and subjected to DNA sequencing, followed by BLAST analysis for species identification. DNA quality assessment revealed acceptable purity, with A260/280 ratios ranging from 2.05 to 2.17 and A260/230 ratios from 1.52 to 2.48. All samples yielded successful amplification of CO1 gene fragments (~200–300 bp). Sequence analysis consistently identified the specimens as *Panagrellus redivivus* across all sites, indicating remarkable genetic uniformity despite geographical separation. The widespread distribution of *P. redivivus* in Java highlights its potential as a standardized biological resource for biotechnological applications. The observed genetic uniformity provides a solid foundation for consistent bioprospecting initiatives and sustainable utilization of this nematode species.

Keywords: *Panagrellus redivivus*, CO1 gene, molecular identification, Java, bioprospecting, microworms

**Ectoparasites on Tilapia Seeds Belonging to the Minasari Kutasari Fish Farming Group,
Banyumas Regency**

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Abstract

A study was conducted to determine the ectoparasites infecting tilapia fry owned by farmers in the Minasari Kutasari fish farming group in Banyumas Regency. The research method used was a survey with random sampling. The results revealed the presence of ectoparasites *Trichodina* sp., *Gyrodactylus* sp., and *Dactylogyrus* sp., with a prevalence of 80%.

Keywords: Ectoparasite, Tilapia, Pokdakan, Kutasari, Banyumas



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Bio-Regenerative Capacity of Micro-Food Web Communities to Enhance Soil Health

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Abstract

This study investigates the potential of biologically enriched compost containing diverse microfood web communities, including bacteria, fungi, protozoa, and nematodes, for the ecological restoration of degraded soils. A 14-week field trial was conducted using different abundances of microfood web alongside chemical fertilizer and control treatments. Soil biological health indicators, including microbes, nematode diversities, and physicochemical properties, were systematically assessed. Enhancement of the microfood web significantly increased beneficial microbial populations and nematode functional groups, particularly bacterivores, fungivores, and predators, while reducing herbivorous nematodes associated with plant stress. Redundancy analysis revealed correlations between the community application and improvements in macronutrient levels, especially organic carbon, nitrogen, and potassium. Nematode-based indices indicated more enriched and structured food webs, reflecting greater ecological complexity and reduced environmental disturbance. These findings suggest that biologically active microfood web communities not only enhance soil fertility but also support resilient trophic interactions, which are essential for long-term ecosystem sustainability.

Keywords: functional groups, microfood web, nematodes, protozoa, soil restoration

Diversity of Rare Trees Logged Down in Western Part of Central Java

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Abstract

Rare plants are a group of plants whose existence is limited and threatened with extinction. The need for land for development drives land conversion, resulting in the widespread logging of rare trees. Therefore, an inventory of rare tree species which have been cut down needs to be carried out. Efforts to save endangered trees are urgently needed. The objectives of this study were: 1) to obtain data on the diversity of rare trees, and 2) to monitor the frequency of rare tree logging activities. The method used in this study was a survey with purposive sampling in the timber industry in several regencies in western part of Central Java, including Banyumas, Cilacap, Purbalingga, Banjarnegara, Wonosobo, Brebes, Tegal, and Pemalang. The felled wood was identified and the tree species name was recorded. The results of this study indicated that there were seven (7) rare trees species namely two Critically Endangered (CR) (*Dipterocarpus littoralis*), two Endangered (EN) trees (*Pterocarpus indicus* and *Swietenia macrophylla*), three Vulnerable (VU) trees (*Dalbergia latifolia*, *Pinus merkusii*, and *Archidendron pauciflorum*), and one Near Threatened (NT) tree species (*Swietenia mahagoni*). The highest logging frequency occurred in *Dalbergia latifolia*, *Pinus merkusii*, and *Swietenia mahagoni*. Some conservation status needs to be re-accessed and updated.

Keywords: conservation, diversity, frequency, logging, rare trees

Species of pest mites and predators on cassava plants (*Manihot esculenta* Krantz) at several altitudes

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Abstract

Plant pest mites are usually found on the underside of leaves to avoid exposure to direct sunlight, predatory mites, rain, and wind and make delicate webs like spider threads for living, laying eggs, eating and avoiding enemy attacks. the same applies to predatory mites that live alongside pest mites. It is suspected that altitude affects pest mite and predator species. The purpose of this study was to identify pest mite and predator species at altitudes of 4 m above sea level, 75 m above sea level, and 300 m above sea level. The research method was a survey using purposive sampling techniques. The cassava leaves that were collected were taken to the Entomology-Parasitology Laboratory for identification. The results of the study show that the species of pest mites at an altitude of 4 m above sea level are *Tetranychus kanzawai*, *T. cinnabarinus*, *Oligonychus gossypii*, *Brevipalpus obovatus*, *T. urticae*, *T. putrescentiae*, *Paralorria* sp., *T. truncatus*, and *Euseius concordis*. Meanwhile, the pest mite species at an altitude of 75 m above sea level are *T. kanzawai*, *T. cinnabarinus*, *O. gossypii*, *B. obovatus*, *T. urticae*, *T. putrescentiae*, *Paralorria* sp., *T. truncatus*, and *Euseius concordis*. At an altitude of 300 m above sea level, the pest mite species obtained were *T. kanzawai*, *T. cinnabarinus*, *O. gossypii*, *B. obovatus*, *T. urticae*, *T. putrescentiae*, *Paralorria* sp., *T. truncatus*, and *E. concordis*. The study also found predatory mite species that are always present at all altitudes, namely *Iphiseius degenerans* (Berlese), *Thyphlodromus rykei*, *Mononychellus tanajoa*, *Phytoseius* sp. and *Phytoseius amba*.

Keywords: pest mites, predatory mites, cassava plants, altitudes

Food Habits and Ecological Niche of Snakehead (*Channa striata*) in Bendung Gerak Serayu Banyumas, Central Java

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Abstract

Research on feeding habits and ecological niches is an important biological characteristic of fish to support fish resource conservation. The purpose of this study was to analyze the feeding habits and ecological niche of snakeheads (*Channa striata*) in Bendung Gerak Serayu, Banyumas Regency, Central Java. The study was conducted from May to September 2025. The method used was a survey with purposive random sampling in the areas before and after the dam. Fish were caught using jorang fishing gear. The parameters measured were fish number, preponderance index (IP), and niche (N). The results indicated that the fish population before the dam was higher than after the dam. Aquatic insects were the snakehead's primary food source (IP value 75.4%), and fish were the secondary food source (IP 21.16%). The snakehead's ecological niche value was 0.18, indicating that snakeheads are classified as specialists in utilizing available food sources, including carnivorous fish. This study can be used as a reference for managing snakeheads, native to Bendung Gerak Serayu, Banyumas Regency, Central Java.

Keywords: Bendung Gerak Serayu, food habits, snakehead

Antioxidant Activity of Coconut Sugar Coffee Drink Enriched with Black Rice Bran, Cardamom, and Ginger

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Abstract

Low glycemic index instant coffee rich in fibre and antioxidants with the addition of black rice bran, ginger and cardamom using coconut sugar sweetener is an alternative to provide functional food based on local potential to prevent degenerative diseases triggered by free radicals such as diabetes and hyperlipidemia. The aim of this study was to determine the effect of adding black rice bran, ginger, and cardamom on the fibre content and antioxidant activity of coconut sugar coffee. This was an experimental study using a Randomized Block Design (RBD) with three replications. Factors tested were: 1) substitution of black rice bran to total ground coffee (10%, 15%) 2) addition of cardamom flour (2.5%, 5% and 7.5%) and 3) addition of ginger extract (15%; and 20%). Parameters observed include: water content, fibre content, and DPPH. The results showed that the addition of black rice bran, cardamom and ginger affected the fibre content and antioxidant activity of coconut sugar coffee drinks.

Keywords: Coconut Sugar Coffee; Rice Bran; Cardamom; Ginger; Antioxidants

Supplementation of Waste Powder from Several Types of Mushrooms on Body Weight and Breast Circumference of KUB Chickens in the Starter Period

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Abstract

The performance of native chickens is still a problem in Indonesia. This study aims to examine the effect of mushroom waste powder supplementation on the body weight, daily weight gain, and breast circumference of KUB chickens during the starter period. The research materials used included 140 KUB chickens (Kampung Unggul Balitbangtan), oyster mushroom powder (*Pleurotus ostreatus*), wood ear mushroom (*Auricularia auricula-judae*), button mushroom (*Agaricus bisporus*), and basal feed (starter period). The research design was a completely randomized design (CRD) consisting of 7 treatments and 4 replicates, resulting in 28 experimental units. The treatments administered were: J1: Control, J2: basal feed + 0.07% *Pleurotus ostreatus* powder, J3: basal feed + 0.07% *Auricularia auricula-judae* powder, J4: basal feed + 0.07% *Agaricus bisporus* powder, J5: basal feed + 0.07% *Pleurotus ostreatus* and *Auricularia auricula-judae* powder, J6: basal feed + 0.07% *Pleurotus ostreatus* and *Agaricus bisporus* powder, J7: basal feed + 0.07% *Auricularia auricula-judae* and *Agaricus bisporus* powder. The parameters observed included body weight, daily weight gain, and breast circumference. The results showed that supplementation with various types of mushroom waste powder had a significant effect ($P < 0.05$) on the breast circumference of KUB chickens during the starter period. Optimal supplementation was achieved in the basal feed + *Agaricus bisporus* powder 0.07% treatment (J4), which resulted in an average breast circumference increase of 28.95 cm. However, mushroom powder supplementation had no significant effect ($P > 0.05$) on body weight and daily weight gain. Thus, *Agaricus bisporus* mushroom waste powder has the potential to be used as an environmentally friendly alternative feed supplement to improve the growth performance of KUB starter chickens.

Keywords: KUB Chickens, Mushroom Powder Supplementation, Body Weight, Breast Circumference, Starter Period

The Assessment of *Strobilanthes Cusia* Leaves as a Source of Natural Antioxidants

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Abstract

Unhealthy eating habits and a polluted environment can lead to the formation of free radicals in the body. One way to reduce the risks posed by free radical activity is to consume foods containing antioxidants. *Strobilanthes cusia*, known locally as tarum, has been reported containing bioactive compounds that have antibacterial, anticancer, and anti-inflammatory properties. The pharmacological potential of *S. cusia* suggests that it could be consumed as a functional food, such as herbal tea. Thus, this study is conducted to determine the potential of *S. cusia* leaves as a natural source of antioxidants. This study employs a completely randomized design with two factors: leaf drying temperatures and brewing times. The tested parameters are polyphenol content and antioxidant activity. The results indicate that *S. cusia* leaves at a leaf drying temperature of 70°C and a brewing time of 10 minutes produced the highest total polyphenol content (2.84 mgGAE/g). The highest antioxidant activity was obtained at a drying temperature of 70°C and brewing times of 8 and 10 minutes, with IC50 values of 239.26 and 239.33 µg/mL. This research will have an impact on *S. cusia* as an herbal tea, opening up new avenues for developing natural herbal products from local ingredients.

Keywords: antioxidant, *strobilanthes cusia*, tea

The Effect of Dysprosium Concentration on the Structure and Magnetic Properties of Strontium Ferrite as a Microwave Absorber

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Abstract

The presence of electromagnetic interference (EMI) disrupts the performance of devices that use microwaves, such as medical devices, wireless devices, radar systems, and communication satellites. The problem of electromagnetic interference (EMI) can be overcome by using materials that can absorb waves with various frequencies. This study aims to create microwave absorbing materials based on strontium ferrite with rare earth metal doping in the form of dysprosium (Dy) with varying concentrations of 0, 5, 10, and 15 mol% using the solid state reaction method. The addition of Dysprosium can affect the structure and size of crystals, magnetic properties, and microwave absorption of strontium ferrite materials. Six crystal phases were formed, namely Iron Oxide (Fe_2O_3) with a rhombohedral crystal structure, Strontium dodecaferrate (III) ($\text{Sr}_2\text{Fe}_{24}\text{O}_{38}$) with a hexagonal crystal structure, Magnetite-h ($\text{Fe}_{12}\text{O}_{16}$) with an orthorhombic crystal structure, $\text{Dy}_4\text{Fe}_4\text{O}_{12}$ with an orthorhombic crystal structure, Fe_5Dy with a hexagonal crystal structure, and SrFeO_2 with a tetragonal crystal structure. The average crystal size ranges from 66.025 to 82.25 nm. The results of VSM characterization show that the DySrFe material is soft magnetic. The magnetic susceptibility of the DSF0 sample is classified as a superparamagnetic material with an order of 10^{-6} , and DSF5, DSF10, and DSF15 are classified as paramagnetic materials with an order of 10^{-5} . The VNA characterization results showed the greatest absorption power in the DSF15 sample with a reflection loss value of -94.79 dB and an absorption percentage approaching 100%.

Keywords: Dysprosium, Microwave Absorber, Solid State Reaction, Strontium Ferrite

Analysis of Clay Mineral Content from Different Weathering Levels of Rock (Case Study from the Landslide Zone in Banjarmangu, Banjarnegara)

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Abstract

The analysis of the clay content in rocks at various weathering levels was conducted using a Scanning Electron Microscope (SEM) with a magnification of 2500x, supplemented by X-Ray Diffraction (XRD) and Energy Dispersive X-Ray (EDX) data. The observed samples (DP II to DP VI) represent weathering levels from zone IV to zone I. The results show a decrease in the percentage of fresh core rock. The results showed a decrease in the percentage of fresh core rock, from more than 75% in DP II to 0% in DP VI. The identification of clay minerals revealed the dominance of smectite, illite, kaolinite, and montmorillonite with variations in composition at each weathering level. Smectite is more prominent at low weathering levels, while illite, kaolinite, and montmorillonite increase at advanced weathering levels. At the most intensive weathering level, quartz decreases significantly to 2.1% and the sample is dominated by clay minerals. These changes in texture and mineral composition indicate a reduction in porosity and permeability of the rocks, and demonstrate the close relationship between weathering processes, clay mineralization, and the physical properties of rocks in the study area.

Keywords: Scanning Electron Microscope (SEM), Rock weathering, Clay minerals, Porosity, Permeability, Rock Physics

Avitourism Potential and Bird Diversity in Karang Kemojing Village, Banyumas, Indonesia

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Abstract

Karang Kemojing Village in Gumelar, Banyumas, offers a unique blend of natural beauty, traditional culture, and agricultural landscapes that create opportunities for ecotourism. Among its diverse attractions, bird-based ecotourism holds great potential, as the surrounding forests and farmlands provide habitats for various bird species. This study aims to scrutinize the avitourism potential of the Karang Kemojing areas through bird species diversity assessment. Field surveys were conducted from April to June 2025. Bird species were identified and counted at each point of encounter, and data were analyzed using the Shannon-Wiener diversity index. A total of 568 individual birds representing 47 species and 21 families were recorded. This area showed a high level of diversity ($H' = 3.121$; high category). This study identified seven endemic species and five species protected under Indonesian wildlife conservation laws, including several raptors that have been listed as Appendix II status. These findings highlight the significant avitourism potential of Karang Kemojing. Promoting bird ecotourism in this area not only supports conservation but also empowers local communities through sustainable tourism initiatives

Keywords: Avitourism, Bird Diversity, Karang Kemojing, Potency, Shanon-Wiener

Multi-Cation Doped NiFe_2O_4 Nanoparticles for Enhanced Electrochemical Glucose Biosensors

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Abstract

The increasing prevalence of diabetes mellitus highlights the urgent need for reliable and cost-effective glucose monitoring tools. Electrochemical biosensors based on glucose oxidase immobilized on chitosan matrices offer a promising approach, yet their performance is restricted by the poor conductivity of chitosan. NiFe_2O_4 nanoparticles are attractive alternatives due to their inherent electrochemical stability, but further enhancement is required to achieve high sensitivity and selectivity. This study introduces a multi-cation doping strategy (Cu–Co, Cu–Mn, Cu–Zn) on NiFe_2O_4 spinel structures to generate additional active sites and facilitate electron hopping, thereby improving charge transfer. The doped NiFe_2O_4 nanoparticles were successfully synthesized and confirmed by FTIR and SEM-EDX, revealing uniform particles in the 100–200 nm range. Cyclic voltammetry results show that chitosan–nanoparticle composites exhibit superior electron transfer performance compared to pristine chitosan, underscoring their potential as advanced immobilization matrices. Current work aims to optimize the composite formulation and evaluate biosensor performance parameters such as precision, accuracy, linearity, detection limit, repeatability, and storage stability. The developed biosensor will also be tested with real blood samples and benchmarked against standard clinical methods. This approach demonstrates that multi-cation doping of NiFe_2O_4 offers a smart material platform for next-generation glucose biosensors with significant potential in point-of-care diagnostics.

Keywords: NiFe_2O_4 , multi-cation doping, glucose biosensor, chitosan composite, electrochemical sensing

Sub-Chronic Nephrotoxicity Test of *Plantago Major* L. Extract

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Abstract

This study aimed to evaluate the sub-chronic nephrotoxic potential of ethanolic *Plantago major* L. leaf extract in male Wistar rats through histopathological assessment of proximal tubular cells. Thirty rats were randomly assigned to five groups (n=6 each): Group A (control, CMC-Na), Group B (extract 50 mg/200 g BW), Group C (100 mg/200 g BW), Group D (200 mg/200 g BW), and Group E (400 mg/200 g BW). The extract was administered orally for 21 days following 7 days of acclimatization. On day 29, kidneys were harvested, fixed in neutral-buffered formalin, and stained with hematoxylin–eosin for microscopic evaluation. Necrosis was scored across 100 proximal tubules per sample, and data were analyzed using the Kruskal–Wallis test. The mean necrosis scores were: control 3.2 ± 0.4 , Group B 3.7 ± 0.2 , Group C 3.8 ± 0.5 , Group D 4.0 ± 0.7 , and Group E 4.0 ± 0.7 , with no statistically significant differences ($p > 0.05$). Microscopy showed largely normal tubules in controls and mild degenerative changes in higher-dose groups. In conclusion, sub-chronic administration of *P. major* extract up to 400 mg/200 g BW did not cause significant nephrotoxicity, though further studies with extended duration and biochemical markers are warranted

Keywords: *Plantago major* L., nephrotoxicity, sub-chronic toxicity, histopathology, Wistar rats

The Application of Artificial Insemination Using Sexing Semen on the Reproductive Performance of Sakub Sheep

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Abstract

The study aimed to determine the reproductive performance of ewes artificially inseminated using sexed semen from Sakub rams as an effort to preserve local genetic resources. Fresh semen was collected from Sakub rams, and its morphometrics and quality were evaluated for the sexing process. The experimental animals consisted of 20 ewes and 2 (two) Sakub rams. All ewes were synchronized by intramuscular injection of 1 ml prostaglandin (PGF_{2α}) in double doses at 11-day intervals. The experiment was conducted using an experimental design with two treatment groups: group I consisting of 10 ewes inseminated with sexed semen, and group II consisting of 10 ewes inseminated using unsexed semen as a control. The statistical analysis showed that the proportion of Y-chromosome-bearing spermatozoa in sexed semen was significantly ($P < 0.01$) higher than in unsexed semen, whereas the overall quality of sexed semen was significantly lower ($P < 0.05$) than that of unsexed semen. The morphometric proportion of Y spermatozoa in sexed and unsexed semen was $71.11 \pm 3.27\%$ and $49.58 \pm 1.08\%$, respectively. Motility, viability, abnormality, and sperm concentration in sexed semen were $74 \pm 7.75\%$; $76.29 \pm 8.18\%$; $8.87 \pm 3.73\%$ and 5.44 ± 0.50 million/ml, respectively; while in unsexed semen they were $76 \pm 6.15\%$; $79 \pm 6.35\%$; $10.75 \pm 3.19\%$; and 5.87 ± 0.65 million/ml. All ewes inseminated with both sexed and unsexed semen showed 100% estrus, with estrus intensity scores of 3.25 ± 0.49 and 2.91 ± 0.67 , respectively. The conception rates of ewes inseminated with sexed and unsexed semen were 80 and 90%, respectively. It was concluded that semen sexing did not affect the reproductive performance of ewes, further research is needed to evaluate the sex ratio of offspring born.

Keywords: Artificial Insemination, Semen, Sexing, Reproduction, Sakub Sheep

Characterization of Physicochemical and Sensory Properties of Analog Rice Made from Modified Cassava Flour and Broken Rice Flour

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Abstract

Analog rice can be made from flours derived from various tubers and cereals, including modified cassava flour and broken rice flour. This study was aimed to characterize the physicochemical and sensory properties of analog rice made from modified cassava flour and broken rice flour. Analog rice was made by mixing flour with other ingredients such as konjac glucomannan, glycerol monostearate, oil, and water in specific amounts. This was followed by homogenization (20 minutes) and extrusion using a hot extruder at 95°C. The study used a completely randomized design. The results showed that analog rice made from modified cassava flour had higher moisture, ash, carbohydrate, total sugar, starch, total dietary fiber, starch digestibility, protein digestibility, and potassium content than analog rice made from broken rice flour. Analog rice made from broken rice flour has higher protein, fat, and sodium content than analog rice made from modified cassava flour. Sensory testing using scoring and hedonic methods conducted by 40 untrained panelists showed that analog rice made from modified cassava flour had higher levels of fluffiness, grain integrity, and stickiness, while preferences for aroma and taste were lower. The chemical characteristics of this analog rice were closely related to the characteristics of its raw materials. Meanwhile, its physical and textural sensory properties were largely determined by the starch content, amylose-amylopectin ratio, protein, and fat of the raw materials used. The advantage of mocaf analog rice was its dietary fiber content (10.49%db) but its protein content was very low (1.75%db). It is necessary to add protein sources, such as skim and soy protein isolate.

Keywords: analog rice, hot extrusion process, modified cassava flour, broken rice flour, physicochemical and sensory properties

Effect of Fly Ash-Derived Silica on the Functional Group Interactions and Ionic Conductivity of Chitosan/LiOH Solid Polymer Electrolytes Membrane

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Abstract

The development of eco-friendly solid polymer electrolytes (SPEs) has become an important area of research to meet the need for naturally safe and sustainable energy storage systems with improved electrochemical performance. This research involved the synthesis of solid polymer membranes composed of chitosan and lithium hydroxide (LiOH), incorporating silica (SiO₂) sourced from coal fly ash to enhance ionic conductivity and membrane stability. Silica was added at different concentrations of 2% (S2), 4% (S4), and 6% (S6) by weight relative to chitosan, using the solution casting technique. The functional group membranes were examined using Fourier Transform Infrared Spectroscopy (FTIR), and ionic conductivity was assessed via Electrochemical Impedance Spectroscopy (EIS). FTIR spectra showed changes in the distinctive peaks of O–H and N–H stretching at 3397, 3430, and 3410 cm⁻¹; C–H stretching at 2925, 2939, and 2935 cm⁻¹; and C=O/C=C stretching at 1655, 1598, and 1597 cm⁻¹ for samples S2, S4, and S6, respectively. Additionally, the Si–O–Si and Si–O vibrations were observed at 787, 791, and 790 cm⁻¹, suggesting molecular interactions between the dispersed silica from fly ash and the chitosan/LiOH matrix. The peak variations indicate alterations in chemical bonds and increased charge carrier mobility. The addition of silica derived from fly ash enhanced the chemical composition and intermolecular interactions, resulting in improved electrochemical performance. EIS characterization of S2 and S4 membranes yielded values of 1.385 x 10⁻⁸ S/cm, 3.674 x 10⁻⁶ S/cm, and 2.324 x 10⁻⁴ S/cm. The heightened conductivity observed from the incorporation of silica suggests that fly ash silica influences the ionic conductivity of solid polymer electrolyte membranes. The results indicate that chitosan/LiOH-based SPEs combined with dispersed SiO₂ from fly ash represent a promising, environmentally friendly electrolyte material for secure and effective lithium battery applications.

Keywords: Chitosan/LiOH, Silica fly ash, Solid Electrolyte Polymer Membrane

Application of Tetragonula Biroi Colony Propagation Techniques for the Development of Stingless Bee Cultivation in the Klapaan Group, Langgongsari Village, Cilongok District

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Abstract

The cultivation of the stingless bee (*Tetragonula biroi*) has been developed in Langgongsari village, Cilongok sub-district, Banyumas regency, within the Langgongsari Women Farmers group. The group's members, *T. biroi*, are recorded at 100, with 140 colonies. One sub-group that has successfully produced honey regularly is the "Klapaan" group. The stingless bee breeders in this group face obstacles in increasing their production due to the limited number of colonies they maintain. To increase the number of colonies, there are two alternatives: purchasing ready-made colonies imported from Sulawesi at a relatively high price, and independently propagating colonies. However, group members do not yet have the knowledge and skills to propagate colonies independently. The author's 2024 research on colony propagation techniques successfully identified three methods for propagating *T. biroi* colonies. Of the three methods produced, only one method will be applied to the "Klapaan" group, namely the random colony splitting method combined with the bridging model. The goal of this research-based community empowerment is to improve the colony propagation skills of group members and increase the number of colonies maintained. Furthermore, institutionally, this activity aims to increase the amount of research utilized by the community (IKU 5 c). The research-based community empowerment method uses technology transfer, the creation of demonstration plots in the Klapaan Group, and six months of mentoring. The results of this activity are expected to improve participants' colony propagation skills and honey production per group member. The results of this activity will also be presented in a community service journal and compiled into a book/video titled "Appropriate Technology" under the title "Tetragonula biroi Colony Propagation Techniques."

Keywords: bridging, research results, klapaan group, tetragonula biroi colony propagation

Colony Propagation of *Tetragonula biroi* by Producing Gyne for the Sustainability of Meliponiculture

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Abstract

The cultivation of stingless bees of the *Tetragonula biroi* species is currently developing very rapidly in Indonesia, this species originates from Sulawesi and until now there is no colony propagation technique so that to meet the needs of the colony must be brought from Sulawesi and rely on availability in nature. For colony propagation, the main determining factor is the availability of queen candidate cells in the colony. So if it is able to produce queen candidates in the colony then the *T. biroi* colony propagation technique will be easy to do. The purpose of this study was to determine the method of queen cell propagation through queen cell making techniques, adding feed, adding larvae and acceptance in the colony, the length of time for queen cells to form and the success rate of producing new queens. The research method used was an experimental method with a split plot design (Split Plot Design), in 4 selected villages with 10 colonies in each village. The treatment given was the creation of queen cells with dimensions of 4 mm x 5 mm, 5 mm x 6 mm and 5 mm x 7 mm (diameter x height) each cell was filled with the amount of feed as much as 1 x and 2 x worker bee feed, each treatment was made 10 cells and in 1 colony made 30 cells. Observations were carried out after 30-50 days of treatment by calculating the number of queen cells formed and the number of queen cells that hatched. Data analysis used the F Test (Anova) with the help of SPSS 32 software. The benefits of this research in the field of Entomology are proof of the organizational structure of eusocial insects, especially *T.biori*, the benefits in the field of Meliponiculture are the sustainability of cultivation with the ability to provide colony sources independently.

Keywords: Sulawesi, queen, cell, dimension, candidates, split plot design

Productivity of Rice Plants (*Oryza sativa* L.) at Various Doses of N and Formulated Maggot Frass

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Abstract

Nitrogen is a macronutrient that is essential for rice production. Nitrogen fertilizer application is often excessive compared to the recommended dose, resulting in low efficiency. Furthermore, the decreasing soil bearing capacity, characterized by low organic matter content, worsens the rice field environment in rice production. This is evident through the current symptoms of production decline. Applying organic matter and optimizing nitrogen fertilizer are strategies to increase rice efficiency and production. A new and less widely used organic material is maggot frass. This study aims to examine the interaction of N doses and kasgot enriched with zeolite, biochar, and legume forage in supporting the yield and efficiency of N fertilization. This study was conducted in Mujur Lor Village, Kroya, and the Agronomy & Horticulture Lab, Faculty of Agriculture, Unsoed, from May to November 2025. This study used a factorial Randomized Block Design with three replications. The first factor was the formulated maggot frass dose consisting of 0 tons/ha, 10 tons/ha, and 20 tons/ha. The second factor was the nitrogen dose consisting of 0 kg N/ha, 150 kg N/ha, and 300 kg N/ha. The combination of treatments obtained was 9 treatments and repeated three times, so that there were a total of 27 experimental units. Each experimental unit was 4 x 4 m in size. The rice variety used was Inpari 47. The maggot frass formulation used was maggot frass 88% + Zeolite 5% + Biochar 5% + Green legume 2%. The results of the study showed that the nitrogen dose had a significant effect on rice yield; however, the formulated maggot frass dose did not show a significant effect. The dose of 150 kg/ha of nitrogen gave the highest yield of 9.01 tons/ha.

Keywords: rice, nitrogen, maggot frass, yield, dose

Ethanol Extract of Tomatoes in Increasing Enzymatic Antioxidants and Reducing Free Radicals in Rats Exposed to Bisphenol A

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Abstract

Bisphenol A is a toxic substance that pollutes the environment and endangers human health. It can disrupt male reproductive hormones due to the formation of lipid peroxidation. This process is characterized by a decrease in enzymatic antioxidants and an increase in free radicals. Tomatoes contains lycopene, which can reduce free radicals and increase enzymatic antioxidants. The objective of this study was to obtain natural compounds from ethanol extracts of tomatoes to in increasing enzymatic antioxidants in male rats exposed to bisphenol A, Twenty-four rats were used in this study and divided into five groups with five replicates. Group 1 as a healthy control, group 2 as a sick control induced by bisphenol A at a dose of 0.2 mg/kgBW. Group 3, 4 and 5 were induced with extract ethanol tomatoes at dose of 5 mg/kgBW, 10 mg/kgBW and 20 mg/kgBW. The parameters studied included levels of SOD, GPx and MDA. . Data were analyzed by Anova test and continued with Duncan test. A dose of tomato ethanol extract of 10 g/kgBW is effective in increasing antioxidant enzymes SOD and GPx and in reducing malondialdehyde free radicals.

Keywords: Bisphenol A, lipid peroxidation, lycopene, SOD and GPx

Isolation and Characterization of PGPR Indigenous Sugarcane Rhizosphere

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Abstract

Sugarcane is an agricultural commodity that plays a very strategic role as a commodity producing staple food for the community, especially white crystal sugar. Seedlings are one of the production factors that greatly determine production. Farmers generally still use Banggal seedlings with several bud eyes, thus requiring high costs. Single bud eyes innovation is a more efficient and inexpensive innovation, and can provide high production. Quality seedlings will be produced using biological technology by inoculating seeds with useful microbes often referred to as PGPR. This study aims to examine the diversity and abundance of indigenous sugarcane PGPR. This research will be conducted in the Agronomy & Horticulture Laboratory and the Experimental Farm of the Faculty of Agriculture, UNSOED. Soil samples were taken from the rhizosphere of sugarcane plants in Kedungwuluh Village, Purbalingga. The research was conducted from March to November 2025. The results showed that 10 isolates of indigenous sugarcane rhizosphere PGPR could be isolated. All isolates can produce IAA, Nitrogen fixation, and P solubilization. The N fixation ability ranges from 367.50-2047.50 ppm, IAA production ranges from 2.69-5.08 ppm, and P solubilization ranges from 29.52-36.24 ppm.

Keywords: sugarcane, rhizosphere, PGPR, single bud eyes, isolation

**Fish Diversity After Mass Mortality In 2022 At Serayu Movable Dam, Banyumas Regency,
Central Java, Indonesia**

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Abstract

In 2022, there was a mass fish mortality in Serayu Movable Dam. The mass mortality is thought to have occurred because the water quality of Serayu Movable Dam at that time was in very poor condition. The decline in water quality at that time occurred due to water flushing from Panglima Besar (PB) Soedirman Banjarnegara Reservoir. The purpose of this study was to examine the fish diversity after the mass mortality of the fish community in Serayu Movable Dam due to water flushing of PB Soedirman Reservoir in 2022. The study was conducted using a survey method. Fish samples were collected from 6 sampling points (stations) at Serayu Movable Dam. Fish were collected two times with an interval of two weeks. Fish were identified using the identification key from Kottelat *et al.*, 1993. From the results of the study in the Serayu Movable Dam area, 29 species of fish were obtained. In the section before the Serayu Movable Dam, 16 species of fish were found and after the Serayu Movable Dam, 14 species of fish were found. The species of fish found at each station were *Barbonymus gonionotus* and *Systomus rubripinnis*.

Keywords: diversity, fish, Serayu Movable Dam

Diversity of Pest and its Correlation with Environmental Factors on Meliponiculture *Tetragonula biroi* in Banyumas Regency

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Abstract

Introduction *Tetragonula biroi* is a attempt to increase honey production on Melipoculture in the Regency Banyumas . In ecological , introduction new species risky occurrence potensial preference of pest. This diversity pests on melliponiculture and its correlation with factor environment had not yet lots disclosed . The purpose of this study was to determine the diversity and density of pest species in *T. biroi* meliponiculture , and the correlation between pest density and environmental conditions. This study used survey method on 40 *T. biroi* colonies spread across in Pajerukan, Karangwangkal, Pageraji and Langgongsari villages. The dependent variable (Y) was the pest density per location, while the independent variables were X1 = air temperature; X2 = air humidity; X3 = number of flowering plants around the nest. Data analyzed by ANOVA for differences in pest density among locations and Tukey's significant difference test, while multiple correlation tests were used to determine the correlation between pest density and environmental factors, with the SPSS program. The results showed 7 pest species including: honey robber beetles (*Aethina tumida*), long-legged spiders (*Nephila pilipes*) Garden lizard (*Euthropis multifasciata*), Frog (*Rana spp*), Chameleon (*Brobhocela jubata*), black ant (*Dolichoderus thoracicus*), green lizard (*Dasia olivacea*) Pest density has a very significant difference ($p \leq 0.05$) among locations with the highest density in Pageraji. The conclusion is that the higher air temperature, tends to lower pest density, the higher air humidity tends, to higher the pest density and the more flowering plants tends to decrease the pest.

Keywords: Correlation, Diversity, Pests, *Tetragonula biroi*.

Insects Feeding on the siam weed, *Chromolaena Odorata*, in Banyumas

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Abstract

Competition with weeds is one of the obstacles in crop cultivation. The Siam weed, *Chromolaena Odorata*, is a detrimental invasive weed that is widespread throughout Banyumas Regency. Biological weed control is an environmentally friendly method. This study aims to inventory weed-feeding insects in Banyumas. Purposive random sampling was the method used in the survey. The stem-galling fly, *Cecidochara connexa*, and *Aphis* spp. are potential natural enemies of the kirinyu weed. Information about these weed-feeding insects can be used to support environmentally friendly weed control.

Keywords: siam weed, natural enemies



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INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT

The Changes of Mechanical Properties in The Pyroclastic Breccia Weathering, A Case Study of Soil Profile In Banjarmangu Area, Banjarnegara Regency

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Abstract

The weathering of pyroclastic rocks in the Banjarmangu area, specifically on Mount Pawinihan, indicates a change in rock material into soil on the surface, thus causing changes in soil mechanics values in the area. This study aims to determine changes in soil mechanics values in the area. The research method uses the British Standard method for heterogeneous materials, then tests several soil and rock mechanics values as the weathering level changes. The results obtained show differences in soil and rock mechanics values with the weathering level. The specific gravity value tends to decrease from weathering zone 2 to 3 then remains relatively the same until weathering zone 6, the water content tends to increase from weathering zone 2 to 6, the unit weight tends to decrease from weathering zone 3 to 4 then remains stagnant until weathering zone 6, the liquid and plastic limits increase from weathering zone 4 to 6, Cohesion tends to decrease from weathering zone 2 to 4 then remains relatively the same until weathering zone 6, the internal friction angle decreases from weathering zone 2 to 4 then remains relatively the same until weathering zone 6, then the clay content increases from weathering zone 4 to 5 then decreases until weathering zone 6.

Keywords: Zone of weathering, pyroclastic breccia, british standard, heterogen material

Remote Sensing Analysis of Land Change in Segara Anakan

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Abstract

Segara Anakan is an estuary located in the kampung Laut sub-district of Cilacap. This estuary has undergone significant changes due to a combination of sedimentation and land use changes. The water body has experienced a substantial decrease in water depth over the past three decades, primarily due to increased sediment deposition, which has reduced its surface area and affected the overall health of the ecosystem. Human activities upstream, such as agriculture and urban development, have exacerbated these changes by contributing to soil erosion and altering hydrological pattern, thus amplifying the impact or sedimentation. High sedimentation has resulted in shallowing and land subsidence in Segara Anakan. Remote sensing analysis was conducted to determine the land subsidence changes. High sedimentation in Segara Anakan has been recorded at 41.2 hectares per year, resulting in the continuous formation of new sedimentary land. Projected through 2025, if this rate continues, the land subsidence due to sedimentation in Segara Anakan could reach an additional 123.6 hectares 941.2 hectares per year for three year 2025.

Keywords: Segara Anakan, estuary, sedimentation, subsidence, remote sensing

A Density Functional Theory Study on The Hydrogenation of Anisole on a Basal Plane of MoS₂-based Catalysts

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Abstract

Anisole is a widely used model for studying hydrogenation reactions on catalytic surfaces. Here, we applied density functional theory (DFT) to investigate the adsorption and hydrogenation of anisole on the basal plane of the molybdenum disulfide (MoS₂) catalyst. We found that the molecule adsorbs in a horizontal orientation and is primarily stabilized by dispersive interactions. The addition of a hydrogen atom to the methoxy group promotes the formation of an O–H bond and further weakens the adjacent C–O bond. Our analyses of the electronic structure and vibrational frequency support this activation process. These results provide molecular-level insight into the involvement of the MoS₂ basal plane in catalytic reactions through these specific interactions.

Keywords: Anisole, hydrogenation, MoS₂, DFT, activation process

Analysis of a Rack-Type Solar Dryer with Variations in Air Velocity and Rack Configuration

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Abstract

This study aims to investigate the performance characteristics of a rack-type solar dryer by varying air velocity and rack arrangement to determine the most effective drying design. An experiment was conducted with a rack-type solar dryer, sliced cassava as the drying media, and basalt stones as the solar heat storage material. Four treatments were evaluated, including two blower speeds (2 and 4 m/s) and two rack configurations (parallel and zig-zag). Dryer parameters include air velocity, drying time, temperature, relative humidity, solar irradiation, moisture content, drying rate, and drying efficiency. To assess treatment effects, data were analysed both descriptively and graphically. The results showed that increasing the blower speed from 2 to 4 m/s improved heat release in the dryer chamber. Meanwhile, the zig-zag rack structure dispersed heat and humidity more evenly than the parallel rack configuration. Because of the greenhouse effect, the top rack maintained the highest temperature and drying rate. The drying rate was highest at the beginning of the procedure and then decreased as the material's moisture level decreased. The moisture content decreased considerably, reaching an average of 12%, with the zig-zag rack construction resulting in a more consistent reduction across all rack levels. The 4 m/s blower speed and zig-zag rack design produced the highest drying efficiency (9.21%), suggesting that this combination is the most effective in harvesting solar energy for a uniform and efficient drying process.

Keywords: air velocity; configuration; rack-type; solar dryer; heat storage

Prevalence of Staphylococcus Aureus Carriage by Healthy Children Under 12 Years of Age in The Batur Dieng Plateau, Banjarnegara Regency

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Abstract

Staphylococcus aureus (*S. aureus*) is a normal bacterial flora found on human skin and nose, particularly in the anterior and posterior nasal cavities. *S. aureus* colonization is more common in children than in adults, with colonization rates varying with age. *S. aureus* can cause various important infections, including Methicillin-Resistant *Staphylococcus aureus* (MRSA), caused by the presence of the *mecA* gene. MRSA poses a serious health threat due to its resistance to various β -lactam antibiotics, increasing the risk of complications, treatment costs, and mortality. The incidence of MRSA in Indonesia is estimated to reach 28%. Surveillance of MRSA in children is crucial to address the increasing emergency of antibiotic resistance in Indonesia. The purpose of this study was to determine the presence of *S. aureus* bacteria using duplex PCR in children under 12 years of age in the Dieng Plateau, Batur District, Banjarnegara, and to analyze the prevalence of *S. aureus*. This is a descriptive cross-sectional study. Sampling was conducted using a purposive sampling method, collecting nasopharyngeal swabs (NP Swabs) from healthy children under 5 years of age with informed consent and medical records of the subjects. The results of this study, including the isolation and characterization of *S. aureus* bacteria on blood agar, and the Optochin test, revealed 20 isolates of *S. aureus* bacteria from 100 samples. Data analysis was conducted descriptively to determine the prevalence of *S. aureus* bacteria in healthy children aged <12 years in the Dieng Plateau, Batur District, Banjarnegara Regency. The study concluded that the prevalence of *S. aureus* bacteria was 20% (20/100).

Keywords: Dieng plateau, healthy children aged <12 years, optochin test, prevalence, *Staphylococcus aureus*

Non-Destructive Estimation of Vitamin C and Total Soluble Solids in Mango Using a Triad Spectroscopy Sensor-Based UV-VIS-IR Portable Spectrometer

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Abstract

The measurement of physicochemical parameters of fruits is often destructive, time-consuming, costly, and generates sample waste. Therefore, the development of non-destructive analytical technologies has become an urgent necessity. UV-Vis-IR spectroscopy has been widely applied for non-destructive analysis due to its capability to detect optical properties that are strongly correlated with physicochemical parameters. However, conventional spectrometers still face several challenges, including high cost, bulky dimensions, and limited integration for automated analysis. With the advancement of triad spectroscopy sensors, it is now possible to design portable spectrometers that are more efficient and affordable. Furthermore, the integration of machine learning algorithms in spectral data analysis enables accurate prediction of fruit physicochemical characteristics. This study aims to develop a portable spectrometer equipped with the AS7265X sensor capable of capturing UV-Vis-IR light reflectance to non-destructively predict vitamin C content and total soluble solids (TSS) in mangoes. The results indicate that using an artificial neural network (ANN), vitamin C and TSS content in mangoes can be estimated based on the UV-Vis-IR spectral response captured by the AS7265X sensor, achieving mean square error (MSE) values of 0.001918 and 0.636494 for vitamin C and TSS, respectively.

Keywords: artificial neural network, AS7265X sensor, machine learning, physicochemical parameters, spectral response

Mapping of Banyumas Banana Toward The Designation of Banyumas Elite Banana Cultivar

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Abstract

A study has been carried out to identify the potential of the Banyumas elit banana toward the designation of Banyumas elit banana. The survey has been conducted in all 27 sub-districts in Banyumas Regency. The survey data revealed that ten cultivars (Ambon, Ambon Lumut/Ambon Rayun, Ambon Nangka, Cavendish, Emas, Gebyar, Kepok Kuning Lempeneng, Raja, Susu) have been identified as potential elite banana cultivars. Furthermore, five disease groups were found in almost all sub-districts in Banyumas, except for the Purwokerto Utara sub-district. The incidences of abiotic factor-related disease reached 3.7%, blood disease 37.4%, bunchy top virus 51.85%, and *Fusarium* wilt was the most commonly observed disease and accounted for 59.26%. Sigatoka leaf spot, or Sigatoka disease, accounted for 3.7%. These disease incidences showed that the intensity, incidence, and distribution of bunchy top virus and *Fusarium* wilt in Banyumas are relatively high. In addition, cluster analysis revealed that Purwokerto Utara and Rawalo ($r = 0.839$) have been identified as potential areas for the cultivation of Banyumas elite banana, especially Cavendish and Raja cultivars, which have high productivity, demand, and disease resistance.

Keywords: Banana, Banyumas, Disease, *Fusarium*, Sigatoka

The Relationship Between Soil Plasticity and Clay Minerals of Volcanic Rocks Weathering in Cimanggung, Indonesia

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Abstract

This study examines the weathering process of volcanic rocks and their effects on soil properties in Cimanggung, Sumedang Regency, West Java, Indonesia. The study area is characterized by extensive volcanic rock formations that have undergone varying degrees of weathering under tropical climatic conditions. X-ray diffraction (XRD) analysis was used to identify and characterize clay minerals resulting from the weathering of parent volcanic materials. Mineralogical investigations revealed the formation of secondary clay minerals, which are typical products of volcanic rock weathering in tropical environments. In addition, comprehensive geotechnical testing was conducted to evaluate changes in the physical and mechanical properties of the weathered soil. The results showed significant variations in plasticity index parameters with clay minerals such as kaolinite and halloysite as the process progressed. These findings provide valuable insights into the relationship between clay mineral formation and plasticity properties of volcanically weathered soils. This study contributes to a better understanding of slope stability and landslide potential.

Keywords: Cimanggung, volcanic rock, XRD, clay mineral, landslide

Air Temperature Distribution in Aeroponic and NFT System with Root Zone Cooling Application for Potato Seed Production in Tropical Lowlands

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Abstract

Potato is one of the main and leading commodities in the potato production centers of Central Java. Potato requires cool temperatures for optimal growth; therefore, its cultivation is generally concentrated in highland areas (above 700 m a.s.l.). Productivity constraints caused by several issues, such as fluctuations in seed availability, unsuitable soil conditions, and the reduction of harvested area, require the development of applied technological innovations to overcome them. Hydroponic systems (aeroponics and nutrient film technique/NFT) with root zone cooling are considered potential alternatives for expanding potato seed production beyond the highlands, particularly into lowland areas with warmer climates. This study aims to obtain information on air temperature distribution within aeroponic and NFT growing chambers under root zone cooling treatment and without cooling in tropical lowlands. The aeroponic installation used was 1 m × 1 m in size, constructed from wood with styrofoam insulation. The results indicate that the aeroponic system with root zone cooling can maintain root zone temperatures stable according to the applied setting, compared to the NFT system, while in treatments without cooling, the temperature increased following environmental conditions.

Keywords: aeroponic, greenhouse, hydroponics, lowlands, emperature control

Physicochemical Characteristics of Low-Fat, Fiber-Rich Synbiotic Yogurt

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Abstract

Synbiotic yogurt is a type of functional drink that combines probiotic bacteria as a starter with prebiotics. This study was conducted to study the characteristics of synbiotic yogurt produced from low-fat milk with *Moringa oleifera* as a source of fiber. The study began with testing raw materials, namely full-fat milk, low-fat milk, and phytochemical tests of *Moringa oleifera*. The main treatment of the study was a combination of probiotic yogurt with low-fat raw materials with *Moringa oleifera*, as a control was full-fat yogurt and low-fat yogurt without the addition of *Moringa oleifera*. The results showed that the chemical characteristics, namely Total titratable acid (TAT); pH; water content; total solids and cholesterol levels were affected by the addition of *Moringa oleifera* and were significantly different ($P < 0.05$); physical characteristics, namely: viscosity; water holding capacity and syneresis were significantly affected ($P < 0.05$). The color characteristics tested were L^* ; a^* ; b^* ; WI^* , Croma and Hue were significantly different ($P < 0.05$). The conclusion of the study is that the addition of *Moringa oleifera* at a level of 0.1 - 0.2% affects physical quality, reduces cholesterol at an addition of 0.1%, produces relatively the same levels of antioxidants, crude fiber and flavonoids

Keywords: *Moringa oleifera*, Physicochemistry, Synbiotic yogurt

Bamboo Leaf Extract as a Natural Feed Additive to Enhance Nutrient Digestibility in Heat-Stressed Broilers

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Abstract

Heat stress is one of the major environmental factors that can negatively affect broiler performance by reducing feed intake and nutrient utilization efficiency. A potential approach to alleviate these effects is through dietary supplementation with natural materials containing bioactive compounds. Bamboo leaves are known to contain secondary metabolites with antioxidant properties that may support physiological functions and digestive performance in poultry. This study aimed to evaluate the effects of bamboo leaf extract supplementation on feed intake and the digestibility of dry matter and organic matter in broilers under heat stress conditions. A total of 200 broilers were used in a completely randomized design consisting of four treatments and five replications. The treatments included: P0 (negative control with basal diet), P1 (commercial diet), P2 (basal diet + 1.5 g/kg bamboo leaf extract), and P3 (basal diet + 3 g/kg bamboo leaf extract). Heat stress was induced by increasing the rearing temperature by 1–3°C above the normal range. This study is expected to provide insights into the potential role of bamboo leaf extract in supporting broiler performance under environmental stress conditions.

Keywords: broiler, heat stress, bamboo leaf extract, performance

The Ability of PGPR Isolates From Iron Sand Soil to Produce Exopolysaccharides in ATCC No. 14 Medium With Different Carbon Sources

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Abstract

Coastal land is marginal land with limited fertility, high salinity, and heavy metal accumulation, which reduces agricultural productivity. One solution is the use of Plant Growth-Promoting Rhizobacteria (PGPR), which can produce exopolysaccharides (EPS) to improve plant resistance and soil aggregate stability. This study aims to determine the ability of PGPR isolates from iron sand soil to produce EPS in ATCC medium no. 14, identify the optimal carbon source, and determine the peak EPS production time. The study was conducted using survey methods, including carbohydrate utilization tests, semi-quantitative EPS tests, pH measurements, and EPS production curves, as well as experimental methods using a Completely Randomized Design (CRD) with six treatments: a control without carbon and five types of carbon sources (glucose, sucrose, fructose, lactose, mannitol) at a 2% concentration, each with three replicates. Data were analyzed descriptively and using ANOVA followed by the BNJ test. The results showed that 16 PGPR isolates had the potential to produce EPS, with isolate PT4C5 selected as the highest slime index producer. The crude EPS production test indicated sucrose as the optimal carbon source with an EPS concentration of 12.89 mg/L. EPS production by isolate PT4C5 on ATCC medium no. 14 with 2% sucrose reached a peak at 36 hours of incubation at 23.11 mg/L. These findings confirm that isolate type, carbon source, and fermentation time are important factors in optimizing EPS production by PGPR to support coastal agriculture.

Keywords: Carbon source, exopolysaccharides, iron sand, PGPR

The Ability of Iron Sand Soil Bacterial Isolates to Produce Polyhydroxybutyrate (PHB) With Different Carbon Sources

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Abstract

Poly- β -hydroxybutyrate (PHB) synthesized by bacteria under environmental stress conditions with excess carbon sources and limited other nutrients can be used as an alternative to synthetic plastics. PHB-producing bacteria can be isolated from extreme environments such as iron sand soil, which has low organic matter content and high temperature. The aim of this research is to determine the ability of bacterial isolates from iron sand soil to produce PHB, to determine the best bacterial isolates from iron sand soil capable of accumulating the highest amount of PHB, and to determine the best type of carbon source for selected bacterial isolates to accumulate the highest amount of PHB. This research was conducted with survey and experimental methods using a complete randomized design (CRD). Survey data were analyzed descriptively and experimental data were analyzed using analysis of variance (ANOVA) with a confidence level of 95%, followed by the Duncan's Multiple Range Test (DMRT). The results showed that three bacterial isolates, viz. isolates PS2Y2, PS2P1, and CS2C8, were capable of producing PHB, with the highest PHB accumulation produced by isolate PS2Y2 measuring $11.633 \pm 3.267\%$ of CDW. PHB accumulation in isolate PS2Y2 using different carbon sources showed the highest accumulation when glucose was used as the carbon source, measuring to $8.956 \pm 1.520\%$ of CDW.

Keywords: bacteria from iron sand soil, carbon source, poly- β -hydroxybutyrate

Dual Filtration System: Integration of Physical–Chemical and Fungal-Based Biological Filters for Textile and Batik Wastewater Treatment

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Abstract

Textile and batik wastewater containing synthetic dyes such as brown Naphtol red, green Indigosol, and blue Procion poses serious environmental challenges due to its toxicity and persistence in aquatic ecosystems. Conventional treatment using a physical–chemical method, has demonstrated considerable decolorization efficiency, but the effluent remained cloudy because fine particles and dissolved dye residues were not fully removed. In addition, previous studies have highlighted the promising role of fungi in dye degradation, particularly *Aspergillus sp.3*, which has shown strong potential in decolorizing synthetic dyes. This study aimed to develop and evaluate a dual filtration system by integrating physical–chemical filtration (cotton fiber, activated carbon, zeolite, sand, gravel) with fungal-based biological treatment using *Aspergillus sp.3* in Potato Dextrose Broth (PDB) medium. The experimental method involved treating textile wastewater containing three representative dyes—Naphtol red-brown, Indigosol green, and Procion blue, using physical–chemical filtration alone and combined physical–chemical filtration with *Aspergillus sp.3*-based biological filtration. The percentage of decolorization was measured spectrophotometrically to assess treatment performance. The results showed a significant improvement in decolorization with the dual filtration system. While physical–chemical filtration alone achieved 98.18% (Naphtol red-brown), 78.09% (Indigosol green), and 66.11% (Procion blue), the integrated system with *Aspergillus sp.3* increased decolorization to 99.70%, 99.46%, and 97.73%, respectively. These findings demonstrate that the integration of physical–chemical and fungal-based biological filters, with *Aspergillus sp.3* as the biodegradation agent, provides a more effective solution than physical–chemical filtration alone, producing clearer effluent with near-complete dye removal. This dual system has strong potential as a sustainable technology for treating textile and batik industrial wastewater.

Keywords: textile wastewater, batik effluent, *Aspergillus sp.3*, fungal biodegradation, dual filtration system

Identification and Genetic Characterization of *Barbonymus* from Serayu River Basin, Indonesia, based on Mitochondrial Cytochrome c Oxidase Subunit I (COI) Gene

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Abstract

Accurate identification of freshwater fishes is crucial for biodiversity monitoring and fisheries management, yet traditional morphology-based approaches are often unreliable in taxa with overlapping traits such as *Barbonymus*. This study applied DNA barcoding using the mitochondrial cytochrome c oxidase subunit I (COI) gene to identify a *Barbonymus* specimen collected from the Serayu River Basin, Central Java, Indonesia. A 637 bp COI fragment of high quality and purity was successfully amplified and sequenced. BLAST and Barcode of Life Data System (BOLD) searches revealed a 100% query coverage and 92.32% sequence identity with *Barbonymus balleroides*, representing the highest similarity among reference sequences. Phylogenetic analysis corroborated this finding by grouping sample P within the *B. balleroides* clade with strong support. These results provide molecular confirmation of the specimen as *B. balleroides* and highlight the effectiveness of COI barcoding for resolving taxonomic challenges within cyprinid fishes. Establishing this genetic reference contributes to the accurate documentation of fish biodiversity in the Serayu River Basin and offers a foundation for future ecological and conservation studies.

Keywords: DNA Barcoding; Cyprinidae; Phylogenetic; Conservation; Serayu River

Effect of natural ferrite on microwave reflection loss and magnetic properties of coconut shell-based activated carbon

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Abstract

This report comprehensively analyzes the effect of natural ferrite on microwave reflection loss and magnetic properties of coconut shell-based activated carbon at different concentrations (10, 20, and 30 wt%), denoted as ACFE-10, ACFE-20, and ACFE-30. Vector Network Analyzer (VNA) characterization reveals that ferrite incorporation enhances the microwave absorption performance, with ACFE-10 exhibiting the most significant Reflection Loss (R_L) peak in the gigahertz frequency range. Magnetic hysteresis loops obtained from Permagraph measurements classify the composites as soft magnetic materials with low coercivity. At the same time, the progressive increase in saturation magnetization with higher ferrite content contributes to more substantial magnetic loss. The superior absorption behavior at optimized ferrite loading is attributed to the synergistic effect of dielectric loss from the activated carbon matrix and magnetic loss induced by the ferrite phase. The magnetic loss mechanism is dominated by natural ferromagnetic resonance, which is highly sensitive to the intrinsic magnetic properties of the material. Improved impedance matching at resonance frequencies facilitates efficient penetration of incident waves with minimal reflection, resulting in enhanced energy absorption. These findings emphasize the importance of balancing dielectric and magnetic contributions to design sustainable and cost-effective coconut shell-based activated carbon/natural ferrite composites for high-performance radar absorbing applications.

Keywords: Reflection loss, Activated carbon, Ferrite, Magnetic properties, Radar absorber

The Climate Maritime In The Coastal of South Cilacap

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Abstract

This study examines the characteristics of maritime climatology in the southern coastal waters of Cilacap by analyzing the monthly average patterns of key oceanographic parameters over a five-year period, from 2019 to 2023. The parameters analyzed include maximum wave height (Hmax), sea surface temperature (SST), and sea surface salinity. The results of the analysis show clear seasonal patterns in all three parameters. The monthly average maximum wave height fluctuates between 1,25 meters and 4 meters, with the highest peak occurring in July (1,5 to 4 meters) and the lowest in March (1,25 to 2,5 meters). Sea surface temperature ranged from 24°C to 30,5°C, with the highest temperatures recorded in April (29,5°C to 30,5°C) and the lowest in September (24°C to 26°C). Meanwhile, sea surface salinity varies from below 30 PSU to 34 PSU, reaching its maximum value in September (33 PSU to 34 PSU) and its minimum in March (generally below 30 PSU). Collectively, these patterns indicate the strong influence of the monsoon system, with the Southeast Monsoon tending to be associated with high waves, low temperatures, and high salinity due to upwelling, while the Northwest Monsoon shows the opposite conditions.

Keywords: climatology, marine, maritime

Chemometric Analysis of the Chemical Profile of Raw and Ripe Noni Fruit (*MORINDA CITRIFOLIA* L.) Juice and its Effect on Lymphocyte Proliferation

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Abstract

Noni (*Morinda citrifolia* L.) is known to have potential as an immunomodulator, but the differences in biological activity between raw and ripe fruit juice have not been widely explored. The objective of this study is to assess the effects of ripe (MG) and raw (MH) noni fruit juice on lymphocyte proliferation and utilize chemometric analysis to examine its chemical profile. MTT assay for lymphocyte proliferation from lymphocyte cells isolated from the spleen of Balb/C mice treated with noni fruit juice at 25, 50, 100, 200, and 400 µg/mL. (LCMS) was utilized to investigate the compound characterisation of ripe fruit juice and noni. Compound characterization of noni fruit juice and ripe fruit was analyzed using Liquid Chromatography-Mass Spectrometry (LC-MS). Chemometric analysis was performed using PCA, PLSDA, and HCA methods. The results showed that at a concentration of 25 µg/mL, MH and MG were both able to enhance proliferative activity with cell viability of 119.78% and 117.90%, respectively. Comparable stimulatory effects were shown by the ensuing lymphocyte stimulation index, which was 1.795 in MH and 1.767 in MG. The MH and MG groups were clearly distinguished by chemometric analysis. MH samples displayed more variance in chemical profiles, suggesting a varied metabolite composition, whereas MG samples demonstrated greater homogeneity with comparable chemical profiles across repetitions (MG1, MG2, MG3). These findings suggest that both raw and ripe noni juice may have immunomodulatory and lymphocyte-stimulating properties, while the consistency of its biological activity may be impacted by variations in the chemical profiles of the various ripeness stages.

Keywords: *Morinda citrifolia*, immunomodulator, lymphocyte cell, chemometric, proliferation

The Forages Potential for Small Ruminant Feed on the Slopes of Mount Slamet in Banyumas Regency

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Abstract

The efforts to explore potential local feed sources, as the main support for the availability of forage for the development of small ruminant livestock in the Banyumas Regency, particularly in the Mount Slamet slopes area, need to be carried out as one of the strategies in achieving feed self-sufficiency. The objective of this study was to record the potential diversity of local forage sources that can be provided to ruminants in the Mount Slamet Slopes area of Banyumas Regency. The research method used was an exploratory descriptive survey of local forage available in the forests of the slopes of Mount Slamet, which include the Baturraden and Sumbang subdistricts of Banyumas Regency, at three different altitude zones (625-725, 725-825, and 825-925 meters above sea level). The results showed that there was a high diversity of forage plants (25 types) on the slopes of Mount Slamet in the Banyumas region. The three altitude zones were dominated by the following types of forage plants, in descending order: Wedelia (Wedelia sp), Pacing (Costus sp), and Pakis (Selaginella sp).

Keywords: Forages, local feed, Small ruminant, slopes area

Quality of Postmortem Source of Komet (*Cyprinus carpio*) Sperm before and After Storage for few Days in Fish Ringer Medium containing 1,5% Glycerine With or Without Honey

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Abstract

This modelling for ornamental freshwater endanger fish found dead study, to further assess gamete quality from postmortem sources, which has been reported earlier having good. This study aims to assess the quality of the male gamet from one and four hours (H) post mortem (PM) source in preservation medium fish Ringer contain 1,5 % Glycerine (G) with or without 1,5 % commercial honey before and after storafe for few days at refrigerator (2-8⁰ C temperature). Two sperm source were assed (1) striping of postmortem or cadaver male and (2) mince PM testis. Assessment by in vitro fertilization (IVF) with eggs from fresh stripping live females. As controls were IVF from same eggs with fresh striping milt from alive male.

Results of hatching rate from all treatments of the PM sperm showed declined sharply with the highest was 50%, as compare to the control was 100%, however statistically the averages of hatching rate data had no significant different ($P>0,05$) among them. Meaning that number of replication (6 & 7) given varied results. Comparation results before and after storage for 1 or 4 days at refrigerator showed that treatments with honey resulted in lower hatching rate as compare to glycerine only, except for treatment of testis sperm source after 4 days storage in honey give $42,8\pm53.4$ compare to 50 ± 50 without honey. All larvae were survived up to juvenile. One application of this study is model for fresh water endanger species (ornamental) fish, if found already dead, their gamete valuable to be rescued from the PM testis as well as striping to get offspring.

Keywords: postmortem; striping sperm; testis sperm; hatching; juvenile

Formulation of Liquid Carrier Media Based on Natural Ingredients for Hydrolytic and Nitrifying Bacterial Consortium of Organic Waste Bioremediation Agent

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Abstract

Natural materials such as molasses, coconut water, and banana stems are known to be used as growth media that are able to maintain the viability of bacterial inoculum. The study aimed to obtain a liquid carrier media formulation with a composition of natural materials for the growth and viability of hydrolytic and nitrifying bacterial consortiums of organic waste bioremediation agents. The bacterial consortium used consisted of 5 hydrolytic bacterial isolates and 4 nitrifying bacterial isolates showing negative properties against sensitivity and hemolysis tests. The growth of the five hydrolytic bacterial isolates in growth media M1, M2, M3, M4, and M5 during the 30-day incubation period ranged between 1.03×10^9 – 5.5×10^9 CFU/mL, while the growth of the four nitrifying bacterial isolates in the five types of growth media ranged between 4.62×10^7 – 2.91×10^9 CFU/mL. The growth media M2, M1, and M3 resulted an average total population of bacterial isolates of 2.53×10^9 , 2.41×10^9 , and 2.29×10^9 CFU/mL, respectively. Composition of medium M1 (g/L) consisted of brown sugar 30, molasses 30, cornstarch 60, agar 2, and fish meal 10; medium M2 (g/L) consisted of brown sugar 30, molasses 30, bean sprouts 30, banana stem 60, bean sprouts 30, coconut water 100 mL, cornstarch 60, and fish meal 10; medium M3 (g/L): medium M2 (g/L) consisted of brown sugar 30, molasses 30, bean sprouts 30, banana stem 60, coconut water 25 mL, cornstarch 60, and fish meal 10.

Keywords: Banana stems, broth carrier media, coconut water, hydrolytic bacteria, nitrifying bacteria

Morphological and Histological Evaluation of the Placenta of Gravid Mice Treated with Bitter Melon Leaf Extract

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Abstract

Bitter melon leaf has been known as a traditional remedy for treating menstrual disorders. This research was conducted to evaluate the effect of the ethanolic extract of bitter melon leaf on the placental structure of gravid mice. The bitter melon extract at the concentrations of 0, 250, 500, and 750 mg.kg⁻¹ was given orally every 2 days starting from the vaginal plug detection up to day 12th dpc. The gravid mice were euthanized humanely on day 14th dpc, and the placental structure was observed. The placentas were dissected, measured, and weighted, and then processed for histological evaluation. The results showed that the placental diameter of mice treated with 0, 250, 500, and 750 mg.kg⁻¹ bitter melon extract was 8.92±1.14mm, 8.31±0.59mm, 8.31±0.11mm, and 8.25±0.17mm; placental weight was 212.58±63.59mg, 129.23±13.58mg, 154.06±5.04mg, and 153.46±23.46mg, respectively. There is no significant difference in placental size among the treated group ($p>0.5$). Histological examination showed that the bitter melon leaf extract affected the placental vasculature, labyrinth, and trophoblastic cells, but did not affect the decidual structure. These results indicated that bitter melon extract reduced the placental quality, which could risk the pregnancy outcome.

Keywords: abortifacient, *Momordica charantia*, *Mus musculus*, pregnancy, vasculogenesis

Genetic Structure and Phylogeny of Culicinae and Anophelinae Captured from Several Areas in Central Java

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Abstract

Mosquitoes belong to the order Diptera, divided into two subfamilies: Anophelinae, with the genus *Anopheles*, and Culicinae, with the genera *Culex*, *Armigerus*, *Manzonia*, and *Aedes*. Not all mosquitoes are native to Indonesia, but each species has spread throughout the world, and its presence has become a problem for human health. The invasion of these species poses a risk to human health. The invasion of this species poses a risk to human health. In addition to the nuisance caused by its biting activity, it also acts as a vector for various diseases. The accumulated empirical knowledge of population dynamics and gene flow can be used to anticipate risks (e.g., modeling distribution and epidemiological implications) and develop control strategies. Although mosquito populations with different genetic makeup may differ in their vector competence, there is currently no information regarding the population genetics of *Aedes* sp. This study aimed to study the genetic structure of mosquitoes in Central Java and their phylogeny. The study was conducted with a work sequence that included: sample collection, DNA extraction, purification, amplification in a PCR machine, sequencing, and DNA phylogeny preparation. The phylogenetic network was estimated using Neighbor Joining and Maximum Parsimony, as well as Maximum Likelihood. Then, the phylogenetic tree was built in Molecular Evolutionary Genetic Analysis (MEGA X) software with 1000 bootstrap replications to ensure consistency of the ancestry. The results showed that three mosquito genera were found in the three regions, namely *Lutzia* sp. mosquitoes from Banjarnegara, *Culex* sp. from Purwokerto, and *Aedes* sp. from Banjarnegara. The results of the similarity analysis showed that 99% of *Lutzia* sp mosquitoes were related to *Lutzia fuscata*, *Culex* sp showed 99% similarity to *Culex pipiens*, and *Aedes* sp showed 100% similarity to *Aedes aegypti*. The phylogeny results showed that there were two clades: the first, which included *Aedes aegypti*, was similar to *Lutzia fuscata*, and the second clade, *Culex pipiens*, was a separate species from the first.

Keywords: Anophelinae, Culicinae, PCR, Phylogeny, sequencing, vector

Texture Modification of Goat Meat Sausages Using Enzymes

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Abstract

Enzymatic modification plays a crucial role in enhancing the textural properties of goat meat sausages, primarily by influencing protein structure, thereby improving attributes such as tenderness, juiciness, and chewiness. This can be achieved through the application of various enzyme types, each operating via distinct mechanisms. Proteolytic enzymes, or proteases, are extensively utilized to tenderize meat through the degradation of muscle proteins (myofibrillar proteins, including myosin and actin) and connective tissues (collagen). For goat meat, which often exhibits a tougher consistency compared to other meats, this application proves particularly advantageous. *Moringa oleifera* plants, specifically their leaves and seeds, are having significant attention within the food industry due to their enzymatic content, which can be harnessed for the textural modification of meat and sausages. While papain and bromelain are well-established, moringa enzymes are emerging as a promising, natural alternative. Transglutaminase (TG) produced by specific microbes, commonly referred to as "meat glue," operates distinctly from proteases. Instead of protein degradation, it facilitates the formation of novel, robust covalent bonds between protein molecules. This process, termed protein cross-linking, profoundly influences the sausage's texture. The synergistic application of proteolytic enzymes (proteases) and transglutaminase (TG) constitutes a sophisticated and effective methodology for modifying the texture of meat products, such as goat meat sausages. Their combined utilization yields a dual effect that addresses diverse textural challenges. Initially, the protease "prepares" the meat by subtly softening it and exposing a greater number of binding sites on the proteins. Subsequently, transglutaminase "reconstructs" the protein matrix, thereby establishing a new, optimized structure characterized by both tenderness and firmness.

Keywords: goat meat, tender meat, sustainable food products, enzymes

Managing Shallot Bacterial Leaf Blight with Rhizosphere Bacteria Applications and Different Planting Patterns

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Abstract

Bacterial leaf blight (BLB) disease on shallot caused by *Xanthomonas axonopodis* pv. *allii*. This disease could yield losses by 70%. Utilization of rhizosphere bacteria is an innovation in the management of BLB disease in shallots with monoculture and intercropping planting patterns. The aim of this research: 1) to evaluate the formula of single and consortium shallot rhizosphere bacteria as a control for BLB disease in different planting patterns; 2) to evaluate the potential of single and consortium shallot rhizosphere bacteria as producers of plant growth components and plant growth promoters. Experimental research method arranged by Factorial Randomize Completely Block Design with two factor (monoculture and intercropping as factor 1 and six treatment rhizosphere bacteria as second factor (K: control, P1: rhizosphere bacteria Bm1, P2: rhizosphere bacteria Bm2, P3: rhizosphere bacteria Bm3, P4: rhizosphere bacteria Bm4, P5: rhizosphere bacteria consortium include Bm1, Bm2, Bm3 and Bm4). The variable observed incubation period, disease intensity, effectiveness of control, IAA, gibberellin, siderophore, and plant height, number of leaf, and bulb. The results of the study showed that intercropping and rhizosphere bacterial consortium treatment were the best treatment in controlling shallot BLB disease with an effectiveness of 66.67%. Shallot rhizosphere bacteria are able to produce IAA, gibberellin, and siderophores, either singly or in consortia. The best plant growth is intercropping pattern showed by plant height, the number of leaves and bulb up to 10%. Rhizosphere bacteria in shallot, both singly and in consortia, have the potential to be developed as an environmentally friendly biopesticide formula.

Keywords: Effectiveness, intercropping, shallot disease, rhizosphere bacteria

Formulation of Dispersible Tablets Based on *Bacillus velezensis* as a Candidate for Control of Rice Bacterial Leaf Blight

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Abstract

Rice is one of the most important food crops in Indonesia. Rice production faces challenges such as bacterial leaf blight (BLB) caused by *Xanthomonas oryzae* pv. *oryzae*. BLB causes yield loss and increased costs for disease management. The objective of this study was to develop a dispersible tablet formulation based on *Bacillus velezensis* as a candidate for controlling bacterial leaf blight in rice. The dispersible tablets were prepared with the following compositions: P1: 100% Explotab + *B. velezensis*; P2: a mixture of 80% Explotab + 20% Avicel + *B. velezensis*; P3: a mixture of 60% Explotab + 40% Avicel + *B. velezensis*; P4: a mixture of 40% Explotab + 60% Avicel + *B. velezensis*; P5: a mixture of 20% Explotab + 80% Avicel + *B. velezensis*; P6: 100% Avicel + *B. velezensis*. The variables observed were size uniformity and weight uniformity. The results showed that the dispersible tablet formulation had uniform size and weight.

Keywords: Bacillus, dispersible, formulation, rice, tablet

Effect of Microwave-Assisted Extraction Time on the Color And Anti-Yeast Activity of Annatto Extracts Following Maceration

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Abstract

Annatto is a natural pigment with known antimicrobial properties. This study investigates the color characteristics and anti-yeast activity of annatto extracts produced via maceration followed by microwave-assisted extraction (MAE) at varying MAE times. Maceration was performed at 70°C for 5 minutes. The subsequent MAE was performed at a power of 100 W for 1 to 5 minutes, with 0.5-minute intervals. The anti-yeast activity was evaluated against *Candida albicans*. Color was measured using a colorimeter to determine L (lightness), a* (redness), and b* (yellowness). Anti-yeast activity was assessed by measuring the clear zone, the minimum inhibitory concentration (MIC), and the total cell count. The results show that increasing the MAE duration led to a higher level of redness but a decrease in both lightness and yellowness. A 2-minute MAE duration was found to be optimal, yielding an extract with an L value of 36.42, an a* value of 16.28, and a b* value of 13.58. The highest clear zone diameter was 6.05 mm (classified as moderate inhibition). The MIC was achieved at a concentration of 5%, with a ΔOD value of 0.114 and a colony count of 7.141 log CFU/mL.

Keywords: annatto; Anti-yeast activity, color characteristics, extraction time; microwave-assisted extraction (MAE)

The Effect of Temperature and Fermentation Period on Physicochemical Characteristics of Coconut Aminos

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Abstract

Coconut aminos is a salty soy sauce product made through the fermentation process of coconut sap. This product provides an alternative to soy sauce for some consumers who have difficulty consuming soy sauce due to allergies to soy protein. In coconut aminos fermentation, temperature and fermentation period are very important factors. In this study, the effect of temperature and fermentation period on the physicochemical characteristics of coconut aminos was investigated. This study used a Randomized Block Design with two treatments were fermentation temperatures of 30°C, 40°C, 50°C, and fermentation periods of 15, 30, and 45 days. Physicochemical parameters of the coconut aminos product were observed. The results showed that the fermentation temperature increased the pH value and total soluble solids, but decreased the moisture content of coconut aminos. A fermentation temperature of 50°C produced better physicochemical characteristics of coconut aminos than fermentation temperatures of 30°C and 40°C. The fermentation period increased the levels of reducing sugars and total sugars, but decreased the pH value of coconut aminos. A 15-day fermentation period produced better physicochemical characteristics for coconut aminos than those with 30 and 45 days. A 50°C fermentation temperature and 15-day fermentation period produced coconut aminos with better physicochemical characteristics than those with 30 and 40°C fermentation temperatures and 30-day and 45-day fermentation periods.

Keywords: coconut aminos, coconut sap, salty soy sauce, sap fermentation

Application of Biochar Plus on of Physiological and Yield Characters of Sweet Potato

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Abstract

Objective of this study was to know effect of biochar plus application on physiological and yield characteristics of sweet potato. The study was carried out at Bobosan village, Purwokerto, in June – September 2025. The treatments of biochar plus viz. biochar, biochar+organic liquid fertilizer, biochar+azzola and sweet potato types viz. yellow, purple and white were tested. The randomized complete block design was applied with three replications. Variables of stomatal density, total chlorophyll content, sweet level (brix) as physiological characters and number and weight of tuber, length and diameter of tuber, harvest index as yield characters were observed. Physiological characters among types of sweet potato and application of biochar plus had equal results. Application of biochar plus had not improved yield of all types of sweet potato yet even with vary length and diameter of tuber.

Keywords: sweet potato, biochar, organic liquid fertilizer, azzola, physiological and yield

The Effect of Nanoemulsion Biopesticide from Zingiber Purpureum Extract and Patchouli Oil Distillation Waste on Bacterial Leaf Blight and Rice Production

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Abstract

Bacterial leaf blight (BLB) is a major disease that affects rice crops, caused by the bacterium *Xanthomonas oryzae* pv. *oryzae* (Xoo). This study focuses on the use of a nanoemulsion biopesticide for disease control, aiming to reduce the reliance on synthetic pesticides. The research investigates the effects of nanoemulsion biopesticides derived from *Zingiber purpureum* extract and patchouli oil distillation waste on controlling BLB in rice, as well as their impact on rice production. The research findings showed that the application of nanoemulsion biopesticide could decrease disease intensity, and it could also reduce the disease infection rate. Although the treatment did not significantly affect vegetative growth, nanoemulsion biopesticides at concentrations above 1000 ppm enhanced the production by increasing the number of grains and the weight of 100 grains compared to the control. This study illustrates that nanoemulsion biopesticides from *Z. purpureum* extract and patchouli oil distillation waste can provide an eco-friendly solution for managing bacterial leaf blight while simultaneously enhancing rice productivity.

Keywords: Bacterial Leaf Blight, Biopesticide, Nanoemulsion, Rice

Synthesis of Silver Nanoparticles Using Bandotan Leaf Extract (*Ageratum conyzoides* L.) and Antibacterial Activity Testing

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Abstract

Silver nanoparticles were synthesized using the reduction method with methanol extract of bandotan leaves (*Ageratum conyzoides* L.) as a reducing agent. This study aimed to determine the effect of varying AgNO_3 solution concentrations on nanoparticle formation, the effect of adding Polyvinyl alcohol (PVA) on nanoparticle formation, the characteristics of silver nanoparticles, the antibacterial activity against *Staphylococcus aureus*, and the formulation and characteristics of an antibacterial ointment. The results showed that bandotan leaf extract had the highest antibacterial activity in the methanol extract, with an inhibition zone of 3.21 mm. Phytochemical screening of the methanol extract of bandotan leaves indicated the presence of secondary metabolites such as flavonoids, alkaloids, saponins, tannins, and steroids. Based on the results of the analysis of silver nanoparticles with or without the addition of PVA using a UV-Vis spectrophotometer, the maximum wavelength absorption characteristic of silver nanoparticle formation is at a wavelength of 457-458 nm. Functional group analysis using FTIR showed a shift in the O-H, C=C, and C=O groups in the methanol extract and silver nanoparticles with or without the addition of PVA. PSA analysis showed that the silver nanoparticles and silver nanoparticles with the addition of PVA formed had average diameters of 70.7 and 70.4 nm, respectively. SEM EDX analysis results showed that the morphology of the silver nanoparticles had non-uniform shapes and sizes.

Keywords: antibacterial, bandotan leaves, silver nanoparticles, PSA, SEM EDX

Physiological Aspects Of Vegetative Growth Of Melon (*Cucumis melo* L.) On Various Air Salinity And Foliar Flushing Volume In Coastal Sandy Soil

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Abstract

Melon (*Cucumis melo* L.) has good economic prospects in Indonesia but is still faced with low production continuity due to productivity in coastal areas related to the specific agro-climate of strong and air born salinity winds in certain seasons. This study aims to explain the physiological aspects of vegetative growth of melon plants at various air salinities, flushing volumes, and the interaction between air salinity and leaf flushing volume. The study was conducted using a Split Plot Design with air salinity as the main plot consisting of 0, 12, and 24 mS/cm and flushing volumes as subplots consisting of 0, 3.5, and 7 mm. The results showed that 0 mS/cm salinity produced the highest vegetative chlorophyll content (16.91 mg/L). The 7 mm flushing volume produced the highest number of leaves (11.5 leaves), fresh plant weight (70 g), and vegetative chlorophyll content (16.97 mg/L). An air salinity of 0 mS/cm and a flushing volume of 7 mm resulted in a high number of branches (14.33 branches), a high vegetative stomatal density (234 stomata/mm²), and a high number of flowers (2.33 flowers). The highest root fresh weight, 2.81 g, occurred at a salinity of 24 mS/cm and a flushing volume of 3.5 mm. A salinity of 12 mS/cm with a flushing volume of 7 mm resulted in the highest vegetative proline content, 24.24 μ mol/g.

Keywords: melon, air salinity, foliar flushing, vegetative physiology

Identification Of Antimicrobial Peptides From Casein Of Saanen Goat Milk (*Capra aegagrus*)

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Abstract

Infectious diseases are one of the leading causes of death worldwide, including in Indonesia. Infectious diseases can be caused by microorganisms such as bacteria and fungi. The treatment of infectious diseases can be carried out using antibiotics as antimicrobial agents. However, pathogenic microbes have resistance mechanisms against conventional antibiotics through genetic mutation and the transfer of resistant genes, leading to antimicrobial resistance. One approach that can be taken is the exploration of safer antimicrobials from protein sources, such as antimicrobial bioactive peptides or Antimicrobial Peptides (AMPs). Bioactive peptides can be produced from the hydrolysis of Saanen goat milk casein (*Capra aegagrus*) using trypsin enzyme. The objective of this study is to isolate and fractionate bioactive peptides from Saanen goat milk casein, determine the antimicrobial activity of peptide fractions, and identify active peptide fractions as antimicrobials using LC-HRMS. The research steps included the isolation of Saanen goat milk casein, casein hydrolysis, fractionation using SPE SCX and PEP, antimicrobial activity testing, determination of MIC values, and identification of active peptide fractions using LC-HRMS. Based on this study, it can be seen that the highest degree of casein hydrolysis was obtained in hydrolysis with an enzyme:substrate ratio of 1:40, which was 80.29%. The antimicrobial activity test results showed that fraction F6 was able to inhibit the growth of *E. coli*, *S. aureus*, and *C. albicans*, with the highest inhibition zones of 8.93, 4.04, and 4.41 mm, respectively. The fraction with the highest activity contains five peptide sequences: NMAIHPR, VLPNTVPAK, EVPNENLLR, HPINHQGLSPEVPNENLLR, and VLPVPQK.

Keywords: antimicrobial, goat milk, LC-HRMS, protein hydrolysate, trypsin enzyme

Exploration of Entomopathogenic Bacteria from Cockroach Cadavers and Their Potential as Bioinsecticides for Controlling German Cockroaches, *Blattella germanica* L.

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Abstract

The use of synthetic insecticides to control German cockroaches, *Blattella germanica* L., has caused various problems such as insect resistance, threats to food safety, and negative environmental impacts. Therefore, more environmentally friendly control alternatives are needed. One solution is to utilize entomopathogenic bacteria from cockroach cadavers. This study aimed to identify chitinolytic bacterial isolates with potential as bioinsecticides for controlling German cockroaches. The study began with cockroach cadaver sample preparation, bacterial isolation, bacterial isolate enumeration, bacterial isolate purification, chitinolytic ability screening, efficacy testing of selected bacteria against German cockroaches, and confirmation testing. The exploration yielded 36 bacterial isolates from cockroach cadavers. The chitinolytic ability screening selected six isolates: JL6 B, JL6 C, JL6 D, JM6 D, JM6 J, and JM6 Q, which were then exposed to German cockroaches. ANOVA analysis showed a significant effect of bacterial isolate treatment on German cockroach mortality. Isolate JL6 C produced the highest percentage of test cockroach mortality (70%), while isolate JM6 Q produced the lowest percentage of test cockroach mortality (20%).

Keywords: bioinsecticide, chitinolytic, entomopathogenic bacteria, german cockroach, mortality

Effect of Substrate Type on Growth and Metabolic Rate of *Diopatra claparedii*

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Abstract

Diopatra claparedii is a marine polychaete worm (Family Onuphidae) inhabiting tubes 30–60 cm in length. It plays a crucial ecological role in benthic ecosystems and has significant economic value as a natural feed. This species is widely used as bait and feed due to its ability to induce shrimp gamete maturation by up to 70%. With the expansion of aquaculture industries, demand for *D. claparedii* continues to rise, particularly for broodstock maturation. However, supply still depends entirely on wild harvests, raising concerns over population decline and ecosystem imbalance. Cultivation is therefore essential, yet biological knowledge of this species remains limited in Indonesia. Environmental factors, including salinity, substrate, feed availability, and metabolism, are crucial for developing effective culture techniques. While previous studies identified 20 ppt salinity as optimal for growth, the influence of substrate type remains poorly understood. This study aimed to assess the survival, development, and metabolic rate of *D. claparedii* under different substrate conditions. A Completely Randomized Design (CRD) was applied with three treatments: mud, sand, and a 50% mud + 50% sand mixture, each replicated five times. Worms were reared at 20 ppt salinity and fed commercial (D-0) at 3% of biomass weekly. Results showed 100% survival across all treatments. Average growth ranged from 0.141 ± 0.052 to 0.421 ± 0.083 g, with mud and sand–mud mixtures supporting similar growth. Oxygen consumption was influenced by substrate; the highest metabolic rate occurred in the substrate sand, while mud and sand–mud mixtures yielded comparable rates.

Keywords: *Diopatra claparedii*, growth, metabolism, substrate, survival.

Freshwater Ornamental Crabs (*Geosesarma*) Diversity on the Western Slopes of Mount Slamet Based on Molecular Identification

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Abstract

This study aimed to evaluate the taxonomic diversity of freshwater ornamental crabs from the genus *Geosesarma* on the western slopes of Mount Slamet. Sampling was carried out in Kalipedes Village and Cantel waterfall, Brebes, Central Java. Crab samples were collected manually using bare hands. Morphological identification was carried out based on carapace shape. Molecular identification was carried out using a fragment of cytochrome c oxidase 1. The samples were morphologically identified into two morphotypes, e.g. rectangle and oval carapaces. The rectangle carapace is a characteristic of *Geosesarma* and oval carapace is a characteristic of *Parathelphusa* or *Terrathelphusa*. Molecular identification placed crab specimens into three genetic species, i.e. *G. dennerle*, *G. hagen* and *Terrathelphusa* sp. It can be concluded that two species *Geosesarma* inhabits western slope of Mount Slamet.

Keywords: crabs, homology, monophyly, mount Slamet, similarity

Pathogenicity of *Fusarium oxysporum* on Five Plant Species from Different Families with Various Inoculation Methods

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Abstract

The fungus *Fusarium oxysporum* isolated from *Spodoptera frugiperda* larvae that attack corn plants has the potential to be an entomopathogen. However, we also know that the fungus *F. oxysporum* is a soil-borne pathogen in various cultivated plants. This study aims to test the pathogenicity of *F. oxysporum* against five types of plants from different families with four inoculation methods, namely on leaves, stems, roots, and controls without inoculation. The experiment used a randomized block design (RBD) with two factors. Factor A consisted of five species from different families, and Factor B consisted of four inoculation methods: leaves, stems, roots, and no inoculation (control). Each treatment combination was replicated three times. The experimental plants comprised corn (*Zea mays*, Poaceae), tomatoes (*Solanum lycopersicum*, Solanaceae), peanuts (*Arachis hypogaea*, Fabaceae), pakcoy (*Brassica rapa* subsp. *chinensis*, Brassicaceae) and cucumbers (*Cucumis sativus*, Cucurbitaceae). The parameters measured comprised vegetative development, pathogenicity signs, and attack intensity. The results showed no signs of pathogenicity in any of the examined plants, such as wilting or necrosis. This finding indicates that the five plant families under investigation did not react negatively to the *F. oxysporum* inoculation. Therefore, it can be concluded that the *F. oxysporum* strain acts as an entomopathogenic bioinsecticide that is innocuous to the studied plants and encourages their growth.

Keywords: *Fusarium oxysporum*, entomopathogen, pathogenicity, plant family, greenhouse

Floral Morphology and Physiological Traits of *Vanda limbata* Blume 'Java' in the KPH Bojonegoro, East Java

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Abstract

The KPH Bojonegoro (Bojonegoro Forest Management Unit), encompassing 48,092 hectares of production forest, is home to a significant population of *Vanda limbata* Blume 'Java', an epiphytic orchid species commonly found on teak (*Tectona grandis*) trees. Notable phenotypic variation in floral coloration, such as yellow flowers with reticulate or spotted patterns, has been observed among individual plants. This study aims to investigate the morphological and physiological diversity of *V. limbata* 'Java' flowers within the Bojonegoro region and to identify cultivars with high economic potential based on floral traits, including aesthetic appeal and environmental adaptability. Project activities, scheduled from May to October 2025, include sampling of *V. limbata* specimens across KPH Bojonegoro, morphological assessments of flower quality and quantity, physiological analysis focusing on flavonoid content, phylogenetic tree construction among genotypes, and comprehensive data analysis. The flowers of *Vanda limbata* from Bojonegoro exhibit unique variations in color and pattern. The margins of the sepals and petals range from yellow to brown, while the central part of the flower displays a reticulate or spotted pattern in brown. Preliminary observations indicate distinct morphological and physiological differences among *V. limbata* 'Java' flowers in this region, providing a fundamental basis for future genetic improvement and conservation strategies.

Keywords: Keywords: Bojonegoro, morphology, physiology, *Vanda limbata* 'Java'

Utilization Of Functional Marker Badh2.7 For Aromatic and Non-Aromatic Rice Differentiation Using Badex7-5 And Bradbury Primers

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Abstract

Aromatic rice is a high-value rice characterized by the presence of 2-acetyl-1-pyrroline (2-AP) in its endosperm. Accurate and practical identification of aromatic genotypes is essential to support molecular-assisted breeding. This study is aimed at detection of badh2.7 gene which is responsible for 2-AP biosynthesis in rice R. Fourteen rice genotypes were evaluated for the presence of badh2 gene using Badex7-5 and Bradbury primers. The research was carried out at the Plant Breeding and Biotechnology Laboratory, Faculty of Agriculture, Jenderal Soedirman University. DNA was extracted using the CTAB method. Detection of the presence of badh2.7 gene was carried out using single-plex and multiplex PCR for Badex7-5 and Bradbury primers, respectively. The results demonstrated Badex7-5 primers effectively differentiate aromatic genotypes from non-aromatic ones. Bradbury primers could detect the presence of badh2.7 gene in aromatic rice of Mentik Wangi, Basmati-P and Bengawan Solo, but not in aromatic rice of Pandan Wangi and Basmati Ori, Basmati-T and Jeliteng which demonstrated a non-aromatic DNA banding pattern. The later suggests the presence of alternative mutations beyond the known 8 bp deletion in exon 7 which could not be detected by Bradbury primers. The varieties Mentik Wangi, Basmati-P, and Bengawan Solo were confirmed to carry aromatic homozygous dominant allele for badh2.7. This research confirms the reliability of Badex7-5 primers for molecular assisted selection of aromatic trait in Indonesia rice germplasm.

Keywords: aromatic rice, badh2.7, Badex7-5, Bradbury, molecular assisted selection

Phenolic Content and Sensory Value of Synbiotic Goat Milk Kefir with Added Beetroot, Dragon Fruit, and Black Rice Extracts as a Functional Drink for Obesity Sufferers

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Abstract

Obesity is a global health problem with an increasing prevalence. It is a medical condition characterized by excessive accumulation of fat tissue in the body, caused by an imbalance between calorie intake and expenditure. The use of food ingredients with high nutritional value and wide availability, such as goat's milk, banana peels, beetroot, dragon fruit, and black rice, can provide alternative raw materials for developing synbiotic kefir. Kefir has potential as a functional anti-obesity product due to its ability to accelerate metabolism and promote fat burning, which may contribute to weight reduction. This study aimed to determine the phenolic content and sensory attributes (color, aroma, taste, and texture) of synbiotic goat milk kefir enriched with natural extracts. The experiment was conducted using a Completely Randomized Design (CRD) with four treatments, consisting of the addition of black rice, beetroot, and dragon fruit extracts at concentrations of 0.5%, 1%, 1.5%, and 2%. The results showed that the highest phenolic content was obtained in kefir with 0.5% black rice extract, while the most preferred product based on sensory evaluation was kefir with 1.5% beetroot extract.

Keywords: synbiotic kefir, goat milk, beetroot, dragon fruit, black rice, phenol

Nanoemulsions Formulation of Nutmeg Seed Essential Oil Fractions and Antibacterial Activity Evaluation against *Staphylococcus aureus* and *Escherichia coli*

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Abstract

Staphylococcus aureus and *Escherichia coli* are pathogenic bacteria with increasing antibiotic resistance, necessitating alternative antibacterial agents. Nutmeg seed essential oil (*Myristica fragrans* Houtt.) contains bioactive compounds with antibacterial potential, but its volatility and instability require formulation into nanoemulsions. The essential oil was fractionated by reduced-pressure distillation (10 mmHg) into three fractions, which were then tested for antibacterial activity. The most active fraction was formulated into nanoemulsions with varying concentrations, characterized, and tested for antibacterial activity. Fraction 2 (FR2), dominated by terpinen-4-ol, β -phellandrene, and γ -terpinene, showed the strongest activity with inhibition zones of 3.88 mm against *S. aureus* and 5.12 mm against *E. coli*. The resulting oil-in-water nanoemulsions were clear, with pH values of 4.53–5.43, viscosities of 2.6–16.45 mPa.s, particle sizes <200 nm, and good stability. Antibacterial assays showed that the nanoemulsions exhibited higher activity than the essential oil fraction, with inhibition zones of 3.47–9.46 mm against *S. aureus* and 4.09–7.26 mm against *E. coli*.

Keywords: Nutmeg, essential oil, fractional distillation, nanoemulsion, antibacterial

Antibacterial Activity of Clitoria Ternatea Flower Extract Against Post-Dental Extraction Bacteria: In Vitro and In Silico Analysis

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Abstract

Post-dental extraction wounds are susceptible to bacterial infections that can delay healing and cause complications. *Clitoria ternatea* L. (butterfly pea flower) contains bioactive compounds with potential antibacterial properties. This study aimed to evaluate the antibacterial activity of *C. ternatea* flower extract against bacteria commonly associated with post-dental extraction wound infections and to assess the drug-like properties of its bioactive compounds through in silico analysis. Ethanol extracts of *C. ternatea* flowers were prepared at concentrations of 5%, 10%, and 15%. The antibacterial assay was performed using agar well diffusion tests against *Streptococcus mutans*, *Prevotella intermedia*, *Pseudomonas aeruginosa*, and *Fusobacterium nucleatum*. The inhibition zones of extract ranging from 9.22 to 19.85 mm. Phytochemical analysis revealed the presence of anthocyanins, flavonoid, triterpenoid, saponin and caempferol compounds. Preliminary in silico screening using the PASS online tool revealed that the main phytochemicals of *C. ternatea* possess high probabilities for antibacterial, antioxidant, and anti-inflammatory activities, supporting their potential role in wound healing. These findings suggest that *C. ternatea* flower extract may serve as a promising natural antibacterial agent against post-dental extraction wound-associated bacteria. The in silico findings support the therapeutic potential of this natural extract as an alternative antibacterial agent for dental care applications.

Keywords: *Clitoria ternatea* flower, antibacterial, oral pathogens, wound healing, in silico

Analysis of Contributing Factors to Pre-Metabolic Syndrome in Young Adults

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Abstract

Young adulthood represents a transitional phase from adolescence to adulthood, during which metabolic processes tend to decelerate. Dietary patterns in this age group are often characterized by high glycaemic index foods and saturated fat intake. These conditions may increase the risk of degenerative diseases, potentially leading to early pre-metabolic syndrome. Metabolic syndrome is a cluster of clinical manifestations indicating impaired metabolic function, characterized by increased abdominal fat (central obesity), elevated blood pressure, and elevated levels of cholesterol and blood glucose. Methods: This research used cross-sectional methods with 135 sample using consecutive sampling mechanism. The bivariate correlation was analysed with rank-spearman test. Result: Several young adult respondents were classified as overweight or obese. Individuals with overweight or obesity are at a higher risk of elevated blood pressure compared to those with normal nutritional status. Overweight and obesity result from excessive fat accumulation, which can induce oxidative stress. Oxidative stress disrupts metabolic processes and may trigger the onset of pre-metabolic syndrome. Conclusion: Young adults need to pay attention to their body composition, particularly the balance between muscle and fat. This is essential to prevent early pre-metabolic syndrome resulting from metabolic stress associated with overweight and obesity.

Keywords: Overweight, Obesitas, Pra-Metabolic Syndrome, Young Adults

An Analysis of the Soybean Supply Chain in Banyumas: A SCOR Framework Approach

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Abstract

Banyumas Regency is a major soybean producer in Central Java, making it an industrial base for tofu and tempeh. These processed soybean products are highly popular and are consumed daily by the public. However, the soybean supply chain faces challenges, as each agribusiness institution involved causes an increase in product value, resulting in a significant price difference between the producer and the final consumer. Therefore, this study aims to measure the soybean supply chain's performance using the Supply Chain Operation Reference (SCOR) framework. This methodology divides the supply chain process into five core components: plan, source, make, deliver, and return, which represent the entire performance from upstream to downstream. The research findings indicate that the soybean supply chain's performance in Banyumas Regency is considered good. This is evidenced by high delivery and perfect order fulfillment rates, as well as an increasing alignment of products with quality standards. The responsiveness aspect is also strong, with short order fulfillment lead times that can be adjusted to stock availability. Nonetheless, there is still room to optimize supply chain flexibility, particularly in responding to sudden orders. Financially, the operational costs of the supply chain are fully covered by the sales value of the soybeans, reflecting efficient cost management. Given these conditions, the government's role is crucial in improving the supply chain's efficiency and effectiveness. The government can contribute by ensuring the adequate availability of seeds to guarantee timely production and by implementing policies that support the absorption of local soybeans by the tofu and tempeh processing industries.

Keywords: Soybean, Banyumas, Production, Supply Chain, SCOR

Flexural Response of RC T-Beams Strengthened with Polymer Cement Mortar: An Analytical Approach

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Abstract

This study analytically investigated the effectiveness of polymer cement mortar (PCM) as a strengthening material for reinforced concrete (RC) T-beams in the negative moment region. Two retrofitting schemes were examined, where PCM layers were combined with 13-mm and 16-mm diameter steel bars. Flexural behavior was evaluated through three-point bending analysis, and the outcomes were benchmarked against a control specimen without retrofitting. The analytical framework, formulated using the Modified Compression Field Theory (MCFT), was validated against previously reported experimental data. The predicted responses showed strong agreement with observed results, thereby confirming the reliability of the adopted model. Building on this validation, a comprehensive parametric study was carried out to examine the influence of key parameters, including concrete compressive strength, PCM layer thickness, and steel reinforcement ratio. The findings consistently indicated that higher compressive strength and greater PCM thickness significantly enhance load-carrying capacity, while strengthening effectiveness remains robust across a wide range of reinforcement ratios. Collectively, the results underscore the potential of PCM as a reliable, practical, and versatile solution for flexural strengthening in the negative moment region of RC T-beams.

Keywords: flexural strengthening; polymer cement mortar; negative moment region; RC T-beams; parametric study

Animal Welfare in Halal Studies: Trends and Insights from Bibliometric Analysis

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Abstract

This study aims to describe the publication trend in the SCOPUS database concerning animal welfare in halal studies from 2004 to 2024. This study employed a bibliometric analysis approach with the Biblioshiny application and VOSviewer for data visualisation. The results of the study indicated that a significant increase in animal welfare related to animal welfare in halal studies occurred in 2014, while the manuscript that received the most citations was a manuscript published in 2008. The United Kingdom is the foremost nation in generating manuscripts regarding animal welfare in halal studies in total; however, the institution with the highest publication output is Universiti Putra Malaysia. The results of the keyword co-occurrence analysis revealed that the study clusters can be grouped based on animal types, namely small ruminants, big ruminants, and poultry slaughtering. Regarding thematic evolution, studies related to stunning and comparisons between halal slaughter and other religious slaughter remain basic themes in the 2004-2014 or 2015-2024 time slices. Niche themes in the first period revolve around the study of biotechnology, food sustainability, and other themes that aim to produce meat that is fit to consume. Meanwhile, niche themes in the second period contain animal welfare studies in social media. Bibliographic coupling resulted in several clusters, including those focused on animal welfare and meat quality, a halal supply chain emphasising animal welfare, an examination of halal standards across different nations, the effectiveness of various slaughtering techniques, the implementation of animal welfare practices in abattoirs, and the prohibition of stunning techniques during slaughter.

Keywords: Animal Welfare, Bibliometric, Halal, Scopus, Trend

Potential of Efferfescent *Spirulina platensis* Supplementation in Improving Hematological Profiles as a Basis for Malaria-Associated Anemia Management

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Abstract

Malaria remains a global health burden, with anemia as one of its major complications caused by erythrocyte destruction. This condition reduces red blood cell (RBC) count, hemoglobin concentration, and hematocrit, impairing oxygen transport. Natural hematinic agents are therefore needed as supportive strategies in malaria management. *Spirulina platensis* is rich in proteins, iron, vitamin B12, and phycocyanin, all of which play essential roles in erythropoiesis. This study aimed to evaluate the potential of Efferfescent *Spirulina platensis* supplementation in improving hematological profiles in mice (*Mus musculus*). Six experimental groups were assigned: control (0%) and *Spirulina* at concentrations of 7.5%, 15%, 30%, 35%, and 50%. Hematological parameters (RBC count, hemoglobin, and hematocrit) were measured at baseline, week I, week II, and week III. The results show that *Spirulina* supplementation at 15% and 50% significantly increased hemoglobin (14.57–16.3 g/dL) and hematocrit (46.33–56.27%) during weeks I–II, although values declined by week III. Moderate doses (7.5–30%) produced more stable effects compared to higher doses (35–50%), which showed fluctuations. Efferfescent *S. platensis* supplementation demonstrates potential as a natural hematinic agent to support anemia prevention in malaria. These findings provide a scientific basis for developing *Spirulina* as an adjuvant therapy in malaria management.

Keywords: Hemoglobin, Hematocrit, Malaria, *Spirulina platensis*, Red Blood Cells

Diffusion on Science and Technology Application and The Use of Automatic Sieving Machines to Improve The Quality and Quantity of Palm Sugar by The Nira Sari Murni Cilongok Group

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Abstract

The Nira Sari Murni Farmers Group, located in Batuanten Village, Cilongok District, produces crystal and molded coconut sugar. Led by H. Masykur, the group comprises around 200 organic coconut sugar tappers and 26 employees from the local community. This community engagement initiative aimed to enhance the skills, quality, and productivity of coconut sugar production, as well as product innovation and marketing, to improve partner welfare in alignment with the 17 SDGs, IKU 2, 3, and 5, Asta Cita 2–6, and RIRN's food sector focus. Key challenges included inconsistent product quality due to seasonal variations, outdated equipment, non-hygienic production facilities not meeting CPPOB/GMP standards, simple packaging, and limited marketing reach. Solutions involved training on the use of the natural sap preservative "Tangkis," product diversification, modern packaging and labeling techniques, digital marketing strategies, and business legality including halal and PIRT certification. Results showed improved knowledge (100% post-test scores in GMP training), increased production efficiency with an automatic sieving machine, and product innovations using byproducts for spice drinks. Attractive packaging and digital marketing increased market access and credibility, both online and at expos supported by benih.baik.com, VISA, and the Ministry of Trade.

Keywords: Crystal Sugar, Batuanten, Sieving Machine, Training, Quantity and Quality

Navigating Health Information System Resilience in the Digital Era: A Scoping Review

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Abstract

In the era of digital transformation, health information systems (HIS) are undergoing rapid evolution to meet the growing demands for efficient healthcare delivery. With the integration of emerging technologies like cloud computing, artificial intelligence (AI), and big data analytics, the resilience of HIS becomes a critical factor in ensuring continuity and adaptation in the face of technological, organizational, and environmental disruptions. However, there is a significant gap in understanding the key components, strategies, and challenges associated with HIS resilience. This scoping review aims to explore the resilience of health information systems in the context of digital transformation, focusing on identifying relevant factors, models, and frameworks that contribute to the robustness and adaptability of HIS. A scoping review methodology was employed to systematically map and synthesize existing literature on the resilience of health information systems in the context of digital transformation. A comprehensive search was conducted across multiple electronic databases, including PubMed, Scopus, IEEE Xplore, and Google Scholar. The inclusion criteria encompassed peer-reviewed articles published between 2010 and 2024, addressing various dimensions of HIS resilience, such as system robustness, adaptability, data security, and the capacity for recovery after disruptions. Articles that focused on health information systems in various healthcare settings—such as hospitals, primary care, and public health systems—were considered for inclusion. The data was extracted and analyzed to identify common themes, resilience frameworks, and the impact of digital transformation on HIS performance and sustainability. The review identified a diverse range of factors influencing HIS resilience. Key themes that emerged include the importance of technological infrastructure, data governance, system interoperability, and cybersecurity measures. Additionally, the capacity of HIS to recover from disruptions and adapt to new technological advancements was highlighted as a core element of resilience. Models such as the Adaptive Systems Theory and the Resilience Engineering Framework were found to provide valuable insights into the mechanisms through which HIS maintain operational continuity and adapt to changing conditions. Furthermore, challenges related to organizational culture, staff training, and the integration of emerging technologies were consistently noted as barriers to achieving resilience in HIS. While digital transformation holds the potential to enhance the resilience of health information systems, it also presents new risks, such as cybersecurity threats and the complexities of system integration across diverse healthcare settings. This scoping review provides a comprehensive understanding of the resilience of health information systems in the context of digital transformation. It highlights key components and strategies that contribute to HIS resilience, as well as challenges that must be addressed to ensure the continued effectiveness of these systems. The findings underscore the need for a holistic approach to HIS design and implementation, incorporating technological, organizational, and human factors. Future research should focus on developing robust frameworks for HIS resilience that can guide healthcare organizations in navigating the complexities of digital transformation while maintaining system stability, security, and adaptability.

Keywords: Health Information Systems (HIS), Resilience, Digital Transformation, Digital Health, Healthcare Systems



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SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT

Analysis of $VO_2\text{max}$, Body Composition, and Personal Best Performance among Recreational Runners

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Abstract

Recreational running has gained popularity as both a fitness activity and a competitive pursuit, with performance often measured through personal best race times. Physiological indicators such as maximal oxygen uptake ($VO_2\text{max}$) and body composition are critical factors influencing endurance performance. This study employed a quantitative correlational design to analyze the relationship between $VO_2\text{max}$, body composition, and personal best performance among recreational runners. A total of 44 participants (male and female) were recruited from local running communities. $VO_2\text{max}$ was assessed using the Balke treadmill test, while body composition (body fat percentage and body mass index) was measured with bioelectrical impedance analysis. Personal best records were obtained from participants' official race results. Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression to determine the relationships among variables. The results showed that higher $VO_2\text{max}$ values were significantly associated with faster personal best times, whereas higher body fat percentage and body mass index were correlated with slower performances. These findings highlight the importance of $VO_2\text{max}$ and body composition as determinants of endurance performance among recreational runners, suggesting the need for training strategies focused on aerobic capacity development and body composition management.

Keywords: $VO_2\text{max}$, Balke Test, Body Composition, Personal Best, Recreational Runners

Climate Literacy in ASEAN: A Comprehensive Literature Study on Regional Approaches to Climate Education and Public Awareness

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Abstract

The Association of Southeast Asian Nations (ASEAN) faces significant climate vulnerabilities, with the region experiencing intensifying environmental challenges including rising sea levels, extreme weather events, and ecosystem degradation. As ASEAN pursues deeper integration and sustainable development goals, climate literacy has emerged as a crucial component for building regional resilience and fostering effective climate governance. This comprehensive literature study examines the current state of climate literacy across ASEAN member states, analyzing educational approaches, policy frameworks, and public awareness initiatives that contribute to climate understanding and action. This literature study reviews academic publications, policy documents, and institutional reports spanning 2015-2024, focusing on climate education, environmental literacy, and public awareness programs across all ten ASEAN countries. The study employs a thematic analysis approach to identify patterns, best practices, and gaps in climate literacy development throughout the region. Key sources include peer-reviewed journals, government publications, NGO reports, and ASEAN institutional documents related to climate education and environmental awareness. The analysis reveals significant heterogeneity in climate literacy approaches across ASEAN, reflecting varying levels of economic development, educational infrastructure, and political commitment to climate action. Countries like Singapore and Thailand demonstrate advanced climate education integration, while newer ASEAN members face structural challenges in developing comprehensive climate literacy programs. The study identifies several critical themes: (1) the role of formal education systems in climate literacy development; (2) community-based approaches to environmental awareness; (3) the integration of traditional ecological knowledge with modern climate science; (4) digital literacy and climate communication strategies; and (5) the influence of cultural and linguistic diversity on climate education effectiveness. Key findings indicate that successful climate literacy initiatives in ASEAN often combine top-down policy frameworks with bottom-up community engagement, leverage indigenous knowledge systems, and adapt international best practices to local contexts. However, significant gaps persist, including limited coordination between member states, insufficient funding for rural and remote communities, and inadequate teacher training in climate science. The study also reveals the underutilization of ASEAN's institutional mechanisms for promoting regional climate education cooperation. This literature study contributes to understanding climate literacy as both a national development priority and a regional public good within the ASEAN framework. The findings provide evidence-based insights for policymakers, educators, and international development partners seeking to enhance climate education effectiveness in Southeast Asia. The study concludes by proposing a framework for strengthened regional cooperation in climate literacy that respects national sovereignty while promoting knowledge sharing and capacity building across ASEAN member states.

Keywords: Climate Literacy, ASEAN, Environmental Education, Climate Awareness, Regional Cooperation, Southeast Asia, Climate Governance

Hactivism and Cyberterrorism from a Human Rights Perspective

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Abstract

Hactivism is hacking activity carried out with the aim of promoting a political or social agenda, done to disrupt, expose, or embarrass targets they consider unfair. Their protests range from anti-authoritarianism, environmentalism, religious extremism, and anti-globalisation. Terrorists also engage in hactivism by hiding behind the right to freedom of expression, making it difficult to distinguish between true hactivists and terrorists. This research is non-doctrinal, empirical legal research. The traditional concept of human rights is tested when hactivism emerges on the internet. Hactivism is often anonymous and claims to serve interests that transcend specific countries. The results of the study show that hactivism and cyber terrorism have similarities in terms of tools, methods, motives, and level of concern. The difference lies in the distinctive characteristics of terrorism itself, which is accompanied by violence or threats of violence that cause damage and casualties. Indonesia's cyberspace is not immune to terrorist activities disguised as hactivism. Indonesia needs to respond to this with legislation, ratification of conventions and international cooperation, technical measures, or the establishment of a cyber activity monitoring agency. By continuing to prioritise human rights, the noble goals of hactivism can still be achieved and the negative goals of cyber terrorism can be prevented.

Keywords: Cybercrime, cyber terrorism, hactivism, human rights, freedom of expression.

Sustainable Livelihood Strategies Based on Assets in Horticultural Area Development in Wonosobo District, Central Java, Indonesia

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Abstract

A diverse range of assets enables households to pursue a wider and more flexible range of livelihood strategies, increasing their ability to adapt to challenges and improve their capacity to manage risk. The availability and quality of these assets directly influence the types of livelihood strategies that can be adopted, such as crop diversification, increased commercial activities, or investment in new businesses. This study aims to analyze the sustainable livelihood strategy based on assets in horticultural area development in Wonosobo District. The analysis methods used are quantitative and qualitative analysis. The research was conducted in Wonosobo District from June to July 2025. The research variables include human capital, natural capital, social capital, physical capital, and financial capital. Livelihood strategies are grouped into intensification or extensification strategies, diversification strategies, and migration strategies. The results show that Kalikajar Subdistrict has the highest asset ownership and Sapuran Subdistrict has the lowest. Social capital has a dominant value in all research locations. The scale value of each capital is projected in the asset pentagon. The agricultural land use sector dominates intensification and extensification strategies. Diversification strategies are dominated by the trade, processing, and marketing of agricultural products sectors. However, migration strategies are not widely practiced.

Keywords: livelihood strategies, assets, horticultural, agricultural land use

Evaluation of Phosphorus Availability in Paddy Fields: A Case Study in Ajibarang, Banyumas

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Abstract

Phosphorus (P) is an essential element needed in general plant cultivation, including rice. Rice, as a staple food for the community, is required in large quantities with high demand throughout the year, and the increase is also quite significant. Phosphorus, as an essential macro element needed by plants, plays an important role in rice production. Therefore, this research examines the P element present in the rice fields and its absorption in plant organs to determine fertilization recommendations. This research was conducted in the irrigated rice fields of the Serayu River Basin area, Ajibarang District, Banyumas Regency, and in the Soil and Land Resource Laboratory, Faculty of Agriculture, Universitas Jenderal Soedirman. The research was conducted from December 2023 to July 2024. The determination of sample point locations is based on the homogeneous land unit map that has been created, and then the transect method is used to determine the sample points. Soil sampling using a soil auger was conducted at depths of 0-25 cm and 25-50 cm. The status of available soil P in Ajibarang District is dominated by moderate levels, with an average soil available P value at a depth of 0-25 cm being 12.36 ppm P_2O_5 , while at a depth of 25-50 cm it is 11.91 ppm P_2O_5 . The correlation results between soil available P and crop yield are not significant with a value of ($r=0.238$), indicating a weak correlation. The recommended P fertilization needed to increase the P_2O_5 content of the soil to a high level in the Ajibarang District area is 15.6 kg P_2O_5 ha⁻¹, with an application dose of SP-36 fertilizer at 43.3 kg ha⁻¹ or TSP fertilizer at 34.7 kg ha⁻¹.

Keywords: Paddy fields, phosphorus, P nutrient absorption, soil chemical properties

Effect of Rhizosphere Bacterial Isolates From Iron Sand Plants on the Growth of Chili (*CAPSICUM ANNUUM* L.) Seedlings Using the Axenic Sand Culture Assay Method

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Abstract

Iron sand soil has low organic matter and a high iron (Fe) content of 38–59%, commonly found in coastal areas. Chili (*Capsicum annuum* L.) is relatively tolerant to environmental stress, and the application of Plant Growth Promoting Rhizobacteria (PGPR) can enhance its growth on marginal land by improving nutrient absorption. This study aimed to evaluate the potential of three rhizosphere bacterial isolates (PT4C5, KT6A5, and CT4A7) as PGPR, their effects on chili seed germination and vegetative growth using the axenic sand culture assay, and to identify the isolates based on phenotypic traits. The research combined survey and experimental approaches. Phenotypic characterization was conducted to describe bacterial traits, while experimental trials assessed their effects on chili growth. A completely randomized design (CRD) with five treatments (control, PT4C5, KT6A5, CT4A7, consortium, and EM4) and three replications was applied. Results showed that PT4C5, KT6A5, and CT4A7 possess PGPR traits, including nitrogen fixation, phosphate and potassium solubilization, IAA production, and siderophore synthesis. These isolates significantly influenced chili seed germination, particularly in consortium treatment. Inoculation enhanced plant height, fresh weight, root length, leaf number, and chlorophyll content. Based on phenotypic characterization, all three isolates were identified as belonging to the genus *Planococcus*.

Keywords: Axenic sand culture assay, *Capsicum annuum* L., PGPR

Assessing Digital Resilience in Primary Health Care: A Structural Framework

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Abstract

The digital transformation in healthcare has significantly altered the way healthcare services are delivered, particularly in primary care settings such as Puskesmas (Community Health Centers) in Indonesia. The rapid adoption of digital technologies in these centers has been pivotal in enhancing service accessibility, efficiency, and quality. However, the ability of these institutions to adapt and respond to digital disruptions—referred to as digital resilience—remains underexplored. This study aims to assess the digital resilience of Puskesmas by employing bibliometric analysis to examine the current landscape of research on this topic. The findings offer insights into the factors influencing the digital adaptation process and its implications for improving healthcare service delivery.

This research utilizes a bibliometric approach to systematically analyze scholarly articles, conference papers, and other academic literature related to digital resilience in healthcare, with a focus on primary care institutions like Puskesmas. Data were sourced from major databases, including Scopus, Web of Science, and Google Scholar. Key variables such as publication trends, influential authors, geographic distribution of research, and the primary themes explored were extracted and analyzed using bibliometric tools such as VOSviewer and Bibliometrix. The study also assessed citation patterns and keyword co-occurrences to identify emerging trends and research gaps.

The results reveal a growing interest in digital resilience within healthcare systems, particularly in low-resource settings like Puskesmas. Key themes identified include the role of infrastructure, digital literacy, policy support, and community engagement in fostering resilience. The analysis shows that the majority of studies focus on the technical aspects of digital tools, with less emphasis on the socio-cultural and organizational dimensions of digital resilience. Furthermore, research from Southeast Asia is notably underrepresented, which suggests a need for region-specific studies to better understand the challenges and opportunities in this context.

In conclusion, the study highlights the importance of a holistic approach to digital resilience in Puskesmas, emphasizing not only technological readiness but also organizational capacity and community involvement. It is recommended that future research focus on bridging the gaps in socio-cultural and organizational aspects of digital resilience, as well as exploring strategies for enhancing digital literacy among healthcare workers and the communities they serve. Additionally, policymakers should prioritize investments in infrastructure and training programs to strengthen digital resilience in primary healthcare settings. These efforts will be essential in ensuring that Puskesmas can effectively leverage digital technologies to improve healthcare delivery in the face of future disruptions.

Keywords: Digital Resilience, Primary Health Care, Assessing, Framework, Digital Transformation, Healthcare System, Digital Literacy, Policy Support

The Correlation of Restorative Justice with Pancasila as the Local Wisdom of the Indonesian Nation

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Abstract

Restorative justice is a relatively new method for resolving criminal cases using a restorative approach (recovery), differing from previous approaches, namely retributive justice (retribution) and distributive approaches. One of the goals of implementing a restorative justice approach in criminal cases is to discourage perpetrators from committing further crimes due to feelings of guilt for harming the victim. Pancasila, the foundation of the Indonesian state and the Indonesian way of life, is crucial for exploring its values. Therefore, the research question is whether there is a correlation between restorative justice and Pancasila and how Pancasila, as the local wisdom of the Indonesian nation, can be applied to restorative justice. The research method used in this study is normative juridical with a conceptual approach. Secondary data was analyzed qualitatively. The results indicate a correlation between restorative justice and Pancasila, particularly the second principle, "kemanusiaan yang adil dan beradab" and the fourth principle, "kerakyatan yang dipimpin oleh hikmah kebijaksanaan dalam permusyawaratan/ perwakilan ." The values contained in the Pancasila principles, which represent the local wisdom of the Indonesian people, can be applied, such as forgiveness, deliberation, and peace. Victims are expected to forgive the perpetrators to avoid resentment. Restorative justice is not native to Indonesia, but its values align with Pancasila as an Indonesian way of life and should be maintained.

Keywords: Restorative justice, Pancasila, Local wisdom

Internal Communication, Trust, and Organizational Learning: A Case Study of Paguyuban Budaya Bangsa

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Abstract

This study examines how internal communication functions as a strategic mechanism for building trust and fostering organizational learning within minority faith-based communities, with a specific focus on *Paguyuban Budaya Bangsa*, an indigenous religious organization in Indonesia. Employing a qualitative case study approach, data were collected through in-depth interviews, participant observation, focus group discussions, and document analysis. Preliminary findings indicate that transparent information sharing, participatory feedback mechanisms, and recognition of members' contributions are central to trust-building. At the same time, reliance on traditional leadership structures and resistance to organizational formalization remain significant barriers. The study suggests that internal communication practices are gradually shifting from leader-centric and oral traditions toward more dialogic and participatory patterns, enabling not only stronger trust but also adaptive learning processes that enhance organizational resilience. By situating this Indonesian case within broader debates on minority faith-based organizations, the research contributes both practical recommendations for community empowerment and theoretical insights into the intersection of communication, trust, and organizational learning.

Keywords: internal communication, trust, organizational learning, Paguyuban Budaya Bangsa, indigenous religious

Integrating Self-Help Group Education and Complementary Therapy via Mobile Application: A Community-Based Strategy to Strengthen Self-Care Behavior in Older Adults with Hypertension

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Abstract

Background: Uncontrolled hypertension is a major global contributor to cardiovascular morbidity and mortality. In alignment with the WHO-HEARTS framework and Sustainable Development Goal 3, this study developed an integrated model of Self-Help Group (SHG) Education supported by the Denmas Slamet mobile application and complementary therapy Auto-ReSIk (autogenic training, progressive muscle relaxation, and music therapy) to enhance self-care among hypertensive older adults.

Methods: A quasi-experimental pre–post control group design involved 60 participants (30 intervention; 30 control) randomly selected from Banyumas, Indonesia. The intervention comprised six weekly group sessions combining mobile health education, peer support, complementary therapy practice, and structured blood pressure monitoring. Self-care behavior was assessed using validated questionnaires at baseline and follow-up.

Results: The intervention group showed a significant improvement in self-care behavior ($p < 0.001$) compared with the control group ($p = 0.095$). Key improvements included healthier diet adherence, increased physical activity, improved medication compliance, and better stress management.

Conclusion: Integrating SHG education, mHealth tools, and culturally adaptable complementary therapies offers an innovative and scalable strategy for strengthening hypertension self-management in community settings. This model is consistent with global policy directions for noncommunicable disease prevention and may inform primary health care and national hypertension control initiatives, particularly in resource-limited contexts.

Keywords: complementary therapy, hypertension, self-care, self-help group

Unveiling the Research Impact: Sustainable Development Goals Frameworks.

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Abstract

The Sustainable Development Goals (SDGs) have become the global framework for sustainability policy. Mapping research in accordance with the SDGs is significant in demonstrating the critical contribution of research to support the SDGs. This study aims to analyse the impact of faculty research on the SDGs. This study uses qualitative methodologies, involving content analysis of articles indexed in Scopus. The study's findings contributed to an analysis of the impact rating of SDG-related research from 199 studies. These studies have a significant influence on SDG8 "Decent Work and Economic Growth", SDG9 "Industry, Innovation and Infrastructure", SDG12 "Responsible Consumption and Production", and SDG17 "Partnership for the Goals". However, the findings of this study indicate that these studies have had minimal impact on SDG6 "Clean Water and Sanitation", SDG3 "Good Health and Well-being", SDG5 "Gender Equality", and SDG2 "Zero Hunger". This study suggests that faculty management should prioritise SDG8 in their contributions and decision-making of social impact, which highlights the uniqueness of their thought.

Keywords: Social Impact, Sustainable Development Goals, Decent Work, Economic Growth

The Construction of Social Identity of Adolescents Through Slang in the Era of Globalization

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Abstract

This study aims to analyze the use of slang among adolescents as a tool for social identity formation in the era of globalization. Slang is viewed as a form of social expression that reflects the dynamics of adolescent groups and a response to global cultural changes. This study uses a qualitative descriptive approach with sociolinguistic methods, involving observational analysis, content analysis, and documentation of adolescents' verbal interactions on social media and in their social environments. Data were collected from texts and conversations on social media platforms such as Instagram, Twitter, and TikTok, as well as mass media targeting adolescents. The results indicate that slang plays an important role in strengthening adolescents' social group identity and fostering solidarity among them. Furthermore, globalization, particularly through social media, accelerates the spread of slang and influences the form and function of this language. This study also provides insight into the role of slang in the formation of adolescents' social identity and the impact of globalization on language among the younger generation.

Keywords: slang, adolescents, social identity, globalization, sociolinguistics

The Modeling and Kinematic Analysis for the Stability of PID-Based Navigation Control System in Hexapod Robots

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Abstract

Robotics technology plays a vital role in manufacturing, automation, healthcare, military, space exploration, and daily life, assisting humans and fueling ongoing research and development. One key innovation is the hexapod robot, featuring six legs with three legs per side, each with three degrees of freedom (3DoF) controlled by servo motors at each joint, providing flexible movement. However, achieving fast, directed, and stable motion requires precise robot design and algorithms. This study focuses on the modeling and kinematic analysis of a hexapod robot using PID control, employing inverse kinematics to accurately calculate joint angles based on leg lengths (coxa 30 mm, femur 50 mm, tibia 70 mm), implemented in C++ on Arduino IDE, and a wall-following algorithm for targeted navigation. Stability is ensured through PID (Proportional Integral Derivative) control. The research method includes designing models and prototypes, followed by laboratory testing, aiming to develop an autonomous and accurate hexapod. Testing established standard standby coordinates (e.g., front leg: 24, 64, 60 mm) and an effective tripod-like gait, with traversal times of 10-12 seconds per maze segment and kinematic errors averaging 2-5 mm due to mechanical tolerances and servo calibration. The study also explores gait patterns for maneuvers like forward, turning, and rotating, as illustrated in the provided diagrams, demonstrating the robot's ability to adapt its leg movements. These results are expected to support wider robotics applications, including autonomous navigation and target localization.

Keywords: hexapod robot, inverse kinematics, PID control, tripod gait, wall-following algorithm

Inventory of Forest Resources in KHDTK Unsoed as a Basis for Sustainable Green Management

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Abstract

Forest inventory is a crucial initial step in forest management, aimed at providing baseline data on species composition, stand density, and structural characteristics. This study seeks to identify vegetation types, biodiversity, physical conditions, and the socioeconomic profile of forest communities within the Special Purpose Forest Area (KHDTK) of Universitas Jenderal Soedirman, covering 97.8 hectares in Karang Jengkol Village, Purbalingga Regency, Central Java. A systematic sampling method with 25 circular plots, each measuring 35.6 m in diameter, was employed to represent the study area. In each plot, data were collected on vegetation, ecological attributes, physical conditions, and local community socioeconomic aspects. Data analysis included the calculation of density, frequency, basal area, and the importance value index (IVI). Without such an inventory, sustainable forest management is challenging to achieve due to the lack of adequate scientific information. The expected outputs of this research include a submission to *Jurnal Penelitian Kehutanan Wallacea*, proceedings of the LPPM Unsoed International Seminar (already presented), and a book publication.

Keywords: forest inventory, vegetation, biodiversity, KHDTK Unsoed, sustainable management, socioeconomic conditions

Inventory Planning Analysis Using the Continuous Review System Method in the Cotton, Kapok, and Ester Raw Material Warehouse

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Abstract

Inventory management plays a crucial role in manufacturing companies, particularly in the textile industry, which requires the availability of raw materials in appropriate quantities and at the right time to ensure a smooth production process. PT Unitex, as an integrated textile manufacturing company, relies heavily on cotton, kapok, and ester as raw materials in yarn production. However, during certain periods, the company has experienced stockouts, resulting in production delays, quality deterioration, and increased operational costs. These issues underscore the importance of implementing an effective and responsive inventory control system.

This study aims to analyze inventory planning at PT Unitex using the Continuous Review System (CRS) method, which enables continuous inventory monitoring and reordering once stock reaches the reorder point. The research methodology includes the collection of primary and secondary data such as historical demand data for 2024, ordering costs, storage costs, warehouse capacity, and lead time. The analysis was conducted through demand forecasting using the moving average and exponential smoothing methods, safety stock calculations, reorder point determination, economic order quantity (EOQ), and maximum inventory estimation.

The results indicate that applying CRS can optimize inventory management by reducing the risk of stockouts while minimizing excess inventory that leads to higher storage costs. By determining the optimal order quantity and accurate reorder timing, companies can enhance cost efficiency, maintain uninterrupted production, and strengthen competitiveness in the textile industry. Furthermore, this study provides practical recommendations for PT Unitex to adopt data-driven inventory policies that are adaptive to demand fluctuations and supply chain uncertainties.

Keywords: Inventory Management, Continuous Review System, Forecasting, Safety Stock, Reorder Point, Economic Order Quantity

Molecular Interactions of Active Compounds from *Zingiber Ottensii* with Protein Targets in Rheumatoid Arthritis

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Abstract

Rheumatoid arthritis is a chronic autoimmune disease that causes the immune system to attack the joints, resulting in pain, swelling, stiffness, and damage to the bones. This disease requires alternative therapies from natural ingredients. The rhizome of the *Zingiber ottensii* is an underutilized herbal plant, but its essential oil has been shown to have anti-inflammatory activity. The study aims to analyse protein targets in rheumatoid arthritis and investigate how the active substances in *Zingiber ottensii* rhizome interact with the protein targets. The study was conducted in silico using bioinformatics utilizing NCBI, PubChem, Admetlab 2.0, Swiss Target Prediction, Web Gestalt, STRING, and Cytoscape. To ascertain bond energies and types, molecular docking was performed in the study. The results showed that there are 6 compounds in the *Zingiber ottensii* rhizome that have potential in developing arthritis therapy namely Beta-Elemene; Zerumin; 7-[(1S,4aS,8aS)-5,5,8a-trimethyl-2-methylidene-3,4,4a,6,7,8-hexahydro-1H-naphthalen-1-yl]-3-hydroxy-4,7-dihydro-3H-dioxepine-5-carbaldehyde; Trans sabinene hydrate; (3R,7S)-7-[(1S,4aS,8aS)-5,5,8a-trimethyl-2-methylidene-3,4,4a,6,7,8-hexahydro-1H-naphthalen-1-yl]-3-hydroxy-4,7-dihydro-3H-dioxepine-5-carbaldehyde; and Thymene through the main proteins, namely TP53, TNF, EGFR, and CTNNB1. The molecular docking results show that the compounds in *Zingiber ottensii* interact with TNF and EGFR proteins. The active compounds of the *Zingiber ottensii* extract have the potential as alternative therapy candidates for rheumatoid arthritis through interactions with the TNF and EGFR.

Keywords: Arthritis, bioinformatics studies, molecular docking, *Zingiber ottensii*, TNF

Fungal Biodegradation of Liquid Ammonia Waste Using Immobilized Isolates from Poultry Rice Husk

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Abstract

Ammonia produced from chicken manure is the main source of pungent odors in livestock pens and can reduce the quality of the surrounding environment. Rice husks have long been used to reduce these odors, but the role of microorganisms, especially fungi, in the ammonia degradation process has rarely been studied. This study aims to isolate indigenous fungi from rice husks and husks that have been used in chicken coops, and to evaluate their potential as agents for the biodegradation of liquid ammonia through an immobilization system. Fungi were isolated from husk samples, and selected isolates were immobilized on a bio-ring matrix and tested on liquid waste containing ammonia. The results showed that fungi were successfully isolated from both types of husks with different isolate compositions. Isolates immobilized on bio-rings were able to grow well in liquid ammonia waste medium and produce high biomass, indicating their role as potential agents in ammonia degradation. These findings confirm that indigenous fungi from rice husks can be developed as an environmentally friendly biotechnology solution for liquid ammonia waste management in poultry farms.

Keywords: Ammonia waste, Biodegradation, Fungi immobilization, Indigenous fungi, Poultry farming, Rice husk

Pengembangan Produk Teh Bunga Rosela Menjadi Produk Penciri Wisata Bukit Teng Tung Baturaden Sebagai Upaya Peningkatan Klasifikasi Usaha menjadi Kategori Platinum

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Abstract

The Wanalestari Forest Village Community Institution (LMDH) manages the Bukit Tentung tourist destination in Baturaden District, Banyumas Regency. Currently, the destination is experiencing a decline in revenue, necessitating efforts to find alternative sources of income. Based on the results of the situation analysis, roselle plants and their processed products have the potential to be used as superior commodities that can strengthen the brand image of the Tentung tourism industry. Field observations indicate that members of the Wanalestari LMDH still face obstacles, including not yet mastering roselle cultivation techniques and roselle tea processing technology. The solution offered is through technology transfer and mentoring related to roselle cultivation and roselle tea processing. The main output of this activity is publication in the Pengabdhi Journal (Sinta Accredited) and presentation at the LPPM Unsoed National Seminar, with additional outputs in the form of LPPM Unsoed national seminar proceedings.

Keywords: LMDH Wanalestari, Bukit Tentung, rosella, rosella tea, technology transfer, mentoring

Development of the Cibalingmas Regional Development Model

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Abstract

The Cibalingmas Development Area is a strategic region located in the southern part of Southwest Central Java. This area possesses a relatively homogeneous fundamental potential, making development integration a distinct challenge related to the desired effectiveness of development. This study is conducted to formulate a development strategy for the Cibalingmas Development Area that promotes integrated development and regional interdependence. Furthermore, the implementation of this development strategy is expected to facilitate efficient regional development and promote optimal area growth. The approach used involves conducting focused group discussions (FGD) among local governments within the Cibalingmas Development Area. Based on the study results, it was found that the development of the Cibalingmas area is founded on a regional approach that leverages the potential of each supporting sub-region. The fundamental agricultural potential serves as the starting point for the development of this area, supported by the availability of transportation infrastructure that facilitates the movement of goods and people.

Keywords: regional development, regional integration, focus group discussion, Cibalingmas, development strategy

Factors Influencing the Effectiveness of the Beginner Independent Workforce Program (TKMP) Mentoring

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Abstract

Indonesia's demographic bonus presents a strategic opportunity to stimulate economic growth through the empowerment of the productive workforce, particularly the younger generation. In response to this, the Ministry of Manpower of the Republic of Indonesia launched the Beginner Independent Workforce Program (TKMP) to foster independent entrepreneurs through training and business mentoring. This study aims to identify internal and external factors influencing the effectiveness of TKMP mentoring and to evaluate its success using the Kirkpatrick evaluation model. A quantitative approach with descriptive and correlational design was employed. The study population consisted of 2,209 TKMP participants in 2024. Data were collected through questionnaires and analyzed using Pearson correlation. The results show that among internal factors, motivation and education have a significant influence on mentoring effectiveness. Meanwhile, among external factors, only the intensity of mentoring showed a significant relationship. The evaluation based on Kirkpatrick's four levels (reaction, learning, behavior, and results) indicates that participants responded very positively to the program, experienced increased knowledge, demonstrated entrepreneurial behavior changes, and achieved tangible business impacts. These findings highlight that the effectiveness of the program is strongly influenced by the intensity of mentor-participant interaction and participant motivation, as well as the need for improvements in field-based mentoring systems.

Keywords: TKMP, mentoring effectiveness, Kirkpatrick, motivation, mentoring intensity

Dietary *Spirulina Platensis* and Its Effects on Reproductive Performance in *Anguilla bicolor* McClelland

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Abstract

Among various dietary supplements, *Spirulina platensis*, has gained attention due to its rich profile of proteins, vitamins, and essential fatty acids. Its potential benefits extend to enhancing growth rates, immune function, and overall physiological health. However, its specific effects on reproductive outcomes in aquaculture species, particularly in *Anguilla bicolor* McClelland, remain underexplored. This study investigated the efficacy of dietary *Spirulina platensis* supplementation to enhance its reproductive performance, specifically measured through eye index, fin Index, gonadosomatic index (GSI), and hepatosomatic index (HSI). The research was conducted experimentally using a Completely Randomized with four treatments: feeding supplemented with *Spirulina platensis* at doses of 0, 6, 9 and 12 g/kg feed. The results showed that *S. platensis* supplementation in feed with a dose of 12 kg/kg feed increased the eye index value as one of the parameters of the gonad maturity level ($p < 0.05$), but had no effect (> 0.05) on the Fin index value, GSI and HSI of *A. bicolor*. The study found that dietary supplementation with *S. platensis* at a dose of 12 g/kg feed significantly improved the eye index, indicating enhanced gonadal maturity in *A. bicolor*. However, this supplementation did not affect the fin index, GSI, and HSI.

Keywords: Eel, gonad, mature, reproduction, spirulina

Evaluating Consumer Preferences and Feasibility Study of Kecombrang (etlingera Elatior) Probiotic Beverages

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Abstract

Kecombrang (*Etlingera elatior*) based probiotic beverages were developed as non-dairy functional foods to address lactose intolerance. This study aimed to evaluate the effects of varying *Lactobacillus casei* concentrations (1%, 3%, 5%) and fermentation durations (0, 24, 36, and 48 h), as well as to assess the business feasibility of the product. Sensory profiling and consumer preferences were analyzed using Quantitative Descriptive Analysis (QDA) and Principal Component Analysis (PCA), while business feasibility was assessed through qualitative descriptive methods combined with quantitative financial analysis. The optimal physicochemical formulation was obtained with 1% *Lactobacillus casei* and 36 h fermentation, yielding a pH of 4.09, total soluble solids of 12 °Brix, viscosity of 3.66 cP, total phenolic content of 3.35, antioxidant activity of 3.462 ppm, and LAB counts of 7.80 log CFU/mL. The formulation with 1% *Lactobacillus casei* and 24 h fermentation was most preferred by consumers, characterized by a sweet taste, strong floral aroma and flavor, low acidity, and light texture. Market and financial analyses indicated promising prospects, with an NPV of IDR 185,124,869, IRR of 16.47%, Net B/C ratio of 1.53, Payback Period of 2.42 years, and a Break-Even Point (BEP) of IDR 171,071,730 (19,008 units). Sensitivity analysis confirmed that the business remained feasible unless revenue decreased by more than 10%. These findings suggest that kecombrang probiotic beverages have strong potential as functional food products with desirable physicochemical, microbiological, sensory, and economic attributes.

Keywords: probioticbeverage, kecombrang, consumerpreference, feasibilitystudy

Accelerated Shelf Life Estimation of Roselle (*Hibiscus sabdariffa* L.) Tea Bags: Effects of Bag Type and Particle Size

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Abstract

This study investigates the shelf life of roselle (*Hibiscus sabdariffa* L.) tea bags by examining the influence of tea bag type and particle size under accelerated storage conditions. Shelf life estimation was conducted using the Accelerated Shelf Life Testing (ASLT) method, which applies the Arrhenius model to evaluate product stability over time. The experiment employed variations in bag materials (filter paper and nylon) and particle sizes (coarse and fine), stored at different temperatures to simulate accelerated aging. Key quality parameters, including moisture content, color, pH, and antioxidant activity, were monitored periodically to determine the rate of deterioration. Results indicated that both tea bag type and particle size significantly affected the degradation rate of quality attributes. Tea bags with finer particles exhibited faster quality decline, while filter paper bags provided better protection compared to nylon. Shelf life predictions based on the Arrhenius model demonstrated that optimal stability was achieved with coarse particles packaged in filter paper bags. These findings highlight the importance of packaging material and particle size selection in extending the shelf life of roselle tea bags, providing valuable insights for product development and commercial applications in the herbal beverage industry.

Keywords: Roselle, tea bags, shelf life, Accelerated Shelf Life Testing, particle size, packaging material

Climber Risk Profile Mapping and Cluster Analysis of Climbing Routes: A Case Study of Mount Sindoro, Temanggung, Central Java

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Abstract

Hiking is a popular form of tourism. However, the number of injuries and casualties resulting from inadequate preparation is a significant concern. Previous research has focused on mapping visualization, measuring calories and climbing logistics on hiking trails, and developing hiking simulations based on climate and climbing capacity. Furthermore, risk mapping on hiking trails and risk assessment models are needed. This still requires further study, given that the difficulty level of hiking in mountainous areas in Indonesia lacks clear standards. Therefore, it is necessary to develop trail risk mapping, linking climber/porter factors with environmental conditions, to provide recommended risk assessments for specific profile conditions. This can be used to evaluate existing models and assess the risk of hiking trails in general, as well as specifically for the Mount Sindoro Trail in Temanggung, Central Java. Two approaches were used. The results showed that the SVM algorithm was able to classify the risk profiles of climbers with a Support Vector Machine (SVM) accuracy of 90.35%. Meanwhile, clustering using the K-Prototype method supports optimization of trail management, facility efficiency, and decision-making for risk mitigation. This research requires further validation, to provide data-based recommendations to relevant agencies to support improvements to the hiking trail information system in Indonesia.

Keywords: Mount Sindoro; mapping; hazard risks; climbing; model

Measuring Renal Function (Knowledge and Management) among Youth Karang Taruna Member in Banyumas Regency: Instrument Development and Validation

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Abstract

Background: Chronic kidney disease (CKD) is among the most prevalent non-communicable diseases globally, with rising incidence in Indonesia, including Central Java. Despite the growing burden, knowledge and health literacy related to kidney function remain limited among youths. Karang Taruna, a community-based youth organization, presents a promising platform for advancing preventive health strategies, including CKD prevention.

Methods: This study aimed to develop a valid and reliable instrument to assess knowledge and behavior in kidney function management and to evaluate these aspects among youth members of Karang Taruna in Banyumas Regency. The quantitative phase involved instrument validation and reliability testing, adapted from NCD screening tools, followed by descriptive analysis. Time-based sampling was employed, and data were collected via Google Forms. Pearson correlation and Cronbach's alpha were used for validity and reliability testing, respectively.

Results: The knowledge questionnaire had 45 items, and the management behavior section had 21 items. On validity testing, 3 items were removed. The Cronbach's alpha was 0.722 for knowledge and 0.875 for management, showing good internal consistency. Among the 30 respondents, 100% reported a "Very Good" category in kidney function management and showed good preventive behavior. External triangulation, however, is recommended to check consistency between knowledge and behavior.

Conclusion: The instrument constructed is reliable and valid to assess knowledge and management of kidney function behavior. Findings affirm that Karang Taruna youth have high potential as kidney health promoters for public health enhancement. A future study should focus on integrating a mobile-based application to support education and self-assessment of kidney health.

Keywords: Chronic kidney disease; health behavior; instrument validation; Karang Taruna kidney function; youth empowerment

THE BIOPROSPECTION OF BACTERIAL CONSORTIUM IN COMPOSTING WATER HYACINTH

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Abstract

The fast growth of water hyacinth (*Eichhornia crassipes*) has polluted the Lereng reservoir then reducing its productivity in Grabag District, Purworejo Regency. A solution is needed to reduce pollution by utilizing water hyacinth as compost and organic fertilizer microbiologically. A bacterial consortium consisting of isolates LG 73, LG 101, LG 113, LG 127, and SA 126 has been screened by the Microbiology Laboratory of the Faculty of Biology. They are capable in various hydrolytic enzymes, produce IAA, fix N, and dissolve P. The purpose of this study was to determine the effect of microbial decomposer applications on water hyacinth.

The experiment was conducted over a 45-day incubation period and the bacterial consortium has composted the water hyacinth. The substrate was initially treated with goat manure and lime. The natural composted water hyacinth served as a control. During incubation the compost temperature increased to 47°C at the beginning, then decreased on days 8-9, and then increased again (39.44-45.56°C) until day 16. The compost temperature then stabilized ($\pm 29^{\circ}\text{C}$) until the end of incubation (45 days). The compost pH decreased (4-5) in the first week and increased (4.5-6) in the following weeks. Meanwhile, the compost moisture decreased (4-7%) at the end of incubation. The texture of the compost resulted became more crumb with black color and earthy odor. Water hyacinth decomposition is prospective for sustainable agriculture.

Keywords: water hyacinth, composting, bacterial consortium

THE IMPACT OF CROSS-BORDER COMMUNITY ENGAGEMENT ON REGIONAL COOPERATION: A QUALITATIVE ANALYSIS OF THE UNSOED INTERNATIONAL KKN PROGRAM

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Abstract

The "people-to-people connectivity" initiative stands as a strategic pillar for ASEAN integration; however, its implementation through cross-border community service programs remains underexplored. This study aims to fill that gap by analyzing a community service program as an instrument of public diplomacy. Using a qualitative approach with a descriptive case study design, this research examines the logbook of the Universitas Jenderal Soedirman (UNSOED) International Community Service Program. The program was held in An Nhon Tây Village, Vietnam, from July 5 to August 2, 2025, involving students from Indonesia, Vietnam, and Malaysia. Findings indicate that the program successfully achieved three strategic outcomes: enhancing local children's educational capacity, contributing to village infrastructure, and fostering cross-border interpersonal networks. These results demonstrate that cross-border community service programs serve as an effective model for track-two diplomacy, significantly contributing to the development of soft power and strengthening ASEAN cooperation. In conclusion, this research argues that higher education institutions can play a crucial role as non-state actors in promoting regional integration.

Keywords: Public Diplomacy, ASEAN Cooperation, Cross-Border Community Engagement, Higher Education, Soft Power

Developing A Model of Side Friction Effect on Average Speed Change in Urban Zone-Industrial Area

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Abstract

Side friction is an inseparable component of traffic. Urban roads have a high potential for significant side friction due to the intensity of roadside activities. Elevated levels of side friction greatly affect road performance, particularly reflected in the volume-to-capacity (VC) ratio and the average vehicle speed. The study area is an urban zone characterised by trade and service activities alongside labour-intensive industrial operations. These activities contribute to high side friction and cause significant traffic delays, especially during peak hours.

This research aims to identify the impact of side friction on the performance of Jl. Jend. A. Yani in Purbalingga. To achieve this, an analysis was conducted on the effect of high-intensity pedestrian crossings on the spatial pattern of average speed changes. Furthermore, considering the high accident risk involving pedestrians—especially those crossing the street—driver behaviour patterns at crossing points were also examined. The analysis employed a regression approach to model the relationship patterns, supplemented by correlation analysis to assess the strength of association between independent and dependent variables.

The required data included primary measurements of vehicle speeds at various distances relative to the crossing points, counts of crossing events within observation time units, and pedestrian volume data. Data collection was conducted using traffic recording methods selected for their precision and accuracy. Through this study, it is expected to provide recommendations for traffic management at the study location and to identify appropriate road equipment to achieve safer road conditions.

Keywords: delay, side friction, urban zone

INDONESIA'S RICE SUFFICIENCY: AN ANALYSIS OF AVAILABILITY TRENDS TOWARD SUSTAINABLE FOOD SECURITY

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Abstract

Sustainable food security represents a strategic issue that has become a development priority for Indonesia, as outlined in the National Long-Term Development Plan (RPJPN) 2025-2045. Rice serves as one of the strategic commodities playing a crucial role in achieving national food security. This study aims to analyze rice availability in efforts to achieve sustainable food security in Indonesia. The research methodology employs quantitative descriptive analysis using secondary data on rice production from 1995-2024. Rice availability analysis utilizes the RNett (R Net) approach, which calculates the ratio between milled dry grain (GKG) production and rice availability for national consumption. The analysis results indicate that Indonesia's GKG production has experienced an increasing trend from 49.744 million tons in 1995 to 53.142 million tons in 2024, despite fluctuations in certain periods. Rice availability also demonstrates a similar pattern with an increase from 43.004 million tons to 45.342 million tons during the same period. The RNett analysis indicates that Indonesia has achieved rice production surplus with a sufficiently stable availability ratio to meet domestic consumption needs. Nevertheless, several challenges need to be anticipated, including production fluctuations due to extreme weather factors, agricultural land conversion, and increasing demand alongside population growth.

Keywords: rice availability, food security, RNett, rice production, sustainable

Unlocking the Power of Multilateral Movement : Examining Elementary School Students Based on Territories Utilizing Fundamental Movement Skills Method

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Abstract

Multilateral movement skills are essential for standards and basic competencies in the school curriculum. Territorial factors are considered to play an essential role in determining the multilateral movement's ability. This study measures and compares elementary school students' sports multilateral movement skills in lowland and highland areas. This study intends to emphasize the influence of territorial factors on the ability of fundamental motor skills in sports. The research method uses quantitative descriptive with *an ex-post facto* approach. The research instrument uses *the Fundamental Movement Skills* test to measure the level of sports movement skills in students divided into lowland and highland areas. The study results show that the multilateral movement skills of elementary school students based on *Fundamental Movement Skills* in highland and lowland are in a Good Category. Based on the calculations, the significance value of the t-test was obtained at 0.682. This score shows no significant difference in multilateral movement skills between high and lowland elementary school students. This study is expected to be a reference for educators and researchers developing a more holistic and responsive approach to students' needs in the learning movement.

Keywords: Fundamental Movement Skill, Physical Fitness, Motor Educability, Play Activities

Development of Low-Fat Cream Cheese Powder Using Natural Preservative Modification And Fat Replacer to Extend Shelf Life

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Abstract

Cream cheese is a type of processed cheese produced without ripening or fermentation, characterized by a relatively short shelf life and a high content of saturated fatty acids. This study aimed to develop low-fat cream cheese powder by utilizing fat replacers to improve texture, nutritional composition, and sensory properties, combined with the addition of 12.5% kecombrang (*Etlingera elatior*) extract as a natural preservative to enhance antioxidant activity and functional value. Converting cream cheese into powder form is expected to improve textural stability during storage and distribution. The experiment was arranged in a Completely Randomized Design (CRD) with a factorial layout, testing fat replacer concentrations of 1%, 1.5%, 2%, and 2.5%. Data were analyzed using Analysis of Variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level. The results showed that different fat replacer concentrations had a significant effect ($p < 0.05$) on protein, fat, yield, viscosity, and sensory properties, particularly taste and overall acceptability of cream cheese powder.

Keywords: creamcheesepowder; kecombrang(*Etlingeraelatior*); fatreplacer; naturalpreservative; shelf-life

Indigenous Fungi from Community-Based Agroforestry on Calcareous Drylands in Southwest Sumba, Indonesia: Potential for Batik Dye Waste Biodegradation

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Abstract

Community-based agroforestry areas on calcareous drylands in East Nusa Tenggara represent extreme environments characterized by low nutrient availability, prolonged drought, and poor soil quality. Such conditions support the presence of indigenous microorganisms, particularly fungi, with high physiological adaptability. This study aimed to isolate and characterize indigenous fungi from four locations in Sumba Barat Daya Regency, namely Kadu Eta Village (North Kodi District) and Kalaki Kambe, Raba Ege, and Waimangura Villages (West Wewewa District). Soil samples were collected from community-managed agroforestry sites in each location, followed by fungal isolation using Potato Dextrose Agar (PDA). All isolates obtained were subsequently tested for their ability to grow on media enriched with batik dye effluent as a simulated pollutant condition. The results revealed that all fungal isolates from the four villages were able to grow well on batik dye-containing media. These findings indicate that indigenous fungi from agroforestry areas on calcareous drylands possess strong adaptive capacities to harsh environmental conditions and hold significant potential as bioremediation agents for textile industrial waste, particularly batik dye effluents.

Keywords: Agroforestry, Batik dye waste water, biodegradation, Indigenous fungi, Sumba

Trade-offs between Conservation Agriculture and Economic Needs: A Case Study of Coffee Farmers' Perceptions in the Banjarnegara Highlands, Indonesia

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Abstract

The highlands of Banjarnegara Regency are an area prone to landslide disasters, caused by topographical factors, geology, soil type, rainfall, and human activities. Coffee cultivation in the highlands, as part of human activity, offers a potential mitigation solution that can generate economic value while simultaneously serving as a conservation effort. This study aims to explore the dynamics of decision-making among coffee farmers in the Banjarnegara highlands, specifically those who are members of cooperative institutions. The method used is a qualitative case study with purposive sampling of key stakeholders from government institutions, coffee producer cooperatives, and field assistants. Data collection techniques utilized deep interviews, followed by content analysis. The results of this study successfully identified important trade-offs that shape farmer behavior: (1) long-term land security versus short-term income; (2) ideal cultivation practices versus chemical-input-based intensification; (3) loyalty to cooperative institutions versus market opportunism; and (4) involvement in agricultural programs versus skepticism born from past failures. These findings indicate that farmers do not reject conservation programs; rather, they engage in rational calculations within the context of their risk management and livelihood security. This discovery recommends that conservation-based agricultural programs and policies must take the farmers' perspective into consideration. Measures such as Payments for Ecosystem Services (PES) and strengthening institutional capacity are likely to address the trade-offs associated with conservation-based agricultural efforts.

Keywords: Agricultural Trade-off, Conservation Agriculture, Cooperative Institution, Farmer Rationality

The Effectiveness of Small-Sided Games Training on Improving the Physical and Basic Technical Abilities of Soccer Players at the UKM Fikes Unsoed

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Abstract

Introduction. Football is a team sport that requires an integrated combination of physical, technical, tactical, and cognitive abilities within dynamic and complex game situations. Small-Sided Games (SSG) have been proposed as an integrated training approach to simultaneously stimulate physical capacity and technical skills. This study aimed to examine the effectiveness of SSG in improving physical fitness (endurance and speed) and fundamental technical skills (dribbling, passing, and shooting) of university soccer players, as well as to compare the effects of 3v3 and 4v4 formats. Method. A quasi-experimental design with a Nonequivalent Control Group Design was employed. Participants were male student-athletes from the soccer unit of Universitas Jenderal Soedirman, purposively assigned into two groups using ordinal pairing. The intervention consisted of a six-week structured SSG training program. Physical endurance was measured using the Multistage Fitness Test, speed with a 30-meter sprint, and technical skills with standardized dribbling, passing, and shooting tests. Data were analyzed using paired and independent t-tests at a 0.05 significance level. The results revealed that both 3v3 and 4v4 SSG significantly improved physical and technical performance. The 3v3 format provided greater stimulus for endurance and shooting under restricted space, while the 4v4 format yielded superior improvements in dribbling and passing due to increased tactical complexity and broader spatial dynamics. Overall, the 4v4 format demonstrated higher effectiveness in enhancing both physical fitness and technical proficiency simultaneously. Conclusion, SSG—particularly the 4v4 format—represents an efficient and evidence-based training method for developing physical and technical performance in university-level soccer players.

Keywords: Football, Small-Sided Games, Physical Fitness, Technical Skills

Physicochemical Characteristics of Ripened Cheese with the Addition of Kecombrang (*Etlingera elatior*) Powder as a Milk-clotting Agent

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Abstract

Milk is a highly perishable livestock product due to its high water content, thus requiring appropriate processing to extend its shelf life. Cheese is one of the most widely consumed dairy products and offers great potential for innovation through the incorporation of natural ingredients. The kecombrang flower (*Etlingera elatior*), which contains bioactive compounds such as flavonoids, anthocyanins, and polyphenols, has antioxidant and antimicrobial properties that can be utilized in dairy processing. This study aimed to evaluate the effect of adding kecombrang flower extract at different concentrations (0%, 2.5%, 5%, and 7.5%) on the physicochemical (pH and yield) and sensory evaluation (color, aroma, taste, and texture) characteristics of cow's milk cheese. Data were analyzed using two-way ANOVA followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level. The results showed that the addition of kecombrang flower extract significantly affected both the physicochemical and sensory properties of cow's milk cheese. Increasing extract concentrations slightly decreased the pH value and significantly reduced yield. Sensory evaluation indicated that the highest overall acceptance was achieved in cheese with 5% kecombrang extract after 3 days of ripening, which produced more desirable color, aroma, taste, and texture compared to other treatments. It can be concluded that incorporating 5% kecombrang extract with 3 days of ripening is optimal for improving sensory quality while maintaining acceptable physicochemical properties. These findings highlight the potential of kecombrang flower extract as a natural additive to enhance the quality, shelf life, and market competitiveness of dairy products, particularly in supporting small and medium-sized enterprises (SMEs) in the food industry.

Keywords: cheese, kecombrang powder, ripened cheese, milk-clotting agent

SHORELINE CHANGE ANALYSIS USING SATELLITE IMAGERY: A CASE STUDY OF THE CILACAP COAST

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Abstract

This study examines shoreline dynamics at three study sites along the Cilacap coast (Samudera Cilacap Fishing Port, Karangandri Steam Power Plant Port, and Bunton Steam Power Plant Port) over the period 2010–2020. Using multi-temporal Landsat and Sentinel imagery processed in Google Earth Engine with NDWI, annual shorelines were extracted and analyzed with the Digital Shoreline Analysis System (DSAS) to derive shoreline change rates. The results demonstrate that multi-year shorelines have been detected and visualized. Spatial patterns of erosion and accretion are already apparent among the three locations, and the 2010–2020 data window provides adequate temporal resolution for medium-term assessment and initial calibration.

Keywords: shoreline change, satellite imagery, NDWI, DSAS, Cilacap coast

How can Farmers in Cilongok District, Banyumas Regency Adapt to Climate Change?

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Abstract

Farmers' households are considered to be vulnerable to climate change due to their high degree of reliance on unpredictable natural conditions. The economy of the region, and the majority of the community in Cilongok Subdistrict, is dependent on the food crop sector for sustenance. The present study aims to analyse the vulnerability of farmers' households in two villages in Cilongok to climate change, and to identify adaptation strategies. The research design employed a sequential explanatory (quantitative-qualitative) approach. The analysis of livelihood vulnerability was conducted using quantitative analysis with the Livelihood Vulnerability Index (LVI), while the analysis of adaptation was conducted qualitatively using the Sustainable Livelihood Approach (SLA). The results of the study demonstrate that the level of vulnerability of rice farmer households in the villages of Jatisaba and Panusupan to climate change, as measured by the Livelihood Vulnerability Index (LVI), is moderate. In order to address this vulnerability, farmer households implement adaptation strategies, including income diversification across both the agricultural and non-agricultural sectors.

Keywords: livelihood vulnerability, climate change, rice farmers, adaptation strategies, LVI.

The Influence of Entrepreneurial Self-Efficacy on Green Entrepreneurial Intention: The Moderating Role of Perceived Social Support

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Abstract

Global environmental issues have made us aware of the importance of sustainable development, such as green entrepreneurship. This study aims to examine the influence of entrepreneurial self-efficacy on green entrepreneurial intention, with perceived social support as a moderating variable, among participants in the Student Entrepreneurship Program at Jenderal Soedirman University (Unsoed). This quantitative study used a questionnaire as the data collection method. Data from 103 respondents were selected using simple random sampling. Multiple regression analysis showed that entrepreneurial self-efficacy had a positive and significant effect on green entrepreneurial intention, and perceived social support can act as a moderating variable, strengthening the influence of entrepreneurial self-efficacy on green entrepreneurial intention. Implications are provided based on the results of this research.

Keywords: Green Entrepreneurial Intention, Entrepreneurial Self Efficacy, Perceived Social Support, Unsoed, Student Entrepreneurship Program

Usability Test of The Dianing-App for a Community Empowerment and Sustainable Hyperbilirubinemia Early Detection in Rural Areas

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Abstract

The current infant mortality rate in Indonesia is 26.9 per 1,000 live births. Hyperbilirubinemia is one of the leading causes of infant mortality in Indonesia. Hyperbilirubinemia is detected by health workers through a physical examination of the baby's skin color and sclera. In previous research, researchers developed Dianing-App, an Android-based application for conducting physical examinations on babies with hyperbilirubinemia, providing more accurate, objective, affordable, and easy-to-use results. This study evaluated the usability of the Dianing-App on mothers with newborns (neonates). Inclusion criteria for this study were mothers with newborns aged 0-28 days, having an Android-based smartphone, and being willing to participate as respondents. Exclusion criteria for this study were aspiration, infection, cardiac disease, shock, and infant's death. For the usability evaluation, 24 respondents were recruited from postpartum ward and neonatal intensive care unit (NICU). This study used the USE Questionnaire. The response rate was 92%, and the majority of respondents reported that the Dianing-App had excellent usability (86.82%). Most respondents found that Dianing-App tailored to their needs (86.41%), easy to use (86.90%), easy to learn (86.65%), and satisfying (87.31%). Respondents informed that the Dianing-App was very useful for hyperbilirubinemia's early detection and prevention among newborn in rural areas.

Keywords: Early detection, hyperbilirubinemia, sustainable development, community empowerment, rural area

Dynamic Capabilities of Eco-Friendly MSMEs in Embracing Digital Marketing: Evidence from Batik Ecoprint in Banyumas, Indonesia

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) are essential drivers of economic growth, yet many face challenges in adapting to rapid digital transformation. This study explores the role of dynamic capabilities in enabling eco-friendly MSMEs to embrace digital marketing as a strategy for competitiveness and sustainability. Using the case of *Batik Ecoprint* producers in Banyumas, Indonesia, the research applies Teece's dynamic capability framework, *sensing, seizing, and transforming* to analyze how small businesses identify market opportunities, leverage digital tools, and reconfigure their business models. A participatory action approach was employed through training, mentoring, and technology adoption, focusing on live streaming commerce and customer service enhancement. The findings reveal that the sensing capability is reflected in entrepreneurs' awareness of global demand for sustainable products, while seizing is demonstrated through the adoption of live streaming platforms (Instagram, TikTok) and digital branding. The transforming capability emerges in business model adjustments, including packaging innovation and hybrid offline–online marketing. This study contributes to the literature on sustainable entrepreneurship and provides practical insights for policymakers and practitioners in strengthening MSME resilience. The results highlight that dynamic capabilities are critical for digital transformation and ensuring long-term competitiveness in the era of the green economy.

Keywords: dynamic capabilities; MSMEs; digital marketing; sustainable entrepreneurship; batik ecoprint

Relationship Between Intelligence Quotient (IQ) and Body Mass Index (BMI) with The Motor Skills In Junior Volleyball Athletes

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Abstract

This study examines the correlation between Intelligence Quotients, and Body Mass Index with the Motor Skills of Junior Volleyball Athletes in Karanggintung Village. This study identified factors related to motor skills in junior volleyball athletes. The research method uses correlational statistics. The research instrument utilizes IQ, BMI, and FMS Motor tests. The sample of this study was junior volleyball athletes in Karanggintung Village, with a total of 20 people, consisting of 10 male athletes and ten female athletes. The SPSS applications are accomplished for data analysis through prerequisite, normality, and linearity tests. To find out the level of liaison between variables using a correlation test. The results showed that junior volleyball athletes' Intelligence quotient (IQ) level had an average of 111.95 or in the High Average category. Body Mass Index (BMI) results have an average of 19,071 or in the Normal Body Mass Index (BMI) category. Through the Fundamental Movement Skills (FMS) test, junior volleyball athletes have an average score of 2.93 or are in the Good category. The study's conclusion supports the sustainability of coaching the achievements of potential volleyball athletes and is supported by training programs and various studies on the determinants of volleyball performance.

Keywords: Intelligence Quotients, Body Mass Index, Motor Skills, Volleyball, Junior Athlete

Microalgae Supplementation as a Food Additive on Pepsin Activity and Body Composition of Tilapia (*Oreochromis niloticus*)

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Abstract

Tilapia (*Oreochromis niloticus*) is highly sought after by the public due to its savory, thick flesh with clustered spines. Enzyme activity and body composition can be increased by providing food additives with high nutritional composition and containing bioactive compounds, such as *Spirulina platensis* and *Chlorella vulgaris* supplementation in feed. This study aims to determine the effect and obtain the composition of microalgae supplementation that can increase pepsin activity and tilapia body composition. Experimental research used a completely randomized design. The treatments tested were: P0 (control, fish fed commercial feed); P1 (*Spirulina platensis* supplementation 12 g.kg⁻¹ feed); P2 (supplementation of *Chlorella vulgaris* 8 g.kg⁻¹ feed), P3 (supplementation of a combination of *Spirulina platensis* 6 g.kg⁻¹ + *Chlorella vulgaris* 4 g.kg⁻¹ feed) and P4 (supplementation of a combination of *Spirulina platensis* 4 g.kg⁻¹ + *Chlorella vulgaris* 6 g.kg⁻¹). Feeding was done twice a day at 3%. The treatments were given for 56 days. Data were analyzed using ANOVA, if there were significant differences, continued with the Tukey test. The results showed an increase in enzyme activity in the stomach and an increase in body composition ($P < 0.05$) with the best treatment being supplementation of *Spirulina platensis* 6 g.kg⁻¹ + *Chlorella vulgaris* 4 g.kg⁻¹. Pepsin activity for protein digestion and body composition of tilapia can be increased by single or combined supplementation of *Spirulina platensis* and *Chlorella vulgaris*.

Keywords: Body composition, *Chlorella vulgaris*, *Oreochromis niloticus*, Pepsin activity, *Spirulina platensis*.

Leading with Vision: The Role of Transformational Leadership in Enhancing Differentiated Learning Readiness among Economics Teachers

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Abstract

The implementation of the Independent Curriculum requires economics teachers to be able to implement differentiated learning according to the increasingly diverse needs of students. However, teacher readiness often faces obstacles, ranging from time constraints to conventional teaching methods and difficulties in managing heterogeneous classes. This study aims to analyze the influence of transformational leadership on economics teachers' readiness for differentiated learning. The method used was a quantitative survey involving 321 high school economics teachers in Central Java as respondents. Data were collected through a structured questionnaire and analyzed using Structural Equation Modeling (SEM) techniques with the assistance of SmartPLS 4 software. The results showed that transformational leadership positively and significantly affected readiness for differentiated learning. Economics teachers who demonstrated transformational leadership characteristics, such as providing inspiration, motivation, and encouraging innovation, were better prepared to design and implement learning strategies that suited the diverse needs of students. These findings emphasize the importance of strengthening transformational leadership in teacher professional development programs, so that they can act as adaptive, creative, and innovative agents of change in the successful implementation of the Independent Curriculum. Theoretically, the results of this study enrich the literature on transformational leadership in the context of economics education. Practically, this research becomes the basis for formulating strategies to increase teacher capacity through leadership development and learning differentiation training.

Keywords: Transformational Leadership, Teacher Readiness, Differentiated Learning, Economics Teachers

Deixis in Student Conversational Discourse

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Abstract

This research aims to reveal how deixis is used in student conversational discourse. Based on the assumption that Indonesian is the main means of communication, understanding the knowledge scheme also depends on the deixis that exists in the practice of using the language. The use of deixis in conversational discourse is the basis for understanding student interaction patterns. The theoretical perspective of discourse analysis is used based on students' social heterogeneity background through exploring its components, including context, topic, participants and knowledge schemes. This research method starts from collecting data, analyzing data using the matching method, and presenting the results of the analysis. The research results show that deixis can be patterned on a number of student conversation discourse data in various interactional situations in the social environment.

Keywords: conversational discourse, deixis, student, functional

Contribution of Waste Management Results to Revenue at The Integrated Waste Processing Facility Based on Environment and Education Banyumas

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Abstract

The Integrated Waste Processing Facility Based on Environment and Education Banyumas (TPA BLE) is a modern waste management facility that implements the zero waste to landfill concept with its main product being RDF (Refuse Derived Fuel). This study aims to analyze the contribution of RDF to the operational revenue of the Banyumas BLE landfill. The method used is quantitative descriptive, utilizing primary data through questionnaires and interviews, as well as secondary data from reports and related literature. The variables observed include operational costs, production volume, selling price, and total revenue. The results show that the revenue from RDF sales is able to cover operational costs, resulting in a contribution margin of IDR 23,664,878,823 with a contribution margin ratio of 93.12%. This finding confirms that RDF has a significant contribution in supporting fixed costs and generating profits, while strengthening the operational sustainability of the Banyumas BLE landfill.

Keywords: BLE landfill, contribution margin, operating costs, RDF

Changes in Meaning in Conversations on Social Media: A Semantic Study

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Abstract

This research analyzes the phenomenon of language meaning shifts that occur in social media conversations. The development of digital technology and massive online interaction has created a new communication environment where language undergoes significant modification. A semantic study approach is employed to understand how the lexical and grammatical meanings of a word or phrase can shift, broaden, or even change completely when used on platforms such as Twitter, Instagram, and TikTok. The research method employs a descriptive qualitative approach, with primary data comprising conversations, comments, and viral posts from various social media platforms. The analysis focuses on identifying patterns of meaning change, such as meaning broadening (a word's meaning becomes more general), meaning narrowing (a word's meaning becomes more specific), and complete meaning change (a word's meaning becomes the opposite of or irrelevant to its original meaning). The results show that factors such as minimal non-verbal context, the use of abbreviations and acronyms, and the influence of trends and popular culture play a significant role in triggering these meaning shifts. This phenomenon not only affects communication comprehension but also reflects cultural dynamics, linguistic creativity, and user adaptation to the digital medium. Thus, this research contributes to a deeper understanding of the evolution of language in the digital age and its implications for linguistics, particularly in the field of semantics.

Keywords: changes in meaning, social media conversations, semantic studies

Business Model Innovation for Student Startups: A Study on Inova Creative Solutions in Packaging and Selling Organic Coconut Sugar Online

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Abstract

This research presents the analysis and strategic blueprint for a student startup business model focused on premium organic coconut sugar products through a Business Model Innovation (BMI) approach. The proposed business model is called "Inova Creative Solutions (ICS)" with the product name "Sakara." ICS is not solely focused on product sales but also aims to create a new value proposition that transforms agricultural commodities into health-focused lifestyle products.

The key competitive advantage of this model lies in integrated innovation across all business elements. First, the proposed partnership innovation involves establishing a strategic and direct relationship with the Central Agro Lestari Purbalingga Joint Business Group, a coconut sugar farmer group that has received numerous organic coconut sugar certifications from international institutions. This partnership significantly reduces supply and quality risks and empowers the student startup to build a strong narrative regarding the product's origins. Second, the value proposition innovation centers on offering a product that is more than just a sweetener. Organic coconut sugar is repackaged as a health product with a low glycemic index and rich in minerals, supported by transparent stories about the farmers and the sustainable production process. Third, this model adopts Channel Innovation through an omnichannel approach, combining the broad market reach of leading e-commerce marketplaces and the e-commerce platform developed by researchers under the name "SiwurShop." Fourth, revenue stream innovation includes the implementation of a "subscribe and save" subscription model to generate recurring revenue and increase customer lifetime value (LTV), a strategy successfully implemented by many global companies.

Market analysis indicates a strong demand trend for organic coconut sugar in both domestic and international markets, with Indonesia's export value experiencing significant growth. Competitors' threats are relatively low, and the wide price variation in the online market indicates a clear niche for premium products with superior quality, packaging, and storytelling. The analysis demonstrates that ICS is a robust and viable business model for students, designed to address resource constraints through strategic partnerships and possessing a difficult-to-imitate competitive advantage.

Keywords: Business Model Innovation, Business Model Canvas, Inova Creative Solutions, Organic Coconut Sugar

Morphological Characterization of Laeliinae (Orchidaceae) Genotypes

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Abstract

The Orchidaceae family is known as one of the most diverse groups within the Angiospermae, with extensive variation in morphology, ecology, and adaptation strategies. Within this family, the subtribe Laeliinae contains approximately 40 genera of highly ornamental plants. This uniqueness and diversity make Laeliinae a potential candidate for plant breeding programs, particularly through hybrids with novel, superior traits. One effort to improve genetics in Laeliinae is through hybridization. Success in hybridization relies heavily on identifying appropriate genotypes to inspire parent selection. This identification is carried out through qualitative and quantitative characterization, which play a crucial role in determining the potential of a genotype as a source of parentage. Research results indicate that genotypes within Laeliinae possess a very broad genetic diversity, providing a valuable source of germplasm for the development of superior hybrids. This genetic richness allows breeders to select parents for specific purposes, particularly enhancing the aesthetic value of flowers. Therefore, the identification and evaluation of genotypes within the subtribe Laeliinae are key steps in supporting plant breeding programs.

Keywords: Cattleya, identification, similarity

Measurement of Chicken Slaughterhouse Behavior toward Halal Certification Using Cluster Analysis

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Abstract

Minister of Religious Affairs Regulation (PMA) No. 464 of 2020 concerning "Types of Products Requiring Halal Certification" stipulates that slaughterhouse services must be halal certified. The implementation of mandatory halal certification for chicken slaughterhouses will expand in the future, as this industry is the upstream supplier of halal raw materials. The objectives of this applied research are assessing chicken slaughterhouse clusters based on the behavior of halal certification. The research location was at Banyumas Regency during the second semester of 2025. At first, a focus group discussion was conducted to investigate the perception of halal certification in the slaughterhouses regarding the certification process, hygiene, sanitation, and animal welfare. Then, a total of 135 of the owners or those responsible at the slaughterhouses were asked about their attitude towards halal certification. The data was analyzed using cluster analysis. The research shows that There are three clusters. Cluster 1: "Group Leaders" This cluster demonstrates excellence in almost all aspects of slaughterhouses practices. This cluster can serve as a model for other slaughterhouses in implementing halal assurance systems. Cluster 2 was named as "Compliance Learners". The largest group with medium implementation characteristics. This cluster is a primary target for capacity-building programs with 80 slaughterhouses (59.3% of the total), improvements in this group will have the greatest impact on the industry as a whole. Cluster 3 named as "Partial Compliance". The group with the lowest implementation.

Keywords: Animal Welfare; Halal Assurance System; Hygiene; Sanitation; Meat

Room-Temperature Storage in Skim Milk–Glucose Diluent Reduces Motility, Fertility, and Fertile Period of Kampung Rooster Sperm

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Abstract

This study investigated the effect of room-temperature storage in skim milk diluent supplemented with 50 mM glucose on the motility, fertility, and fertile period of Kampung rooster sperm. Ejaculates were collected from ten Kampung roosters (approximately 15 months old) and used to inseminate thirty commercial laying hens for fertility and fertile period evaluation. The experiment was arranged in a completely randomized design with three storage durations: P0 = 0–10 min, P1 = 30–40 min, and P2 = 50–60 min, each inseminated into ten hens. Mean sperm motility (%) for P0, P1, and P2 was 85.0 ± 0.0^a , 79.0 ± 3.33^{ab} , and 60.0 ± 3.33^c , respectively. Fertility rates were 82.25 ± 8.12 , 76.42 ± 7.63 , and 60.25 ± 9.61 , while fertile periods were 12.50 ± 2.10 , 9.56 ± 3.40 , and 8.76 ± 2.65 days. Statistical analysis confirmed a significant negative effect ($P < 0.05$) of storage duration on sperm motility, fertility, and fertile period. These results demonstrate that prolonged room-temperature storage leads to a marked decline in reproductive parameters, emphasizing the need for timely use of sperm in artificial insemination programs under tropical conditions.

Keywords: Kampung rooster, room-temperature storage, skim milk–glucose diluent, sperm motility, fertility, fertile period

Molecular Identification of Pathogenic Bacteria in Diseased Cachama (*Colossoma macropomum*) Cultured in Banjarnegara, Indonesia

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Abstract

Pathogenic bacteria remain a persistent threat to aquaculture systems worldwide. However, reports of bacterial infections in the aquaculture of Cachama (*Colossoma macropomum*) are relatively scarce. This study aimed to identify bacterial isolates from diseased Cachama cultured in Banjarnegara Regency, Central Java, using 16S rDNA sequencing. Fish exhibiting clinical signs of bacterial infection were sampled, and bacterial isolates were obtained from internal organs, specifically the liver and kidney. Genomic DNA from the isolates was subjected to 16S rDNA amplification and sequencing. Molecular identification was performed through BLAST analysis and phylogenetic reconstruction. Four bacterial isolates were successfully identified, including the well-known opportunistic pathogen in freshwater aquaculture, *Aeromonas hydrophila*. The remaining three isolates exhibited high sequence similarity (>99%) to members of the genera *Klebsiella* (two isolates) and *Enterobacter*, which have been previously reported as fish-associated pathogenic bacteria. These findings suggest that bacterial infections in Cachama may involve multiple pathogenic species, highlighting the need for broader surveillance and targeted management strategies in tropical aquaculture systems.

Keywords: Bacterial diseases, *Colossoma macropomum*, 16S rDNA, Identification

The Growth Dynamics and Blood Profile of Thin-Tailed Sheep Supplemented with Urea Multimineral Molasses Block (UMMB) Plus as an Effort to Improve Rumen Ecology

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Abstract

The study aimed to develop technology for producing Urea Multimineral Molasses Block (UMMB) plus phytonutrients to enhance livestock productivity by examining the effectiveness of incorporating phytonutrients/phytobiotics as components of UMMB in ruminant feed on improving rumen ecology in vivo through enhanced metabolic functions in the rumen. The results of the first year of research showed that temulawak phytobiotics were able to reduce the number of protozoa and effectively increase dry matter digestibility, while pegagan supplementation in UMMB increased crude fiber digestibility. Both curcuma and gotu kola in UMMB increased organic matter digestibility in vitro. Based on the best results from the first year of research, the second year of research examined in vivo the most effective use of phytobiotics, such as temulawak and pegagan, and a combination of both as components of UMMB in their feed. The materials used were 20 weaned sheep, basal feed (PK content 15%, TDN 60%), UMMB with phytobiotics (containing curcuma and gotu kola). The design used was a completely randomized design, with treatment P0: basal feed with UMMB without phytobiotics, P1: feed + 1% UMMB (curcuma), P2: feed + 1% UMMB (gotu kola), P3: feed + 1% UMMB (curcuma + gotu kola), repeated 5 times. The follow-up test used was Orthogonal Contrast. The variables measured were PBBH, growth dynamics, and sheep blood profiles. The results showed that UMMB plus Phytobiotic supplementation in feed showed no significant increase in body weight, growth dynamics, and blood profiles in terms of erythrocyte, leucocyte, HB, platelet, and HCT counts. Based on the results, it concluded that the supplementation of UMMB plus phytobiotic showed similar growth dynamics, although the addition of gotu kola to UMMB showed the most stable growth. The addition of phytobiotic did not show any changes in the general blood condition.

Keywords: UMMB, phytobiotic, growth profile, blood profile, sheep

The Effect of Probiotic Candidate Bacteria on The Immune Response of Vannamei Shrimp (*litopenaeus vannamei*)

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Abstract

Pacific white shrimp (*litopenaeus vannamei*) is a leading aquaculture commodity but often faces challenges such as water quality deterioration, low feed efficiency, and pathogen infections. One promising approach to address these issues is the application of probiotics. This study aimed to evaluate the effects of *Bacillus cereus*, *Enterococcus hirae*, and *Weissella confusa* on shrimp growth and immune response. Probiotics were supplemented in feed (3 mL/kg), and growth performance (absolute weight gain and specific growth rate/SGR) as well as nonspecific immune responses were assessed after challenge with *Vibrio parahaemolyticus*. The results showed that *Bacillus cereus* produced the best growth performance, with the highest absolute weight gain and SGR, significantly different from other treatments. In contrast, *Weissella* sp. was most effective in enhancing immunity, as indicated by an increase in total haemocyte count (THC) from $3.85 \pm 0.41 \times 10^6$ cells/mL at day 3 to $4.20 \pm 1.05 \times 10^6$ cells/mL at day 7, phagocytic activity peaking at day 5 ($7.79 \pm 0.53\%$) and day 7 ($7.71 \pm 0.55\%$), and phenoloxidase activity reaching its maximum at day 5 (0.412 ± 0.353). Water quality remained within optimal ranges according to SNI 01-7246-2006. In conclusion, *Bacillus cereus* is more effective for growth, while *Weissella* sp. enhances immune defense, suggesting that probiotic combinations may support healthier and more sustainable shrimp aquaculture.

Keywords: *Litopenaeus vannamei*; Probiotics; *Bacillus cereus*; *Enterococcus hirae*; *Weissella confusa*

Development of A Smartphone-Based Arrhythmia Intervention Model on The Quality of Life of Cardiac Surgery Patients: A Research and Development

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Abstract

Background: Arrhythmias are cardiac rhythm disturbances that may be life-threatening in perioperative cardiac surgery. Their impact spans the preoperative, intraoperative, and postoperative phases, ranging from mild to severe, potentially compromising patient outcomes and quality of life.

Objective: This study aimed to develop and validate a smartphone-based arrhythmia intervention model to improve the quality of life of patients undergoing valve surgery.

Methods: A Research and Development (R&D) design was applied using the ADDIE framework (Analysis, Design, Development, Implementation, Evaluation). Expert validation, reliability, and feasibility testing were conducted, including a pilot test with 10 participants. Instruments consisted of expert validation checklists, observation sheets, and the USE (Usefulness, Satisfaction, and Ease of use) questionnaire.

Results: The smartphone-based arrhythmia intervention model was successfully developed. Expert review by two raters yielded a Kappa coefficient of 0.89, indicating high inter-rater agreement and reliability. The Item-Content Validity Index (I-CVI) was 1.00, demonstrating excellent content validity. Feasibility testing produced a mean score of 95%, suggesting the model is highly acceptable and practical for clinical use.

Conclusion: The smartphone-based model is feasible, reliable, and valid as a supportive tool for nursing interventions in managing perioperative arrhythmias in cardiac surgery patients. Its user-friendly interface facilitates early identification of contributing factors and enhances perioperative nursing care.

Keywords: Arrhythmia, Smartphone Application, Perioperative Care, Valve Surgery, Nursing Intervention

Genetic Variability of Turmeric (*Curcuma longa* L.) Based on Microsatellite Markers, Cytochrome 450-Based Analogue (PBA), and Morphological Traits

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Abstract

Information related to variability of turmeric (*Curcuma longa* L.) is important for its genetic improvement. Here, some approaches were used to identify the genetic variability of turmeric using microsatellite markers, Cytochrome 450-Based Analogue (PBA), and morphological traits of the existing potential cultivars of local turmeric. As many as 12 local turmeric accessions were taken from West Java, Sulawesi, Sumatera, and Papua. Morphological characteristics of turmeric are visually observed based on the guidelines for conducting distinctiveness, uniformity and stability tests on turmeric developed by PPV&FRA (Protection of Plant Varieties and Farmers Rights Authority) India (2007). The effectiveness of the molecular markers used was tested by estimating Polymorphic Information Content (PIC) value based on the scoring of amplified DNA bands from the PCR. The phylogenetic analysis of turmeric population was carried out using the NTSYSpc version 2.11a device with the Sequential Agglomerative Hierarchical and Nested-Unweighted Pair-Group Method with Arithmetic (SAHN-UPGMA) method. Based on the results of the analysis, there was a diversity of morphological characteristics in the tested turmeric population. The highest PIC value was 0.37 (CSSR 38) on the SSR marker and 0.36 (CYP2C19F/heme2B6) on the CYTP450 marker, indicating that both markers were quite informative for genetic diversity identification. The results of phylogenetic analysis of turmeric population are available in the form of a dendrogram which shows that the similarity coefficient between the accessions used ranges from 0.36-0.87 which indicates that the genetic diversity between the accessions is relatively high and the genetic differences are wide.

Keywords: Single Sequence Repeats (SSR), Cytochrome P450 (CYTP450), Phenotype, Genetic Diversity, Turmeric.

Effectiveness of Case-Based Concept Map on Critical Thinking and Nursing Process Confidence Among Professional Nursing Students

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Abstract

Concept maps are an innovative learning tool that has been shown to enhance the critical thinking skills of undergraduate students. However, their application in clinical practice and the assessment of confidence in the nursing process remain limited. This study analyzes the effectiveness of concept maps in enhancing the critical thinking skills and confidence of nursing students when formulating the nursing process in a clinical setting. This quasi-experimental study employed a pre- and post-test design with a control group. A total of 91 professional nursing students from the Nursing Department participated, divided into an intervention group (40 participants) and a control group (51 participants). The intervention group received case-based concept map training, conducted alongside preclinical preparation for new nursing students. Critical thinking skills were assessed using the Critical Thinking Disposition Inventory, while confidence in the nursing process was measured with the Nursing Process Confidence Questionnaire. Independent t-tests and paired t-tests were used to evaluate the effectiveness of the case-based concept map intervention. The mean scores for critical thinking skills and confidence in the nursing process in the intervention group after using the concept map were higher than those in the before intervention ($t = 2.246$, $p = 0.03$, and $t = 6.78$, $p < 0.001$, respectively). Meanwhile, the control group showed no significant difference in critical thinking skills ($t = 1.53$, $p = 0.132$), but there was a significant increase in confidence in nursing process between the pretest and posttest ($t = 3.29$, $p = 0.02$). Case-based concept maps can enhance critical thinking skills in professional nursing students. However, in this study, the case-based concept map did not consistently increase nursing students' confidence to apply nursing process in a clinical setting.

Keywords: Critical Thinking; Concept Map; Confidence; Nursing Process; Professional Nursing Students

The Role of Film Communities in Building Local Film Networks and Collaborations in The Digital Era

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Abstract

Film communities play an important role in various aspects, both in the film industry and in society. Seeing their role related to building networks and collaborations, this research examines how film communities can provide positive things for local films. The research uses social capital theory as an analytical tool and uses qualitative methods with an interpretive approach. The results of the research after conducting FGDs with local film community activists are: (1) a map of social networks and collaborations that have been built in film communities in Greater Banyumas starting from discussions that developed at the academic level and at film festivals; (2) The social resources available in each film community come from the capital of each member and funding from government agencies and managed businesses; (3) The role of film communities in empowering the younger generation to be involved in the creative industry in the digital era is very significant. However, there is a more interesting finding: in this digital era, young people's enthusiasm for film community activities is very low, making it difficult to regenerate.

Keywords: Film Communities, Collaboration, Digital Era

Antibacterial and Antibiofilm Potential of A Nudibranch-Associated Fungus, *Penicillium citrinum* K6

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Abstract

Antibiotic resistance and chronic infections are closely linked to biofilm formation, a major contributor to healthcare-associated infections. In this study, we isolated *Penicillium citrinum* K6 from a nudibranch and evaluated its antibacterial and antibiofilm activities. Ethyl acetate extracts were tested against Gram-positive (*Bacillus subtilis*, *Staphylococcus aureus*, *Staphylococcus epidermidis*) and Gram-negative (*Pseudomonas aeruginosa*) bacteria using the disk diffusion method. Antibiofilm activity towards *S. aureus* and *P. aeruginosa* was further assessed at both middle (24 h) and maturation (48 h) phases using the microdilution assay. The extract exhibited inhibition zones ranging from 3.73 to 18.37 mm, with the strongest effect against *B. subtilis* and weaker activity against *S. aureus*. At 1% concentration, the extract significantly reduced biofilm formation by nearly 80% in both phases, indicating efficacy comparable to the positive control ($p > 0.05$). This finding emphasizes the potential of marine-derived *P. citrinum* K6 as a promising source of antibacterial and antibiofilm agents. Future studies employing scanning electron microscopy are recommended to elucidate the structural impact on biofilm.

Keywords: Antibacterial, Antibiofilm, Antibiotic Resistance, Marine Fungi, *Penicillium Citrinum*

Comparison of Secondary Metabolite Compounds of *Plantago Major* Based on Altitude Differences

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Abstract

Plantago major is a plant known for its potential as a medicinal plant. This plant can grow in various conditions, from lowlands to highlands. Differences in altitude correlate with the plant's metabolic processes. This study aims to compare the secondary metabolite content in *Plantago major* growing at different altitudes. The research was conducted using an exploratory survey method with purposive sampling at altitudes of 600 m above sea level, 1200 m above sea level, and 2400 m above sea level. Plant samples consisted of leaves and roots extracted using 96% ethanol and then tested for flavonoid, polyphenol, and alkaloid content using UV-Vis spectrophotometry. The results showed that the highest metabolite content was found in the leaves compared to the roots. The highest content was polyphenol in the leaves of *Plantago major* growing at an altitude of 600 m above sea level, amounting to 27.15 mg GAE/g.

Keywords: Medicinal Plant, Flavonoid, Polyphenol, Alkaloid, Altitude

Empowering Community Cadres through Behavior Change Communication (BCC) : Enhancing Local Food Based Complementary Feeding Implementation

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Abstract

The practice of providing complementary feeding (MP-ASI) is a critical factor in meeting the nutritional needs of children aged 6 to 24 months. Findings from a qualitative study indicate that the implementation of locally sourced complementary feeding for children under two years old requires optimization. Behavior change communication (BCC) is a proven strategy to improve feeding practices, yet its implementation among community health cadres requires further exploration. Implementation and observation of Behavior Change Communication (BCC) Strategies among 13 Primary Service Integration Cadres in Sambeng Kulon Village were conducted through four key phases: (1) preparation and qualitative data collection as a formative study to inform the intervention design; (2) pre-testing of message and media acceptance, including video materials, x-banners, and stickers; (3) intervention delivery; and (4) monitoring and evaluation. There was a notable improvement in knowledge and attitudes regarding complementary feeding (MP-ASI) among 13 community health cadres. This behavioral change was initiated through four key stages: (1) increased nutritional knowledge; (2) active participation in intervention activities; (3) enhanced motivation and willingness to promote MP-ASI; and (4) direct action in mobilizing mothers of young children to adopt local food-based complementary feeding practices. Behavior Change Communication (BCC) strategies offer a viable approach to improving the knowledge and attitudes of community health cadres regarding complementary feeding (MP-ASI) for children aged 6–24 months.

Keywords: Behavior Change Communication, Complementary Feeding, Cadre

Activity Program of The Unsoed Community Service Center in Increasing the Number of Community Service Titles Funded by Internal and External Funding Sources

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Abstract

Community Service is one of the main pillars of the “Tri Dharma Perguruan Tinggi”, alongside education and research. Increasing the number of funded community service projects, both from internal and external sources, is a key indicator of the success of institutions. The Unsoed Community Service Coordination Center (Puskor Pengabdian Unsoed) plays a central role in facilitating and encouraging the academic community to actively contribute to community service activities. This activity aims to outline the strategy, implementation, and impact of initiatives undertaken by Puskor Pengabdian Unsoed in order to increase the success of obtaining community service grants. The methods used include several strategic approaches. First, socialization and dissemination of information related to grant schemes and the latest policies from internal and external funds are carried out periodically. Second, intensive mentoring and workshops are held to train lecturers in writing comprehensive proposals that are in accordance with funding criteria. Third, facilitation of collaboration between lecturers and between faculties is encouraged to produce interdisciplinary proposals with broader impact. The results of this activity show a significant increase in the number of proposals submitted and successfully funded. The number of community service projects funded was 266 from internal sources (BLU Unsoed) and 68 from external sources (DPPM/ministry programs). This success was primarily due to the improved quality of proposals generated through mentoring and their alignment with established priority themes.

Keywords: Activity Program, Community Service Center, Increasing the Number, Titles Funded

Analysis of Potential Agricultural Commodities in the Upper Serayu Watershed, Wonosobo Regency

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Abstract

Wonosobo Regency is located in the upstream area of the Serayu Watershed (DAS Serayu). The management of the Serayu Watershed, particularly in its upstream region, plays a strategic role in the development of sustainable agriculture. This study aims to identify potential potential agricultural commodities in the upstream area of the Serayu Watershed. The method used in this study is the Location Quotient (LQ) analysis. The research was conducted in sub-districts within the upstream area, including Kejajar, Garung, Watumalang, Mojotengah, Wonosobo, Leksono, and Selomerto. The study used secondary data consisting of horticultural crop production records from the upstream Serayu Watershed region over the past 10 years (2014–2023), obtained from the Central Statistics Agency (BPS) of Wonosobo Regency. The results show that several vegetable and fruit commodities have both comparative and competitive advantages in the upstream area, with growth that stands out compared to other regions. Six vegetable commodities and nine fruit commodities dominate more than half of the upstream Serayu region. The potential vegetable commodities are large chilies, cayenne, tomatoes, cabbages, green beans, and long beans. Meanwhile, the potential fruit commodities include avocados, guavas, mandarin oranges, papayas, water guava, pomelo, Siamese oranges, pineapples, and sour sop. This study is expected to serve as a reference for local governments and agribusiness stakeholders in selecting and developing suitable commodities to be cultivated, in support of sustainable economic growth in the upstream Serayu Watershed region.

Keywords: Location Quotient Analysis, Potential Commodities, Regional Potential, Serayu Watershed

Run-Up Height in a Box Culvert-Type Breakwater for Coastal Protection

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Abstract

This research is conducted to examine the reflection and run-up height of waves in a box culvert-type breakwater designed as a structure featuring a watertight wall at the top and a box culvert-type hole at the bottom. The experimental process involves physical modeling of this structure in a laboratory setting using a wave flume which has a length of 15.0 m, a width of 0.3 m, and a height of 0.45 m. The box culvert hole and wave parameters are varied to assess the breakwater's performance. Regular waves are used for simulation, while wave height is measured using two wave probes placed at the front of the model. Multivariate nonlinear regression analysis was carried out on the experimental data to obtain the relationship between reflected waves and run-up height with wave and box culvert holes parameters. The results show that the reflection coefficient (K_R) and run-up wave height (R_U) were reduced as the relative hole height (h_L/d) increased and the relative hole length (B/L) or wave steepness (H/L) decreased.

Keywords: Breakwater, Box Culvert, Regular Wave, Reflection Coefficient, Run-up

ANTHROPOMETRY INDICES IN ADOLESCENT GIRLS WITH ANEMIA

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Abstract

Anemia in adolescent girls is a major public health concern that affects learning concentration, productivity, and reproductive health in the future. This study aimed to examine the association between nutritional status and mid-upper arm circumference (MUAC) with the incidence of anemia among adolescent girls at SMK Negeri 1 Purwokerto. A cross-sectional design was applied with a total of 90 students selected proportionally. Data were collected through measurements of body weight, height, body mass index (BMI), MUAC, and hemoglobin levels using the cyanmethemoglobin method. Data were analyzed using the Chi-Square test. The results showed that the prevalence of anemia was 38,9%. Adolescents with underweight nutritional status based on BMI had a higher risk of anemia compared to those with normal nutritional status ($p=0,03$; $OR=0,375$). MUAC <22 cm was also significantly associated with anemia ($p=0,04$; $OR=1,952$). In conclusion, anthropometric indices were associated with anemia among adolescent girls. Preventive measures through nutritional interventions and school-based health education are strongly recommended to reduce the risk of anemia in this population.

Keywords: Anemia; Nutritional Status; MUAC; Adolescents

Microbial Communities and Soil Properties Shaped by Fertilization Inputs in Agroecosystems

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Abstract

Fertilization inputs play critical role in shaping soil chemical properties by altering nutrient availability and ecological conditions, thereby directly and indirectly influencing microbial communities. In agroecosystems, such changes are expected to enhance nutrient cycling and improve soil productivity. This study investigated how different fertilization inputs: 1) organic amendments, 2) chemical fertilizers, and 3) combination of organic inputs and chemical fertilizers shape microbial communities and soil chemical properties. Soil samples were collected from managed agroecosystems, and microbial abundance was assessed by quantifying bacterial count and fungal biovolume. Soil chemical properties including organic matter, organic carbon and pH were measured. These results indicated fertilization inputs shape microbial communities and soil properties. Organic amendment promoting the highest fungal abundance, along with elevated organic matter, organic carbon and pH, suggesting potential improvement via fungal energy channel that enhance nutrient cycling efficiency. In contrast, chemical fertilizers exhibited the lowest abundance of both bacteria and fungi, as well as reduced organic matter and carbon indicating potential negative impacts on microbial communities and soil quality. These findings highlight the importance of fertilization strategies in modulating soil-microbial interactions and provide valuable insights for optimizing fertility treatments to enhance soil health and sustainability in agroecosystems.

Keywords: Agroecosystems, Bacterial count, Fungal biovolume, Fertilization inputs, Soil properties

Development of Hologram-Based Learning Media to Improve Literacy and Motor Skills of Primary School Students

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Abstract

Introduction: Low literacy and motor skills require learning solutions that stimulate improvements in literacy and motor skills through the creation of digital learning media that are appropriate for the characteristics of Generation Alpha. **Objective:** This study aims to design and develop 3D hologram-based digital learning media that are feasible and effective in improving literacy and basic motor skills in primary school students. **Method:** The method used was research and development (RnD), which consisted of ten stages. This study used a sample of 5th-grade students from State Elementary School 3 Karangnanas (20 students), State Elementary School 1 Purwokerto Lor (20 students), and State Elementary School 2 Baseh (20 students). The research instruments consisted of a 3D hologram media development research instrument and a motor skills measurement research instrument in the form of a Fundamental Movement Skill test. Data analysis in this study consisted of: 1) Feasibility Test: Expert Validation, Teacher and Student Assessment using quantitative descriptive with a Likert scale and then converted using a percentage to see the level of feasibility of the developed media, 2) Effectiveness Test Stage: consisting of data normality test, data homogeneity test and paired t-test. **Results:** Based on the assessment results from media experts, subject matter experts, language experts, teachers, and students, interactive learning media produced a category that was suitable for the learning process by 89.5%. The effectiveness test results show that interactive learning media effectively improves students' motor skills with a sig. value of 0.00. **Conclusion:** Interactive learning media is very suitable for use as learning media for primary school students/equivalent in improving students' motor skills.

Keywords: Learning Media; 3D Holograms; Motor Skills; Movement Literacy; R&D

Biofilm Eradication Potential of Fractionated *Abrus Precatorius* Leaf Extract Against Cariogenic *Streptococcus* Species

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Abstract

Dental caries is a multifactorial disease of hard dental tissue caused by complex interactions between host, microorganisms, substrate, and time. The main cariogenic bacteria include *Streptococcus mitis*, *Streptococcus mutans*, and *Streptococcus sanguinis* which can form biofilms. Saga leaves (*Abrus precatorius*) contain bioactive compounds that have the potential as anti-biofilm agents against cariogenic bacteria. This study aims to determine the eradication activity of n-hexane, ethyl acetate, and residue fractions from ethanol extract of Saga leaves (*Abrus precatorius*) against biofilms of *Streptococcus mitis*, *Streptococcus mutans*, and *Streptococcus sanguinis* bacteria. The study was an in vitro laboratory experiment using n-hexane, ethyl acetate, and residue fractions with concentrations of 0.625%, 1.25%, and 2.5% (w/v)—positive control using 0.2% CHX and negative control using 1% DMSO. Biofilm eradication was tested using the Microtiter Plate Biofilm (MtPB) Assay method. Using a microplate reader with 1% crystal violet staining and absorbance reading at λ : 450 nm. Data were analyzed using one-way ANOVA and post-hoc LSD. The results showed that all treatment groups were significantly different compared to the negative control ($p < 0.05$). The ethyl acetate fractions of 1.25% and 2.5% concentrations and the 2.5% residue fraction showed eradication activity against *S. mitis* which was not significantly different from 0.2% CHX ($p > 0.05$). Against *S. sanguinis*, the ethyl acetate fraction and the 2.5% residue concentration showed efficacy equivalent to 0.2% CHX ($p > 0.05$). In *S. mutans*, the n-hexane fraction of 0.625%, ethyl acetate fractions of 1.25% and 2.5%, and all concentrations of the residue fraction showed eradication activity comparable to CHX 0.2% ($p > 0.05$). Ethanol extract of saga leaves showed significant biofilm eradication activity against cariogenic bacteria *S. mitis*, *S. mutans*, and *S. sanguinis* with ethyl acetate and residue fractions showing good potential as alternative anti-biofilm agents.

Keywords: *Abrus precatorius*, Biofilm, Eradication, *Streptococcus mitis*, *Streptococcus mutans*, *Streptococcus sanguinis*.

Effect of Acidic, Basic, and Neutral pH Soaking Pretreatments on the Antioxidant Activity of Germinated Soybean

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Abstract

Germinated soybeans are known to enhance bioactivity and nutritional value, but the final characteristics are strongly influenced by the pretreatment method. This study evaluated the effect of soaking seeds in acidic, basic, and neutral pH solutions during pretreatment on the antioxidant activity of germinated soybeans from Grobogan (white) and Mallika (black) varieties. Preliminary trials identified optimal germination conditions as using rockwool in the dark with a 20-minute soaking duration. Seeds were pretreated by soaking in neutral (aquadest, pH \pm 7), acidic (1 mM citric acid, pH \pm 3), or basic (1 mM NaHCO₃, pH \pm 9) solutions for 20 minutes, followed by germination for 72 hours. Parameters analyzed included pH, yield, and antioxidant activity (IC₅₀ DPPH). Results showed that black soybeans had higher antioxidant activity than white soybeans, with the lowest IC₅₀ observed in alkaline-treated black soybeans (30,400 ppm) and the highest in acidic-treated white soybeans (61,162 ppm). The highest yields were observed in alkaline white soybeans (35.2 g) and acidic black soybeans (35.3 g), suggesting an interaction between variety and pretreatment pH. Overall, alkaline-pretreated black soybeans demonstrated the greatest potential for producing germinated soybeans with high antioxidant activity.

Keywords: Soybean Germination, pH Pretreatment, Antioxidant Activity, IC₅₀, Yield

Southeast Asian Women and Generational Dynamics of Womanhood In Netflix's *Never Have I Ever* (2020)

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Abstract

Southeast Asian families often uphold values about women rooted in traditional, cultural, and religious teachings. These values are reflected in a gender-based division of roles: women are typically confined to caregiving and reproductive responsibilities, while men are expected to provide for the family and exercise leadership in social, economic, and political spheres. These distinct values have become an integral part of their cultural heritage and are passed down through generations. Therefore, the current study examines how Southeast Asian women audiences interpret and respond to shifting generational values on womanhood as portrayed in the Netflix Series *Never Have I Ever* (2020). Drawing on audience study, 21 participants from the Philippines, Thailand, Malaysia, and Brunei were engaged to explore responses to intergenerational dynamics in the series. Strauss and Howe's Generational Theory was applied to clarify cohort-based differences. Findings suggest that while Southeast Asian women remain deeply influenced by familial and cultural expectations, younger generations are increasingly reinterpreting, rather than rejecting, the traditional views. This indicates an ongoing transformation of gender roles among women in the region, signifying a notable transitional moment in Southeast Asia's cultural landscape.

Keywords: Audience Study, Gender Roles, *Never Have I Ever*, Southeast Asian women, womanhood

Artificial Intelligence-Based Criminal Justice: An Offer of Crime Prevention in the Criminal Justice System

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Abstract

Trust in the judiciary has been declining recently due to the behaviour of law enforcement officials involved in corruption. The courts are no longer a place to seek justice, but rather a place for those with 'access' to win cases. The presence of Artificial Intelligence (AI) can be a solution to this problem. Socio-legal research methods are used to solve this problem. On the one hand, AI has the potential to increase criminal activity, but on the other hand, it can also be used to improve law enforcement services from a more optimistic perspective. AI has a crucial role in law enforcement because of its ability to quickly process and analyse large amounts of data, predict criminal activity with precision, and be more cost-effective than traditional methods. Although at the court level the challenges are greater towards AI-based courts, the emergence of AI can be a powerful tool in efforts to reduce crime; offering solutions in improving law enforcement; preventing corruption among law enforcement officials; and increasing public trust in the judiciary. Therefore, clear guidelines and regulations need to be established in the development and application of AI technology to address concerns and ethical biases in the use of AI.

Keywords: Criminal justice, law enforcement, artificial intelligence, Natural Language Processing, programming language.

Morphological Diversity of Seven *Nephrolepis* Species in Banyumas Regency, Central Java

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Abstract

The *Nephrolepis* genus, widely distributed across tropical and subtropical regions, is characterized by various species exhibiting distinct morphological features. In Banyumas Regency, Central Java, a range of *Nephrolepis* species thrive in diverse ecological environments, contributing to the region's rich fern diversity. Understanding the morphological diversity of these species is crucial for accurate identification, conservation efforts, and ecological studies. This study aims to explore the morphological diversity of seven *Nephrolepis* species found in Banyumas Regency, Central Java, namely *Nephrolepis biserrata*, *Nephrolepis brownii*, *Nephrolepis cordifolia*, *Nephrolepis acutifolia*, *Nephrolepis hirsutula*, *Nephrolepis davallioides*, and *Nephrolepis falcata*.

The observed parameters included plant height, root characteristics, rhizome color, leaf type, leaf surface texture, upper and lower leaf surface color, leaf arrangement, leaf margin, leaf apex, leaf shape, venation type, sorus shape, sorus location, presence of indusium, and indusium shape. The morphological diversity data of *Nephrolepis* species were analyzed descriptively based on these morphological traits. The results revealed considerable variation among the species in terms of rhizome characteristics, rhizome color, leaf margin, adaxial leaf surface texture, adaxial leaf color, sorus shape, and indusium shape. These morphological variations highlight the distinct adaptations of each *Nephrolepis* species to their respective ecological environments in Banyumas Regency. The study provides valuable insights into the morphological diversity of *Nephrolepis* species in the region, contributing to species identification and conservation efforts.

Keywords: *Nephrolepis*, morphological diversity, fronds, sori, Banyumas Regency

From Imagination to Reality: Social Issues in Djokolelono's Children's Stories

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Abstract

This study explores the representation of social issues in Djokolelono's children's stories. Highlighting the intersection between imagination and reality. The aim of this study is to reveal how children's literature can serve both as a medium of social reflection and as an educational tool. The method employed is textual analysis with a thematic approach to identify the social issues presented in narratives. The finding indicate that Djokolelono consistently incorporates themes such as inequality, environmental awareness, family dynamics, and the impact of modernization into imaginative storylines that remain relevant to children's real-life experiences. These results demonstrate the dual function of children's literature: as entertainment that stimulates imagination and as a medium for fostering moral and social awareness. This study underscores the significance of children's literature as an effective and strategic space for social critique and for instilling human values from an early age.

Keywords: Children's Literature, Djokolelono, Imagination, Reality, Social Issues

Community Empowerment in the Conservation of Rare Plants Based on Local Biodiversity that Have The Potential to be Superior Crops With Economic Value in Ketenger Village, Baturaden

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Abstract

One of the impacts of anthropogenic activities is the decline in plant biodiversity, which impacts the quality and balance of ecosystems. Conservation aims to preserve biodiversity and prevent natural resources from extinction. The problem of declining forest productivity is caused by the decreasing potential of production forests, coupled with habitat destruction. Habitat destruction is caused by increased human activity that exploits nature and does not comply with established regulations. Therefore, one solution offered is through empowering community forest farmer groups (Kelompok Tani Hutan/KTH) to participate in increasing the population of rare, economically valuable plants that have ecological and social functions through an agroforestry system using Purwoceng (*Pimpinella pruatjan* Molk). The activity method used includes four stages: program implementation, partner participation, activity implementation, and follow-up for sustainability. The program implementation was carried out in Ketenger Village, Baturaden, with the role/participation of partners, particularly members of the KTH Mitra Jenggala. This activity concluded that the implementation of Purwoceng plants within an agroforestry system can address the problem of rare plant conservation while increasing community income from the crop's production.

Keywords: Agroforestry, Purwaceng, Conservation, Rare Plants

The Language Attitudes of Jenderal Soedirman University Students: The Role of Study Programs in Fostering Positive Attitudes

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Abstract

This study aims to measure and analyze the language attitudes of students at Jenderal Soedirman University (Unsoed) towards the use of Indonesian, particularly in social interactions, academic settings, and media. Data from a questionnaire administered to 129 respondents were processed to identify trends in language attitudes and link them to students' respective study programs. The findings indicate that, overall, Unsoed students have a generally positive attitude towards the Indonesian language. However, interesting variations were found among different study programs, suggesting that the academic environment has a significant influence on the formation of language attitudes. This analysis offers insight into the crucial role of educational institutions and study programs in fostering positive language attitudes.

Keywords: Language Attitudes, Students, Language Variation, Educational Institution

The Legal Status of Child Marriage in Several Countries

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Abstract

Child marriage is a global practice involving various legal frameworks worldwide. With different legal considerations, child marriage has varying legal status. This research aims to determine the legal status of such marriages, which is important as it will bring different legal consequences. Using normative juridical methods with comparative legal and statute approaches, the results show that nearly two-thirds of countries (117) allow children to marry, even in countries that set the minimum age at 18 years, many have exceptions to this rule. In many other countries such as Iraq, Jamaica, and Uruguay, children can marry with parental consent. About one-fifth of countries (38) have different minimum age limits for men and women. In the United States, child marriage is still legal in 34 states, with 16 states having banned underage marriage without exceptions. Indonesia ranks fourth with the highest number of child marriage cases in the world, after India, Bangladesh, and China. In the Middle East and North Africa region, Yemen records one-third of women aged 20-24 married before age 18. This legal variation reflects the complexity of child marriage issues that require comprehensive policy approaches for global child protection. Consequently, in countries that prohibit child marriage without exceptions, violations are considered criminal acts.

Keywords: child marriage, legal status, child protection, cross-country comparison

Farming Efficiency and The Effects of Using Pranoto Mongso in Rice Cultivation Among Farmers (Case Study of The Serayu Dam Area in Indonesia)

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Abstract

Rice farming efficiency is crucial for farmers to optimize yields. This is especially true given the rapid and unpredictable nature of climate change. Rice farmers living in areas surrounding dams, particularly the Serayu Dam area Indonesia, share this concern. Farmers worry that during periods of high rainfall, rivers will overflow into their fields, disrupting rice cultivation. Farmers' use of pranoto mongso is a key tool for predicting the optimal time to begin rice cultivation. The urgency of this research is evident in the farmers' management practices for input use and the use of pranoto mongso in rice cultivation. This study aims to determine the efficiency of farmers' rice farming practices and the influence of pranoto mongso as a factor in the technical inefficiency of rice cultivation in the Serayu Dam area. The data used consist of primary data obtained through interviews with 130 rice farmers in the Serayu Dam area. Data analysis methods include descriptive analysis and efficiency analysis using the Stochastic Frontier Analysis approach and the Cobb-Douglas production function model in logarithmic form. The average technical efficiency of rice farming is 83.30 percent. The average technical efficiency of rice farming is 83.30 percent, indicating that the management of production factors is relatively efficient but not optimal. The range of efficiency values from 0.458 to 0.925 farmers reflects differences in managerial capabilities and input utilization between farmers. One of the influential technical inefficiency factors is adaptation to climate influences using pranoto mongso. Farmers who use pranoto mongso are more able to use inputs efficiently and produce higher rice production than farmers who do not use it.

Keywords: Efficiency, Pranoto Mongso, Rice, Serayu

Machine Learning-Based Fall Detection for the Elderly: A Support Vector Machine (SVM) Approach

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Abstract

Fall detection in elderly populations poses a substantial healthcare challenge, as falls frequently lead to severe injuries and a decline in quality of life. This study proposes a fall detection system employing machine learning, specifically utilizing a Support Vector Machine (SVM) algorithm. The system harnesses motion sensor data derived from accelerometers and gyroscopes. The dataset comprises 712 samples, evenly distributed between training and testing subsets. Feature scaling and model optimization were executed using GridSearchCV with cross-validation. The optimized SVM model achieved an accuracy of 98.6%, a precision of 96.8%, a recall of 100%, and an F1-score of 98.4%.

Keywords: Fall detection, Elderly healthcare, Machine learning, Support Vector Machine, (SVM), Accelerometer, Gyroscope, GridSearchCV

Public Participation in The Legislative Process: Questioning 'Directly Affected Parties' in The Draft Law

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Abstract

This research examines the urgency of public participation in the legislative process, focusing on the existence and role of 'directly affected parties' as mandated in Article 96 paragraph (3) of Law Number 13 of 2022 on the Establishment of Laws and Regulations. Amid efforts to enhance transparency and accountability in the drafting of laws, public participation is often limited to feedback forms, without ensuring the active involvement of groups directly impacted by regulations. The research problem formulation highlights: (1) how the involvement of directly affected parties in the legislative process works, and (2) what the ideal regulation of 'directly affected parties' is in the process of law formation in Indonesia. The research methodology uses a normative legal approach with a conceptual approach, a statutory approach, and a comparative approach. It is complemented by case studies on several strategic draft laws that directly involve vulnerable groups or specific sectors. Secondary data is analyzed qualitatively to identify the gap between legal norms and practical implementation. Research results show that although the Law on the the Establishment of Laws and Regulations has accommodated the principle of inclusive participation, the implementation of Article 96 paragraph (3) is still weak due to ambiguities in the article's wording, bureaucratic resistance, and the dominance of political elites in the legislative process. The ideal regulation for those directly affected requires a clear definition, a systematic identification mechanism, and guarantees of substantive access rather than just procedural.

Keywords: Public Participation, Legislation, Directly Affected Parties

Development of an Intellectual Property Information System at the IP Service and Product Certification Center, LPPM UNSOED (Year 2)

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Abstract

The rapid growth of intellectual property (IP) assets within Universitas Jenderal Soedirman demands a robust, centralized information system to support efficient documentation, monitoring, and strategic decision-making. This research, entering its second year, focuses on the development and deployment of an integrated Intellectual Property Information System (SIKI = Sistem Informasi Kekayaan Intelektual) for the university's Center for Intellectual Property Services and Product Certification under LPPM UNSOED. Building on the foundational system architecture established in the first year, the current phase emphasizes system deployment in a live production environment, real-time monitoring, and iterative refinement to ensure reliability and user responsiveness. The methodology involves system deployment, error tracking, and adaptive maintenance based on user feedback and performance metrics. The expected outcomes include a fully operational IPIS, national and international journal publications, and registered copyrights. This initiative aims to enhance institutional transparency, streamline IP management, and empower stakeholders with actionable insights into the university's innovation landscape.

Keywords: Intellectual Property (IP), Information System, SIKI, LPP

Bibliometric Analysis of Practical Management Systems in Improving Sheep Productivity

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Abstract

Sheep production systems face challenges, such as low reproductive efficiency, irregular feed management, and the high prevalence of endemic diseases. Management, the primary intermediary that interacts with and determines the sustainability of livestock productivity, can resolve these three challenges. The objective of this study was to analyze global knowledge related to reproductive, feed, and disease management practices using bibliometrics in Scopus indexed articles. The analysis was conducted using VOSviewer to map keyword frequency, thematic link strength (total link strength), and conceptual cluster structure. The results of the analysis show that the keyword sheep has the highest frequency (121 occurrences; TLS 1804), followed by reproduction (45; TLS 350), animal feed (19; TLS 219), and sheep diseases (41; TLS 1012). The study produced five clusters: (1) reproduction management based on insemination technology and genetic breeding, (2) adaptive and fermentative feed formulation that impacts metabolic efficiency and emission mitigation, (3) disease control through biosecurity, serological diagnostics, and anthelmintic rotation, (4) interaction between reproductive performance and health status, and (5) risk perception and economic decisions of farmers. Articles in the RIS document reinforce these findings, with empirical evidence from various tropical and subtropical regions showing that management practices are still fragmented and not yet systematically integrated. This study concludes that practical management in sheep production cannot be separated operationally or conceptually. The bibliometric approach allows for identifying priority issues, mapping relationships between concepts, and developing more precise and sustainable intervention strategies.

Keywords: Sheep, Production System, Bibliometric, Management practice, reproductive, feed, disease

Antecedents of Small and Medium Business Financing through Online Lending Platforms: A Cross-Country Study of Indonesia, Hungary, and Romania

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Abstract

This study examines the antecedents influencing Small and Medium Business (SMB) owners' decisions to utilize online lending platforms (OLPs) for financing in three countries: Indonesia, Hungary, and Romania. By employing a quantitative approach, data was collected through structured questionnaires from SMB owners across these regions. The analysis identifies key factors, including perceived ease of use, trust in digital platforms, and financial literacy, which drive the adoption of OLPs. Furthermore, the study compares the extent to which these factors differ across the three countries. The findings indicate that while trust and ease of use are significant determinants of OLP adoption in all three countries, the impact of these factors varies due to differing socio-economic, cultural, and institutional contexts. These results offer valuable implications for platform developers and policymakers seeking to enhance SMB financing accessibility and adoption in diverse global markets.

Keywords: Online lending, small and medium businesses, financing, quantitative research, trust, perceived ease of use, cross-country study.

Factors Affecting Rice Prices in Central Java Province

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Abstract

Rice's dominance as the primary food consumption of the community still occurs in Indonesia. This also occurs in areas with a significant contribution to rice production, namely Central Java Province. Rice price fluctuations have always occurred over the past few years, even in certain periods the price of rice has an increasing trend. This study aims to determine what factors influence rice prices in Central Java Province. The research method uses a descriptive analytical method using secondary data from the Central Statistics Agency from 2014 to 2023. The data analysis method used in this study is multiple linear regression analysis. The dependent variable in this study is the real price of rice in Central Java Province, while the real price of the supplier area, the real price of GKP Central Java, rice consumption and population are the independent variables in this study. Based on the results of the study, all independent variables simultaneously—the real price of rice in Central Java Province, while the real price of the supplier area, the real price of GKP Central Java, rice consumption and population have a significant effect on rice prices in Central Java. These results indicate that increasing food security in Central Java needs to be stabilized to reduce price volatility.

Keywords: Central Java, Food, Price, Production, Rice

The Impact of Financial Knowledge on Poverty in a Developing Archipelago: An Empirical Study of Indonesia

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Abstract

This research aims to quantitatively assess the relationship between the level of financial knowledge and the poverty status of individuals in Indonesia. The study seeks to isolate the effect of financial literacy from other demographic variables to provide clear, evidence-based insights into its role as a barrier to economic advancement. A cross-sectional study was conducted using a survey questionnaire administered to 954 respondents from five major island groups in Indonesia: Sumatera, Java, Kalimantan, Sulawesi, and Nusa Tenggara. A stratified random sampling technique was employed to ensure representative data across these diverse regions. The questionnaire collected data on demographic characteristics, socioeconomic status, and included a standardized module to measure financial knowledge (independent variable) based on an individual's understanding of concepts such as interest, inflation, and risk. The primary outcome, poverty status (dependent variable), was determined based on self-reported household income relative to regional poverty thresholds. The relationship between financial knowledge and poverty was analyzed using a multivariate logistic regression model, controlling for age, education level, and employment. The regression analysis revealed a statistically significant and negative correlation between financial knowledge scores and the likelihood of living in poverty ($p < 0.01$). After controlling for confounding demographic and socioeconomic factors, individuals with higher financial knowledge were found to have substantially lower odds of being in poverty. The results indicate that even when accounting for formal education, financial literacy has a distinct and powerful influence on an individual's economic status, suggesting that practical financial skills are a critical asset for poverty avoidance. This study provides robust empirical evidence from a diverse Indonesian sample that poor financial knowledge is a significant factor contributing to the persistence of poverty. The findings underscore the necessity for policymakers and non-governmental organizations to integrate targeted, accessible financial education programs into national poverty reduction strategies. Empowering individuals with the skills to make informed financial decisions is a critical step toward fostering economic resilience and enabling upward mobility in developing countries.

Keywords: Financial Literacy, Poverty, Indonesia, Quantitative Survey, Logistic Regression, Economic Development, Financial Inclusion, Household Economics.

Effect of reduction temperature on reduced graphene oxide from coconut shell synthesized by the hydrothermal method for supercapacitors

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Abstract

Developing sustainable carbon-based materials from biomass is crucial for next-generation energy storage applications. This study reports the synthesis of reduced graphene oxide (rGO) derived from coconut shell biomass using the hydrothermal method, focusing on the effect of reduction temperature. Reduction processes were carried out at 140 and 180°C using oxalic acid dihydrate as a reducing agent, and compared with a non-hydrothermally reduced sample. The reduction temperature was crucial in establishing the structural and electrochemical characteristics of rGO. Surface morphology analysis revealed graphene-like sheet structures, while the carbon content increased significantly from 87.8 to 95.8% in sample HD-140. X-ray diffraction confirmed the characteristic peaks of rGO, and Raman spectroscopy demonstrated that the 140°C reduced sample exhibited a more ordered crystalline structure. Electrochemical performance was also enhanced, with specific capacitance increasing from 53.18 to 87.74 F/g at a scan rate of 10 mV/s. These findings highlight that controlled hydrothermal reduction temperature can effectively optimize the structural integrity and capacitive behavior of rGO, making it a promising electrode material for supercapacitor applications.

Keywords: Reduced graphene oxide, hydrothermal synthesis, coconut shell biomass, reduction temperature, supercapacitors

Campus Da'wah Movements and Their Role in Preventing Student Violence in Indonesian Higher Education

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Abstract

This study examines the role of campus *da'wah* movements in preventing student violence within Indonesian higher education institutions. The research highlights the growing concern over various forms of violence on campuses, including physical altercations, bullying, radical group clashes, and verbal aggression, which threaten the academic climate and student well-being. Using a qualitative approach, data were collected through interviews, focus group discussions, and document analysis across selected universities. The findings demonstrate that campus *da'wah* movements contribute significantly to violence prevention through three main strategies: (1) promoting religious values that emphasize peace, compassion, and non-violence, (2) creating inclusive communities that strengthen students' sense of belonging, and (3) fostering dialogue and mediation to resolve conflicts constructively. These contributions not only reduce the potential for violent behavior but also encourage the development of a peaceful campus culture. The study concludes that campus *da'wah* movements, when positioned as agents of moderation, can function as preventive social-religious institutions in higher education. This research provides insights for policymakers, educators, and religious leaders in strengthening non-violent student engagement and promoting harmony in university settings.

Keywords: Campus da'wah movements, student violence, higher education, religious moderation, peace culture

Purbalingga Farm Group Empowerment Towards Sustainable Production Through Group Strengthening, Feed Security, and Biogas Production

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Abstract

Strong farmer groups, feed availability, and good waste management are supporting factors in achieving sustainable sheep production. This community service activity aims to improve the knowledge, skills, and attitudes of Purbalingga Farm sheep breeder groups to create Sustainable agriculture. The target of this activity is the Purbalingga Farm sheep farmer group located in Kutasari District, Purbalingga Regency. The methods used include 1) Focus Group Discussion (FGD), lectures, and direct practice for training, and 2) pre-test and post-test to determine the improvement after activities in the field of Group Strengthening training, Production of Silage of elephant grass + cassava (A) and corn tebons (B), and Waste Processing into Biogas. The results of the activity showed an increase in farmers' knowledge by 41.31%, 44.52%, and 40.78% in the fields of group strengthening, silage production, and waste processing into Biogas. Overall skills increased by 60% and attitudes from the medium category to high. The silage characteristics produced based on proximate analysis for silage A were 95.78% BK; 8.64% PK; 0.70% LK; 24.09% SK; 7.54% Grey; and 59.02% of BETN; and for silage B is 94.75% BK; 9.13% PK; 0.52% LK; 39.54% SK; 13.11% Ash; and 37.71% of BETN. Sheep farm waste that is processed into biogas already produces gas. This activity concludes that an increase in the knowledge, skills, and attitudes of farmers in each field of training has been achieved. Farmers have also been able to create food security and environmentally friendly livestock through silage and biogas technology. Recommendations for the next activity are training oriented to the marketing of livestock products.

Keywords: Biogas, Group empowerment, Sustainable farming, Purbalingga Farm, Silage

Sharing to be Recognized: The Practice of Sharing Religion-Based Content Among Elderly Women

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Abstract

Social media has been utilized by elderly women not only as a medium for expressing religious values, but also as a strategic tool to maintain their social position and remain relevant within the structure of modern society. However, this phenomenon is still often overlooked in scholarly discussions on aging. This study not only responds to the limitations of previous research, which tends to be normative and descriptive, but also focuses on explaining how elderly women construct identity and social existence through their social media activities. Employing a qualitative descriptive approach and an ethnographic design, this study reveals three key findings. First, the practice of content sharing as a consumption of religious imagery illustrates how elderly individuals construct and display their spiritual identity in digital spaces. Second, sharing as a form of social and spiritual reward indicates that positive responses from the community offer them a sense of appreciation and recognition. Third, the act of sharing becomes a means of identity validation, helping them to maintain their social roles in later life, both spiritually and socially. The significance of this study lies in its contribution to enriching sociological discourse by offering a new perspective on the elderly as active agents in the era of mediatization.

Keywords: Content sharing, Elderly women, Identity, Religion, Social media

The Potential of *Pleurotus cystidiosus* Bioactive Compounds in Inhibiting the Proliferation of Cervical and Colorectal Cancer Cells

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Abstract

The aim of this research is to determine the group of bioactive compounds produced from the fruiting body of *Pleurotus cystidiosus*, to determine the IC₅₀ value of the cytotoxic test of cervical and colorectal cancer cells, to analyze the ability of apoptosis. The research method used is an experimental method, for the cytotoxic test using the MTT method [3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromid], *P. cystidiosus* chloroform extract treatment was used with concentrations (in µg/mL) of 0; 31.25; 62.50; 125; 250; 500 and 1,000, with three replications. The antiproliferative test used *P. cystidiosus* chloroform extract at half IC₅₀ concentration incubated in a CO₂ incubator for 0 hours, 24 hours, 48 hours, 72 hours, with three replications. Apoptosis test was conducted using flow cytometry method with Annexin V-FITC Apoptosis Detection Kit. The variables observed were the bioactive compound group of *P. cystidiosus* extract, IC₅₀ value, percentage of apoptotic and necrotic cancer cells. Data analysis used was linear regression. The results showed that chloroform extract of *P. cystidiosus* was able to inhibit the growth of cervical cancer cells with IC₅₀ values of 169.70 µg.mL⁻¹ and colorectal cancer cells with IC₅₀ values of 243.68 µg.mL⁻¹. The apoptosis value for cervical cancer cells was 54.5%, necrosis 28.8%. The apoptosis value for colorectal cancer cells was 50.8%, necrosis 5%.

Keywords: apoptosis, cervical cancer cells, colorectal cancer cells, MTT assay, *Pleurotus cystidiosus*

Regional Inequality and Sustainability: Building Inclusive Growth in Indonesia through Dynamic Panel Analysis

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Abstract

This research aims to develop an inclusive economic model focused on reducing regional inequalities and fostering sustainability in Indonesia, utilizing the dynamic panel approach of the System Generalized Method of Moments (Sys-GMM) with data from all provinces covering the period 2015–2024. The findings reveal that regional economic growth is strongly influenced by path dependency effects, where previous economic performance continues to play a significant role in driving future growth. Income inequality, measured by the Gini ratio, notably hampers growth, highlighting the critical need to reduce disparities as part of an inclusive development strategy. Moderate inflation is found to support economic activity, provided it remains within manageable limits. The research also uncovers that early technology adoption has a negative short-term impact on economic growth, underscoring the necessity of adequate human resource development and infrastructure before reaping the full benefits of digitization. Furthermore, government spending has a slight negative effect, emphasizing the need for improvements in fiscal management. The study achieves the most robust and relevant results by eliminating multicollinearity among variables. Policy recommendations include enhancing affirmative actions to reduce inequality, implementing fiscal policy reforms, accelerating inclusive digital transformation, and managing controlled inflation. The study also advocates for the development of future models and indicators to better capture the long-term and spatial dynamics of Indonesia's economic growth.

Keywords: Inclusive Economy, Regional Disparities, Sys-GMM, Economic Growth, Sustainable Development Policy.

From Minimalism to Personalization : Strengthening Digital Value Accentuate to Improve Sales Performance of B2B SMEs in the Age of Digital Detox

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Abstract

In today's digital era, small and medium-sized enterprises (SMEs) face the dual challenge of leveraging advanced digital tools while avoiding customer fatigue and digital detox. This study aims to examine how Content Minimalism Capability and AI-Driven Personalization enhance Sales Performance in B2B SMEs, with Digital Value Accentuate (DVA) as a mediating variable. A total of 300 valid responses were collected from B2B SME managers across Indonesia. Data were analyzed using Partial Least Squares Structural Equation Modeling (SEM-PLS) to test both direct and mediating effects. The results reveal that both Content Minimalism Capability and AI-Driven Personalization significantly and positively affect DVA, which in turn has a strong positive impact on Sales Performance. Furthermore, DVA is found to mediate the relationship between the two antecedent variables and Sales Performance, highlighting its critical role in transforming digital strategies into tangible business outcomes. The findings suggest that by emphasizing minimalistic yet meaningful digital content and leveraging AI personalization responsibly, B2B SMEs can strengthen digital value creation, maintain customer trust, and improve sales performance while reducing the risk of digital overload and detox.

Keywords: Sales Performance, Content Minimalism Capability, AI-Driven Personalization, Digital Value Accentuate, Digital Detox

Community Perceptions of Adolescent Problems in Gumelar Subdistrict, Banyumas Regency

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Abstract

Adolescence is a dynamic transitional phase marked by potential conflicts in values and perceptions between adolescents and adults. These differences may lead to risky behaviors that endanger both the individual and the community. Understanding such problems from multiple perspectives is therefore essential. This study explores community perceptions of adolescent problems from three societal groups: adolescents, parents, and community leaders. Data were collected through questionnaires distributed in ten villages, of which seven responded. A total of 206 respondents participated, consisting of 100 adolescents, 70 parents, and 36 community leaders. Findings reveal a shared perception among the three groups that adolescents are generally not considered problematic. Nevertheless, some respondents reported the persistence of risky behaviors, including online gambling, illegal street racing, premarital sexual activity, and drug abuse. These findings provide a preliminary overview of adolescent issues in the area and highlight the need for further in-depth exploration of community perspectives to inform more effective interventions.

Keywords: adolescents, community, perceptions, risky behavior

Determinants of Social Return on Investment (SROI) in Community-Based Tourism Village Development (Case Study: Pekunden Tourism Village, Banyumas)

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Abstract

Tourism village development has become a national priority strategy to encourage economic growth at the village level. Pekunden Tourism Village in Banyumas, known for its cultural heritage and creative industries, has attracted numerous investments from the government and other parties to support its development. However, there are fundamental problems with how we measure success. To date, the primary benchmarks have been economic indicators such as tourist numbers and financial revenue. This approach often fails to capture the true value created, namely social impact, cultural preservation, and environmental sustainability. As a result, we don't know precisely what factors make an investment truly "successful" in improving community welfare holistically. This study aims to fill this gap by using the Social Return on Investment (SROI) framework to identify the key determinants that transform investment inputs into positive social impacts in Pekunden Tourism Village. This study is novel because it goes beyond calculating the SROI ratio, but instead focuses on answering the question, "Why is the SROI value high or low?" The approach used is a mixed-methods approach, combining quantitative analysis (SROI calculation) with qualitative analysis (in-depth interviews with managers, community members, government officials, etc.). Focusing on a cultural heritage-based tourism village provides specific insights relevant to many other villages with similar characteristics. This study successfully identified four key positive determinants and one significant challenge in creating social value in Pekunden Tourism Village: Community Participation as the Primary Foundation, the Importance of Good and Transparent Governance, the Power of Multi-Party Collaboration, the Integration of Featured Products as a Differentiator, and Challenges in Digital Marketing. Investment in tourism villages will generate maximum social impact not only from the amount of funds disbursed, but also from how that investment strengthens community participation, good governance, and strategic collaboration.

Keywords: Social Return on Investment (SROI), Tourism Village, Community Development, Social Impact, Public Participation, Pekunden, Banyumas.

"Entrepreneurial Government" As a Strategy In Developing The Tourism Sector in Banyumas Regency

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Abstract

Tourism is a strategic sector positioned as a driving force for economic growth in Indonesia; however, the government's capacity to manage tourist attractions remains weak due to the underdeveloped spirit of entrepreneurship. This study aims to examine the influence of entrepreneurial government on the performance of state-owned enterprises in the tourism sector, with particular focus on the Badan Layanan Umum Daerah Pariwisata Kabupaten Banyumas. Employing a quantitative design complemented by qualitative analysis, the research involved respondents from local government, the regional parliament, business actors, tourists, and tourism observers through surveys and interviews. The study is expected to generate a new and effective conceptual model for strengthening entrepreneurial government within public sector governance. The findings reveal that the entrepreneurial government strategy in Banyumas has been implemented relatively well. The local government is considered to have set clear tourism targets, to be actively innovating through digital promotional campaigns and creative events, to be promoting local wisdom as a tourism asset, and to be fostering collaborative partnerships. Nonetheless, several challenges remain, particularly in terms of product diversification, the long-term involvement of private actors, and the provision of adequate infrastructure. Limitations were also identified with respect to human resource capacity, destination diversification, and the ability to adapt to emerging tourism trends.

Keywords: Entrepreneurial Government, Public Management, Public Sector Innovation, Institutional Capacity, Tourism Development

The Construction of Social Identity of Adolescents Through Slang in The Era of Globalization

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Abstract

This study aims to analyze the use of slang among adolescents as a tool for social identity formation in the era of globalization. Slang is viewed as a form of social expression that reflects the dynamics of adolescent groups and a response to global cultural changes. This study uses a qualitative descriptive approach with sociolinguistic methods, involving observational analysis, content analysis, and documentation of adolescents' verbal interactions on social media and in their social environments. Data were collected from texts and conversations on social media platforms such as Instagram, Twitter, and TikTok, as well as mass media targeting adolescents. The results indicate that slang plays an important role in strengthening adolescents' social group identity and fostering solidarity among them. Furthermore, globalization, particularly through social media, accelerates the spread of slang and influences the form and function of this language. This study also provides insight into the role of slang in the formation of adolescents' social identity and the impact of globalization on language among the younger generation.

Keywords: slang, adolescents, social identity, globalization, sociolinguistics

Preparation, Characterization, and Toxicity Study Of Channa Striata Extract Alginate Nanoparticles on HepG2 Cells

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Abstract

Channa striata extract contains albumin protein and high fatty acids that can accelerate wound healing so it is widely used in health care. Due to the presence of these compounds in Channa striata extract, it faces challenges in penetrating the cell membrane. Particle size reduction can solve the problem, therefore Channa striata extract is formulated within a nanoparticle system combined with biopolymer, such as alginate. The study aims to synthesize Channa striata extract nanoparticles using alginate, characterize the nanoparticle, and evaluate their cytotoxic effects on HepG2 cells line. The Channa striata extract nanoparticle was prepared using ionic gelation, employing different concentrations of alginate and CaCl₂ as the counter ion. The characterization of nanoparticles including morphology, particle size, particle size distribution, zeta potential, functional group, and thermal analysis. Channa striata extract nanoparticles using alginate had an irregular morphology with 210.2 nm particle size, PDI of 0.143, and zeta potential of -47.1 mV. The results of functional group and thermal analysis showed that Channa striata extract has been adsorbed in nanoparticle system. The toxicity assay results indicate that alginate nanoparticles of Channa striata extract exhibit no cytotoxic effects on HepG2 cells, as demonstrated by cell viability percentage exceeding 50%.

Keywords: Channa striata, alginate, nanoparticles, toxicity, HepG2 cells

Improving the Innovation Performance of Iconic Products from Small and Medium Enterprises (SMEs) in Purbalingga Regency in a VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) Business Environment

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Abstract

Innovative actions not only make SMEs resilient to crises, but innovative SME products can also create new demand that meets global market standards, enabling SMEs to maintain their position in an environment characterized by volatility, uncertainty, complexity, and ambiguity, or VUCA for short. Although several studies have shown the significant influence of product innovation on innovation performance, other studies have found that product innovation has no effect on innovation performance. Thus, the relationship between product innovation and innovation performance cannot yet be concluded and requires further research. This study aims to explore a new conceptual model that explains how to improve innovation performance using a relevant theoretical approach. Based on the problems that have been identified and described, the theory that is considered relevant and appropriate to use as a basis for explaining and solving the problems in this study is the Service-Dominant Logic theory. The novelty of this research is the construction of a conceptual model, which proposes social network ambidexterity as an intervening variable to address the research gap in explaining the influence of product innovation on innovation performance. The study shows that product innovation has a direct effect on innovation performance. This study offers a new conceptual model that explains how to improve innovation performance using relevant theoretical approaches, namely by examining the role of product innovation in organizational agility and the role of social network ambidexterity in innovation performance. Innovation can be a driving force for SMEs to achieve good performance. A quantitative approach based on surveys and descriptive analysis. Data was collected and distributed using questionnaires to 204 owners of exhaust SMEs in Purbalingga Regency. The data analysis process to test the hypotheses in this study used structural equation modeling (SEM AMOS). The results of the study show that product innovation has a direct effect on innovation performance.

Keywords: Product innovation; Innovation Performance; VUCA; SMEs

Microdosimetric Evaluation of BNCT Using Simultaneous BPA and BSH in Single and Multi-Cell Models with PHITS Simulation

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Abstract

Boron Neutron Capture Therapy (BNCT) is a cancer treatment method based on a nuclear reaction between Boron-10 and thermal neutrons to selectively destroy cancer cells. The main objective of this study is to evaluate the radiation effects at the cellular level. The research stages included modeling cancer cells in the form of single and multi-cell structures, consisting of the cell nucleus, cytoplasm A and B, and the cell membrane. The next step was to determine microdosimetric parameters, namely the range of α and ${}^7\text{Li}$ particles, the Linear Energy Transfer (LET), and the dose distribution of both particles within the cells. Boronophenylalanine (BPA) and Sodium Borocaptate (BSH) were used simultaneously as boron carrier compounds in cancer cells. Modeling and microdosimetric calculations were carried out using the Particle and Heavy Ion Transport System (PHITS) software. The results showed that thermal neutron interactions with Boron-10 occurred in both single and multi-cell models. The range of α particles was 10 μm and ${}^7\text{Li}$ particles was 4 μm . The LET values were 251.19 keV/ μm for α particles and 363.08 keV/ μm for ${}^7\text{Li}$ particles. The dose distribution in the single-cell model was 3.9275 Gy (nucleus), 4.1257 Gy (cytoplasm A), 4.1514 Gy (cytoplasm B), and 2.3930 Gy (cell membrane), with an average dose of 3.29 Gy. In the multi-cell model, the dose was 3.1893 Gy (nucleus), 4.964 Gy (cytoplasm A), 5.3359 Gy (cytoplasm B), and 2.8558 Gy (cell membrane), with an average dose of 4.087 Gy. These findings indicate that the simultaneous use of BPA and BSH is more effective than their separate use, thereby enhancing the effectiveness of BNCT.

Keywords: Microdosimetry, BNCT, BPA, BSH

Innovation Orientation on Marketing Performance: The Mediating Role of Product Excellence and Digital Transformation

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Abstract

This study examines the effect of innovation orientation on marketing performance, with product excellence and digital transformation as mediating variables, in the food and beverage Micro, Small, and Medium Enterprises (MSMEs) sector in Central Java Province. The purpose of this study is to examine the direct and indirect relationships between innovation orientation and marketing performance, and evaluate the mediating role of product excellence and digital transformation. Data were collected from 100 MSME owners using an online questionnaire. This study used Partial Least Squares Structural Equation Modeling (PLS-SEM) to test seven hypotheses. The results show that all hypotheses are supported. This study contributes to the literature by integrating product excellence and digital transformation as dual mediators in the relationship between innovation and performance. The limitation of this study is that it only focuses on one sector and region, which may limit generalizability. Future research could adopt a longitudinal approach and explore other industry sectors or geographical contexts.

Keywords: MSME, innovation orientation, marketing performance, product excellence, digital transformation

Halal Center Job Training Institution Development Strategy Using The Analytical Hierarchy Process

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Abstract

Strengthening the Halal Center institution at UNSOED requires study, considering that the Halal Center is a rapidly growing research center in line with the mandatory halal certification for MSMEs. One of the supporting units of the Halal Center is the Job Training Institute (LPK). The objectives of this study are 1. to examine the LPK unit development strategy, 2. to examine the factors contributing to the LPK unit's development, and 3. to examine the actors involved in the LPK unit's development. A total of 52 stakeholders were surveyed using the Analytical Hierarchy Process. These stakeholders included academics, staffs and manager of Job Training Institute, staffs and manager of Halal Inspection Agency, the halal task force, and relevant agencies. Factors that influence the development of LPK are 1) quality and quantity of human resources (0.173), 2) LPK accreditation (0.165), 3) quantity and quality of training types (0.162), 4) operational expenses and training rates (0.154), 5) socialization and education (0.131), 6) marketing and institutional competence (0.111), and 7) worker competence regulations (0.104). The consistency ratio for the factor matrix is 0.02, which meets the scientific requirements.

Keywords: actor, factor, halal supervisor, halal auditor, halal slaughterer, priority

Land Bank and Fair Partnership for the Sustainable Welfare of Indonesian Farmers

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Abstract

This research analyzes the roles of the Land Bank and Fair Partnerships as policy instruments to address land ownership inequality and improve the welfare of smallholder farmers in Indonesia. The background is the high poverty rate and economic vulnerability among farmers due to limited access to productive land resources, which ironically are often abandoned or controlled by a few individuals. This situation hinders the achievement of the Sustainable Development Goals, particularly Goal 1, No Poverty, and Goal 10, Reduced Inequalities. This research aims to formulate strategies for land bank policy that support sustainable prosperity for Indonesian farmers. The issues to be discussed are how the Land Bank can operate effectively to acquire and distribute land and how fair partnerships can be built to bridge the capital and technology gap without sacrificing farmers' rights. This research uses a normative legal research method with a conceptual and legislative approach. This research concludes that the synergistic implementation of these two instruments is crucial. The Land Bank serves as the central institution to ensure land availability, while Fair Partnership guarantees economic and technical sustainability. This research yields policy strategies that not only improve farmers' access to land but also empower them through transparent and mutually beneficial cooperation schemes, thereby promoting sustainable welfare and accelerating the achievement of SDGs targets in Indonesia's agricultural sector.

Keywords: Land Bank, fair partnership, sustainable welfare, farmers

Mechanisms of Sharia Investor Satisfaction: The Roles of Islamic Financial Literacy, Financial Self-Efficacy, and Sharia Investment Decisions

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Abstract

This study aims to explain the role of Islamic financial literacy and financial self-efficacy in shaping Sharia investment decisions and their impact on investor satisfaction. The research employs a survey approach of Sharia investors in Indonesia's Islamic capital market. Data are analyzed using Structural Equation Modeling (SEM) to test direct effects, single mediation, and serial mediation. The findings indicate that Islamic financial literacy positively influences financial self-efficacy, investor satisfaction, and Sharia investment decisions. Financial self-efficacy positively affects investor satisfaction and Sharia investment decisions, and Sharia investment decisions positively affect investor satisfaction. However, financial self-efficacy does not affect Sharia investment decisions. The results further show that financial self-efficacy and Sharia investment decisions mediate the effect of Islamic financial literacy on investor satisfaction. The study's novelty lies in integrating the four constructs within a single SEM framework that simultaneously examines multiple and serial mediations in a Sharia investment context, enriching theoretical understanding and offering practical implications for designing programs to enhance investor literacy and financial self-efficacy.

Keywords: Sharia Investor Satisfaction, Islamic Financial Literacy, Financial Self-Efficacy, and Sharia Investment Decisions

The International Community Service Program in Vietnam for Cultural Exchange and to Strengthen International Relations

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Abstract

The International Community Service Program (Kuliah Kerja Nyata/KKN) in An Nhơn Tây Village, Vietnam, aimed to implement cultural diplomacy through student participation in the Green Summer Volunteer Campaign (GSVC). This study employed a descriptive qualitative method, focusing on the outcomes and achievements of the KKN activities. The program was designed to create a platform for cultural exchange and to strengthen international relations, involving students from Indonesia, Vietnam, and Malaysia. The findings indicate that the International KKN had a positive impact on the local community in the fields of education, environment, and social welfare. Students conducted programs teaching foreign languages and basic skills to children, boosting their interest in learning through creative methods. Furthermore, the program strengthened social bonds and fostered cross-cultural understanding through events like ASEAN Day, which showcased traditional dances and cuisine from each participating country. Collaborative activities, such as street cleaning and mural painting, also made a tangible contribution to the village environment. In conclusion, this study demonstrates that the International KKN not only benefited the local community but also served as an effective means of cultural diplomacy and a tool for building a positive image of Indonesia on the international stage. The interaction and cooperation among volunteers from different countries successfully fostered a strong sense of cross-cultural solidarity.

Keywords: Community Service, cultural exchange, international relations, volunteers

Dialectics of Ritual and Incantation in Cowongan Art in Banyumas Regency, Central Java

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Abstract

Traditional arts are one of the pillars of cultural identity that continuously undergo transformation in response to social and historical changes. This study examines the dialectics between ritual and performance aspects in Cowongan, a traditional art form from Banyumas Regency, Central Java. Originally practiced as an agrarian ritual to invoke rain and ensure communal well-being, Cowongan has shifted its function into a performative art often staged in cultural festivals. This research employs a qualitative approach with an ethnographic method, involving in-depth interviews with local elders, Cowongan performers, and direct observation of performances. The findings reveal that (1) Cowongan has historical roots as a ritual tradition with strong spiritual and symbolic dimensions; (2) sacred and philosophical values are embedded in its symbols, chants, and ritual practices; (3) functional transformation occurs as Cowongan adopts artistic innovations in script, stagecraft, and musical accompaniment; (4) a dialectical tension emerges between older generations who emphasize sacredness and younger generations who stress performative aesthetics; and (5) the contemporary relevance of Cowongan lies in its role as both a marker of Banyumas cultural identity and a means of preserving intangible heritage in the era of globalization. This study underscores that Cowongan is not merely a cultural remnant but a dynamic cultural practice that integrates spiritual, social, and aesthetic values, thereby maintaining its significance in present-day Banyumas society.

Keywords: Cowongan, ritual, performing arts, Banyumas, cultural dialectics

The Relationship Between Knowledge and Quality of Life of Pregnant Women

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Abstract

Currently, stunting is a global public health priority with a target of reducing stunting prevalence by 40% between 2010 and 2025. An estimated 20% of stunting begins in the womb in mothers who are malnourished and do not get enough adequate nutrition to support their babies' growth and development. The quality of life of pregnant women has a significant influence on their nutritional status. Pregnant women with a good quality of life tend to be better able to manage nutritious food intake, while a poor quality of life can increase the risk of nutritional disorders, such as anemia or being underweight, which are at risk of harming the mother and fetus. Based on the 2023 Banyumas Health Profile, it shows that stunting in toddlers reached 11.35%, and the prevalence of Low Birth Weight (<2500 grams) was 8.3%. Data on pregnant women experiencing KEK prevalence was 7.97% and Anemia in Pregnant Women was 6.86%. The purpose of this study was to analyze the relationship between maternal knowledge and the quality of life of pregnant women as an effort to prevent stunting in the first 1000 days of life. This study used a cross-sectional design, sampling all pregnant women in the Purwokerto Utara II Community Health Center area. Data collection utilized interviews and questionnaires. Data analysis included univariate analysis, bivariate analysis using the chi-square test, and multivariate analysis using multiple logistic regression..

Keywords: Maternal knowledge, Quality of life, Pregnant women

DNA barcoding and Antimicrobial Bioactive Compounds Metabolomic Profiling of Selected Red Seaweed

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Abstract

The rapid emergence of antibacterial resistance poses a critical threat to global public health, necessitating the search for novel bioactive compounds. Red seaweeds are recognized as promising candidates due to their production of structurally diverse metabolites with potential biological activities. This study aimed to identify red seaweed species, characterize their bioactive compound profiles, and evaluate antibacterial potential. Morphological and anatomical analyses, supported by DNA barcoding, were conducted for species identification. Bioactive metabolites were profiled using LC-HRMS, and antibacterial activity was assessed against *Micrococcus luteus* ATCC4698, *Bacillus megaterium* DSM32, and *Escherichia coli* K12 using the agar diffusion method. Morphological identification revealed red seaweed samples belonging to *Gracilaria*, *Gelidiella*, *Laurencia*, and *Rhodymenia*, while molecular analysis confirmed *Gracilaria edulis* and *Gracilaria textorii*. LC-HRMS analysis revealed 21 compounds, seven of which have been previously reported to exhibit antibacterial properties. Antibacterial assays demonstrated weak inhibition (0.78–2.57 mm) with bacteriostatic effects against all tested pathogens. Overall, red seaweeds produce diverse bioactive metabolites, though their crude extracts revealed limited antibacterial activity. Further purification, structural elucidation, and testing against multidrug-resistant bacteria are recommended to explore their potential as novel antibacterial agents.

Keywords: Metabolomic; Seaweed; Antimicrobial; Bioactive; DNA

**Instilling Religious Tolerance in Children at Sidoarum 1 Public Elementary School,
Sempor District, Kebumen Regency**

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Abstract

The diversity of culture, ethnicity, race and religion in Indonesia is one of the gifts given by God which should be a greater strength than other countries. One of the most important things that must be maintained is religious tolerance, because we know that our country has six official religions, namely Islam, Christianity, Catholicism, Buddhism, Hinduism and Confucianism. Instilling an attitude of tolerance since childhood is expected to make the next generation of the Indonesian nation into people who have a strong attitude of tolerance, so that divisions do not occur due to differences that exist in the community, considering that Indonesia is one of the countries with a very large diversity of tribes, languages, religions. SDN 1 Sidoarum is one of the public elementary schools in Kebumen Regency which has a place of worship for two religions, namely a Vihara and a Mushola. The purpose of this study is to find out how the instillation of religious tolerance in the first year of research and how the implementation of religious tolerance in the second year of research conducted by SDN 1 Sidoarum, Sempor District, Kebumen Regency. While this type of research is field research (qualitative) where data is collected through interview, observation, documentation methods so that conclusions can be drawn in this study. The output of this research is publication in a reputable international journal Q1 namely the journal <https://journal.iainkudus.ac.id/index.php/QIJIS/index> : QIJIS (Qudus International Journal of Islamic Studies) and becoming a speaker at an international seminar held by LPPM Unsoed as well as additional material for Islamic religious education courses in the sub-chapter of Interfaith Harmony.

Keywords: Religious Tolerance; Cultivating Attitudes; SDN 1 Sidoarum: Diversity; Indonesian Nation

Reconstruction of Asset Seizure as an Effort to Save Assets from Corruption Crimes

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Abstract

The court rulings regarding the payment of restitution in corruption criminal cases have been carried out effectively; however, the enforcement of judgments involving the payment of restitution has not been optimal. The enactment of a law on the confiscation of state assets has long been anticipated by all parties, as it would facilitate law enforcement agencies in executing their duties to seize assets from suspicious individuals. Although such a law has been proposed for some time, it has yet to be approved. This research aims to analyze the model of asset confiscation in corruption crimes as thoroughly as possible and to identify the barriers in executing such confiscations. The theories employed in this second year of research include the Theory of Punishment, the Theory of Asset Confiscation, and it utilizes Research and Development (R&D) methods. The study was conducted within the jurisdiction of the Central Java High Prosecutor's Office.

Keywords: reconstruction; asset preservation; corruption crimes

Analysis of Production Function of Commercial Layer Chicken Farming in Banyumas Regency

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Abstract

The analysis of the production function of commercial layer chicken farming in Banyumas Regency aims to identify the factors influencing production output and efficiency in this farming business. This study uses a quantitative approach with the Cobb-Douglas production function analysis method to measure the relationship between inputs such as feed and livestock conditions with the number of eggs produced. Data were collected through direct surveys to several layer chicken farmers in Banyumas Regency. The analysis results show that collectively, the production factors have a very significant effect ($P < 0.01$) on egg production with a determination coefficient (R^2) of 0.9493. Partially, the production factors that have a very significant effect ($P < 0.01$) on egg production are the number of livestock and the age of the livestock. In addition, the study reveals that the technical efficiency levels among farmers are varied, indicating opportunities for improvement in management and the use of more appropriate technology. These findings provide a basis for developing strategies to increase production and efficiency in commercial layer chicken farming in Banyumas Regency. In conclusion, optimizing the use of production resources is crucial to enhance the productivity and competitiveness of farmers in meeting market demands. Recommendations are given to farmers and policymakers as efforts to improve farmer welfare and develop the livestock sector in the region.

Keywords: production function, layer chicken, production factors, production

Secondary Innovation in Coffee Agribusiness to Improve the Quality and Capacity of Superior Regional Products in Salem District, Brebes Regency

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Abstract

In the second year of the PM-UPUD program, activities focused on improving downstream products by optimizing equipment use and strengthening partners' knowledge in coffee business management. Continuing from the first year, which provided basic equipment and initial training, this phase emphasized improving the quality and capacity of greenbeans for the Berkah Bumi Langit (Berbulan) Farmers Group and roasted beans and coffee powder for the Kopi Salem (Kopi Guwek) MSME. These activities included training and equipment grants: a huller for Berbulan to improve the quality of coffee bean hulling, a 5 kg roasting machine and a 50 kg/hour grinding machine for Kopi Salem to support the roasting and grinding processes. Digital scales (15 kg and 150 kg) were donated to both partners to improve precision in coffee processing. In addition to post-harvest aspects, workshops on cultivation practices were also held, covering plant care and disease management to maintain productivity. This integrated approach equipped partners with cultivation and processing competencies. The synergy of good cultivation practices and modern processing technology is expected to improve the quality and capacity of Salem coffee, expand market opportunities, and strengthen its position as a superior Brebes product.

Keywords: Coffee, quality and capacity, Berbulan, Kopi Guwek, Salem

Digitalization and Green Business Practices: The Sustainability Journey of Banyumas MSMEs

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Abstract

This study investigates how micro, small, and medium enterprises (MSMEs) in Banyumas Regency integrate digitalization and green business practices in their sustainability journey. The objective is to describe the role of digital tools such as e-commerce platforms, online payment systems, and social media marketing in supporting business growth, alongside environmentally friendly practices including green packaging, waste reduction, and the use of local resources. The research applies a qualitative descriptive method by conducting interview and field observations with selected MSMEs in Banyumas Regency. The findings show that digitalization enables local entrepreneurs to expand market reach and strengthen customer engagement, while green business practices foster community trust and environmental responsibility. Together, these approaches create a pathway for MSMEs to achieve economic viability, social inclusion, and ecological awareness. The study concludes that the synergy between digital innovation and sustainability-oriented practices reflects the resilience and adaptability of Banyumas MSMEs in facing current challenges. The implications highlight the importance of local government and community support in accelerating sustainable MSME development.

Keywords: Digitalization, green business practices, sustainability, MSMEs, Banyumas Regency

A Forecasting of Rupiah Exchange Rate to Us Dollar by Using Markov Chain and Cheng Methods

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Abstract

As the fluctuation of the Rupiah exchange rate to US dollar plays an important role on economic in Indonesia, then in this paper we provide forecasting of Rupiah exchange rate to US dollar by using fuzzy time series methods. We especially apply the Markov Chain and Cheng methods. The data used is the daily middle exchange rate data of the Rupiah to US dollar from January 2nd, 2019, to December 31st, 2024. Meanwhile, the main procedure involve fuzzification, defining fuzzy logical relationship, determining fuzzy logical relationship group, and defuzzification. The results provide forecasting with the value of MAPE of 0.26% for Markov chain method, and 0.17% for Cheng method. Hence, we conclude that the Cheng method provides a better performance in forecasting of Rupiah exchange rate to US dollar compared to that of Markov chain method.

Keywords: Cheng method, fuzzy time series, forecast, MAPE, Markov chain method.

Induction of Somaclonal Variation through Silver Nanoparticles in Cavendish Banana

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Abstract

Somaclonal variation provides an important source of diversity that can be exploited in plant improvement programs. This study aimed to evaluate the effect of silver nanoparticles on the induction of somaclonal variation by applying different concentrations of AgNPs (0-1.5 ppm). The results showed that the application of AgNPs influenced both quantitative and qualitative traits. Plants treated with 0.25 ppm AgNPs exhibited the greatest increase in height, reaching up to 7 cm, whereas higher concentrations generally suppressed growth. Shoot size displayed qualitative variation ranging from fairly large to very small, reflecting differential responses to nanoparticle exposure. Leaf morphology also varied in size and form, while shoot and leaf pigmentation remained predominantly green across treatments, with only minor visual differences. These findings suggest that AgNPs can act as a stimulant for inducing somaclonal variation, as evidenced by differences in plant height, shoot morphology, and leaf characteristics. The induction of such variability highlights the potential role of nanotechnology in producing novel phenotypes that could expand the genetic base for breeding and crop improvement.

Keywords: cavendish, nanoparticles, somaclonal, mutation, genetic

Democracy Without Competition: Single Candidates in Local Elections and the Crisis of Representation in Indonesia

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Abstract

Regional Head Elections with a single candidate are a phenomenon in Indonesia's electoral democracy landscape. From a normative perspective, the implementation of this practice raises significant questions about the essence of democracy itself, which should be distributed through competition of ideas and representation of choices. Through a normative-analytical approach, this study explores how the absence of competition has the potential to undermine the pillars of substantive democracy. The results of the study indicate that single candidates tend to strengthen political oligarchy, minimise meaningful public participation, and create limited representation. Further analysis shows that the phenomenon of single candidates is a manifestation of political consolidation, in which the dominance of the majority political party eliminates space for opposition. Therefore, the position of democracy in terms of the accountability of elected leaders is questionable, as there is no effective oversight mechanism from political opponents. This study argues that democracy without competition has the potential to threaten the foundations of representation and public accountability. The urgency of this study lies in the need to review the legal and political framework of regional elections to make them more responsive to the principles of good democracy.

Keywords: Single Candidate, Electoral Democracy, Representation Crisis, Legitimacy

The Relationship Between Religion and Local Culture in the Ruwatan Tradition in Banyumas

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Abstract

The ruwatan tradition in Banyumas is a Javanese cultural practice that is rich in spiritual, symbolic, and social values, while also facing dynamics amid the development of formal Islamic religiosity. Some people consider ruwatan to be a form of myth or syncretism, while for the local community, this tradition is preserved through the negotiation of meaning between Islamic teachings and cultural wisdom. This study aims to explore the relationship between religion and local culture in the practice of ruwatan, particularly how Islamic religious values are integrated into the ruwatan tradition in Banyumas. The method used is a qualitative approach with an ethnographic strategy. Data was collected through participant observation, in-depth interviews with religious leaders, puppeteers, and members of the ruwatan community, as well as archival and cultural documentation. Informants in this study included Mr. Salam, a resident of Pejogol Cilogok Village who organized ruwatan for sukerta children; Mr. Karsim, a kendang artist in ruwatan wayang kulit performances; Mr. Kadisan, a leader in Tangerang Somagede Village; and Mr. Karsim, a ruwatan wayang kulit puppeteer who lives in Panusupan Cilogok Village. Data analysis was conducted thematically by identifying patterns of relationship between religion and local culture (ruwatan). The results of this study show that ruwatan in Banyumas is not merely a traditional heritage, but a medium of dialectics between Islam and Javanese culture. Islam does not erase tradition, but rather enters into a process of contextualization of adaptive values, resulting in a distinctive Islam-Javanese religiosity in Banyumas. This relationship demonstrates a model of harmonious acculturation, in which cultural symbols and rituals internalize religious values while strengthening local identity. These findings are expected to contribute to interdisciplinary studies of religion and culture and offer practical perspectives for the preservation of local traditions in building social harmony.

Keywords: Religion, Culture, Ruwatan, Banyumas

Application of Si Based on Wollastonite and Flying Ash Bottom Ash (FABA) on Sweet Corn in Marginal Ultisols

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Abstract

Application of inorganic Si based on wollastonite and flying ash bottom ash (FABA) minerals to corn plants on marginal Ultisol land. Silicon (Si) is a non-essential nutrient but plays a crucial role in increasing crop production and plant resistance to abiotic and biotic stress, especially on marginal land. Corn is one crop that responds to Si application because it requires more Si than other crops. Corn plants grown on marginal acidic Ultisol land will experience stress due to soil acidity and P nutrient deficiencies. Wollastonite and coal combustion waste (flying ash bottom ash (FABA) contain high Si and macronutrients such as Ca, which are essential for increasing the pH of marginal Ultisol soil. Furthermore, wollastonite and FABA are inexpensive and environmentally friendly natural Si sources that can replace expensive synthetic Si. The purpose of this study was to examine the effect of wollastonite and FABA minerals and their combination on the chemical properties of Ultisol soil, growth characteristics, physiology, and rice production. The research will be conducted in the screen house, Exparm Faculty of Agriculture, Unsoed using plastic pots measuring 40 x 50 cm. The research design used is a Randomized Block Design with 2 treatment factors. The first factor is wollastonite mineral with 4 doses of Si (0 g Si/pot; 2.5 g Si/pot; 5 g Si/pot; 7.5 g Si/pot). The second factor is FABA with 4 doses of Si (0 g Si/pot; 2.5 g Si/pot; 5 g Si/pot; 7.5 g Si/pot). The number of treatment combinations is 16, replications 3 times so that 48 experimental units are obtained. The observed variables include soil chemical properties, plant growth and yield of sweet corn plants. Data were analyzed by analysis of variance, and if it shows a significant effect, further DMRT tests are carried out at the 5% level and regression analysis. The result shows that wollastonite increase corn stalk diameter in the first week of corn planting and FABA increases number of leaves in the third weeks of corn planting. There is interaction between wollastonite and FABA in third week of corn planting. However, wollastonite mineral and FABA do not increase chemical properties of soil such as pH H₂O, pH KCl, DHL, and potential redox.

Keywords: wollastonite; FABA; silicon; corn; ultisol

Determination of the Total Flavonoid Content from Shallot Peel Extract (*Allium cepa* Var. *Agregatum*)

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Abstract

Shallots are plants that contain secondary metabolites, one of which is flavonoids. The presence of these compounds makes shallots not only useful as a cooking spice but also useful in medicine. Shallot peel, which is often worthless, actually contains flavonoid compounds that can be used, one of which is in the world of health. This study aims to extract and analyze the flavonoid content of shallot peel extract using a UV-Visible spectrophotometer at a wavelength of 439.5 nm. Flavonoid content analysis was carried out on shallot peel extract obtained by the maceration method using methanol solvent. The results obtained in the form of shallot peel produced an extract yield of 3.35% and a flavonoid content of 11.74 ppm.

Keywords: extract, flavonoid content, shallot peel

Continuity and Change: Strategy to Re-Read “Kampung” in Indonesia During the Pandemic Period

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Abstract

Kampung is intended to serve as a foundation for shaping sustainable urbanity and urban space. Kampung in the pandemic era has become one of the most limited places for movement. The emergence of a new stigma surrounding Kampung has become a hotbed of COVID, but this cannot be ascertained due to the lack of available data on Kampung. Reformist thinker Thomas Karsten, regarding responses to public health, the colonial-era settlement government had implemented Kampung health standards in 1930. In response to this, the colonial government was considered to be in a hurry to carry out mapping and surveys, but in the end, they had no idea how to organize the Kampung. Karsten thought about how urban planning could be used inclusively to prevent racial segregation, and how continuity and change might be applied in a minimal presentation. Karsten's design was reminiscent of contemporary European settlement plans at that time and the theories that developed: functional, harmonious, and organic. He contributed his ideas to the project of settlement the Mlaten people in Kampung Sompok, Java. Mass settlements pay attention to social aspects by providing open spaces, which are expected to foster a vibrant social life. This open space arrangement seems to have been applied to the development of most settlements in Indonesia to date. However, the COVID-19 pandemic conditions have changed these thoughts. Kampung arrangements in Indonesia continue, but the stigma of being a slum remains attached to the settlement construction. This paper aims to examine the present and past comparisons with the Kampung arrangement, particularly in terms of continuity and change in the distance between buildings and open spaces. Handling of low-density spatial planning can reduce the increase in Kampung distribution. This is the last generation of Colonial architects who paid attention because they faced the PES pandemic for more than ten years in Java.

Keywords: Arrangement, Kampung, Continuity and Change, Open Space, Pandemic

**Improving Maternal Nutrition Knowledge through Local Wisdom-Based Education:
Evidence from Pregnant Women with Chronic Energy Deficiency in Banyumas, Indonesia**

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Abstract

Chronic Energy Deficiency (CED) among pregnant women remains a significant public health problem in Indonesia. In 2023, the Banyumas District Health Office reported 72 pregnant women with CED in the working area of Kembaran II Public Health Center, 32 of whom were from Bojongsari Village. CED increases the risk of pregnancy complications, low birth weight (LBW) infants, and maternal or infant mortality. However, existing nutrition education programs are often general and not tailored to pregnant women's specific needs. This study implemented a local wisdom-based nutrition education and assistance program focusing on maternal nutritional needs, utilization of local food sources, and dietary restriction stigma. Results showed significant improvements in knowledge scores from pre- to post-intervention, with p-values of 0.008, 0.013, and 0.049, respectively. The findings indicate that local wisdom-based education is effective in enhancing maternal nutrition knowledge, promoting the use of local food, and reducing harmful dietary restrictions. Strengthening such approaches within *posyandu* and maternal health programs at public health centers is recommended to reduce the risk of CED and improve maternal and infant health outcomes.

Keywords: Chronic Energy Deficiency, Pregnant Women, Nutrition Education, Local Wisdom, Maternal Health, Indonesia.

Preliminary Study on The Geological Controls of Gold Mineralization in Sedimentary Rocks of The Rambatan Formation, Banjarmangu Area, Banjarnegara, Central Java

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Abstract

Indonesia is one of the countries with significant gold resources in the world. For many years, the Indonesian government generally explored and extracted gold only from conventional hydrothermal gold deposits associated with volcanic belts. Recently, gold exploration in Indonesia has begun to shift its focus outside the volcanic belt and is targeting sedimentary rock formations in basin systems. Gold deposits associated with sedimentary rocks have not been widely explored in Indonesia, thus requiring more detailed and comprehensive research. This pre-eliminatory study aims to understand how geological controls mineralization in the research area. The research methods include literature review, field geological mapping focusing on the distribution of lithology, geological structure, alteration, and mineralization, and laboratory analysis in the form of petrography and ore microscopy. The results of the initial study indicate that the lithology of the research area is divided into four types of lithology, namely volcanic breccia, gabbro intrusion, andesite lava, and carbonaceous mudstone-sandstone, which is dominated by black shale and fine-grain carbonaceous sandstone. The geological structure pattern that developed in the research area is a horizontal fault that runs north-south, indicated by valley and hill lines as well as fault breccia and gouge patterns. Hydrothermal alteration in the research area can be divided into two types: argillic-smectite±illite and silicified alteration. The hydrothermal alteration in the research area is localized around gouge and fault breccia. Likewise, a significant gold mineralization is mostly controlled by the direction and pattern of fault breccia and gouge within black shale and fine carbonate sandstone. Gold mineralization in the research area is closely related to the sulfide minerals pyrite and minor chalcopyrite. The research area holds promising prospects as a target for future exploration of gold associated with sedimentary rocks. This research is expected to provide new opportunities for the industry and the downstream development of mineral deposits in Indonesia.

Keywords: Gold mineralization; sediment formation; fault breccia; gouge; Banjarmangu

Chiral Separation of Sulconazole Using Cyclodextrin-Modified Micellar Electrokinetic Chromatography

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Abstract

A method based on cyclodextrin-modified micellar electrokinetic chromatography (CD-MEKC), a mode of capillary electrophoresis has been developed for the chiral separation of sulconazole using hydroxypropyl- γ -cyclodextrin (HP- γ -CD) as chiral selector. Several CD-MEKC parameters such as HP- γ -CD concentration, sodium dodecylsulphate (SDS) concentration, and applied voltage were optimized. Enantioresolution of sulconazole ($R_s > 1.50$) was achieved by the CD-MEKC system containing 40 mM HP- γ -CD, 60 mM SDS and 20 mM borate buffer (pH = 9.3) solution with an analysis time of less than 10 min. Calibration curves were linier for the two stereoisomers of sulconazole ($r > 0.994$). The optimized CD-MEKC method was successfully applied for sulconazole analysis in the pharmaceutical (cream) sample with percentage recovery of 97.50%. The present CD-MEKC method was simple, high resolution, rapid analysis, and environmentally friendly.

Keywords: Capillary electrophoresis, Cyclodextrin, Micellar electrokinetic chromatography, Enantioseparation, Sulconazole.

Transformation of Local Public Services to Support the Achievement of SDGs (A Study in Banyumas Regency, Indonesia)

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Abstract

The transformation of local public services has become a strategic issue in supporting the achievement of the Sustainable Development Goals (SDGs), particularly in Banyumas Regency, which records a Village SDGs index of 46.88. The Ministry of Villages has emphasized that village SDGs data will serve as a reference for determining village action plans up to 2030, thereby necessitating a transformation of the public service system to improve these achievements. Nonetheless, a research gap persists concerning how village public services contribute comprehensively to the 17 SDGs, especially in relation to policy, leadership, community participation, innovation, and governance. This study therefore aims to describe the current condition of village public services in Banyumas Regency within the SDGs framework and to identify both enabling and inhibiting factors in the transformation of village public service delivery. The state of the art of this research lies in its holistic approach to village public services by considering their contribution to the achievement of SDGs, particularly in the context of Banyumas villages. A convergent mixed-methods design, combining qualitative and quantitative approaches, was employed. The research was conducted in 75 villages across Banyumas Regency, with the primary respondents consisting of one representative from each village government (Pemdes). The findings indicate that the transformation of village public services to support the achievement of the SDGs continues to face significant challenges, largely due to the relatively low capacity for public service innovation within village governments in Banyumas. This limitation is evident in the heavy workload associated with delegated tasks and the implementation of programs mandated by the central government.

Keywords: Village Transformation; Public Service; Public Policy; Public Sector Innovation; Sustainable Development

Estimation of the shelf life of corn cookies using the accelerated shelf life testing (ASLT) method using the Arrhenius model

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Abstract

Cookies can be prepared with various flours, including gluten-free options, as the formation of gluten is not necessary. Corn flour is a suitable ingredient for cookie preparation. Investigations into the production of cookies utilizing maize flour have been conducted. Nevertheless, the shelf life of maize cookies has not been investigated in studies. One approach to ascertain shelf life is the Accelerated Shelf Life Testing (ASLT) method. The Arrhenius model is applicable in the Accelerated Shelf Life Testing (ASLT) approach. The objective of this study is to ascertain the shelf life of maize cookies with the Accelerated Shelf Life Testing (ASLT) method utilizing the Arrhenius model methodology. The variables examined were package type, storage temperature, and duration of storage. The packaging comprises two layers: a PET jar and aluminum foil. The storage temperature has three factors: 30°C, 40°C, and 50°C. The storage time comprises four factors: 0 days, 14 days, 28 days, and 42 days. The study examined chemical and sensory qualities as factors. The chemical variables crucial for estimating the shelf life of cookies are moisture content and Free Fatty Acid (FFA). Chemical variables as supporting criteria encompass protein content, carbohydrate content (by difference), fat content, and ash content. Sensory variables encompass scent, texture, flavor, and preference characteristics. The findings indicated an elevation in moisture content and Free Fatty Acid (FFA) levels during storage. The estimated shelf life of corn cookies in PET jar packaging, considering moisture content at temperatures of 30°C, 40°C, and 50°C, is 65, 51, and 40 days, respectively. The projected shelf life of corn cookies, based on the moisture level of aluminum foil packaging at 30°C, 40°C, and 50°C, is 52, 47, and 43 days, respectively. The analysis of chemical variables indicated that both fat content and ash content increased by the conclusion of the storage period compared to its commencement. The levels of protein and carbohydrate content diminished by the conclusion of storage. The scent of corn in corn cookies diminishes after storage. The texture of corn cookies is becoming less crispy, the flavor is diminishing in sweetness, and overall preference for maize cookies is declining.

Keywords: ASLT, aluminium foil, Arrhenius, corn-cookies, polyethylene terephthalate

Community Empowerment Through Capacity Building in Robusta Coffee Brewing: Supporting Edu-Tourism Development at Bukit Kepuh, Kebumen, Indonesia

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Abstract

The growth of coffee consumption in Indonesia in 2025 is projected to reach an average of 7% per year with total coffee consumption reaching 450,000 tons/year. The amount of coffee consumption per capita in 2022 reached 1.1 kg/year. The shift in coffee consumption patterns of generation Z from brewed coffee to various coffee brewing variants such as cold brew, filter coffee, and iced coffee is an obstacle for KTH Tani Jaya in marketing coffee products at the Kepuh Tourism Location. This obstacle is because KTH Tani Jaya is only able to master one brewing technique, namely the tubruk technique. Based on direct observations in the field, there are several problems related to the "Tani Jaya" Forest Farmers Group, namely: The "Tani Jaya" Forest Farmers Group has not mastered the techniques and variations of coffee brewing. The solution offered is coffee brewing technology to overcome the problem of the coffee brew served being predominantly bitter. The Community Service method that will be used is socialization, training, and mentoring in the application of coffee brewing technology. The results of the training and mentoring that have been implemented have resulted in an increase in the level of knowledge, understanding and skills of 39.4%, 48.5% and 50% respectively.

Keywords: rewing, coffee, KTH

Analysis of the Determinant of Stunting from A Regional Perspective in Indonesia

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Abstract

Many countries, particularly those in development, grapple with the major issue of stunting. The global stunting rate remains high at 21.9%, with contributions from Africa and Asia. ASEAN countries have a stunting prevalence of 27.4%, significantly contributing to the high global stunting rate. Although per capita income growth in Indonesia continues to increase, the stunting rate remains quite high at 19.8%, with most regions still experiencing high stunting rates. We no longer view stunting solely as a nutritional issue, but rather as a multidimensional approach from a regional perspective. This study uses multidimensional variables related to economic and non-economic aspects to explain the causes of high stunting rates across regions in Indonesia. Multivariate analysis was used to identify the determinants of stunting from a regional perspective. The results show that using cluster and principal component analysis, patterns of stunting factors across regions in Indonesia were formed based on multidimensional indicators. Non-economic indicators were more dominant in grouping regions based on stunting causes. The implication of this research is that regional governments, when formulating policies related to stunting management, prioritize the characteristics of the underlying causes. Stunting management policies across regions in Indonesia are based on the characteristics of the problem. Policies concentrate on enhancing the performance of indicators that continue to fall short of expectations.

Keywords: Stunting, multidimensional indicator, cluster analysis, principal component, regional perspective

Strategy Of Internalizing Pancasila Values Through Educational Game Media in Strengthening National Education Resilience

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Abstract

The resilience of national education faces severe challenges due to globalisation, the influx of digital technology, and the diminishing internalisation of national values among young people. This situation requires innovation in a more interactive and fun way of character education so that the values of Pancasila are not only understood intellectually, but also internalised in daily life. This study aims to examine the strategy of internalising Pancasila values through the educational game Ular Tangga Pancasila as a tool to strengthen the resilience of national education. The research adopted a qualitative approach with descriptive methods through participatory observation, focus group discussions (FGDs), and documentation on a training involving 50 high school/vocational school students in Banyumas Regency. The findings indicate that educational games can improve participants' understanding of the values of gotong royong, tolerance and nationalism, while facilitating an interactive and collaborative learning process. Value internalisation occurs not only at the knowledge level, but also in social activities through interactions between members. Thus, educational games focusing on Pancasila can serve as an alternative strategy for character learning that is relevant in strengthening the resilience of national education in the era of disruption.

Keywords: Pancasila, sustainability of education, value integration, education game, character development

Economic, Social, and Environmental Sustainability in Sheep Farming: Evidence from Highland Farmers in Banjarnegara Regency

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Abstract

Sheep farming in Banjarnegara's highlands sustains rural livelihoods but faces economic, social, and environmental challenges. Using the Triple Bottom Line (TBL) framework, this study surveyed 132 sheep farmers through questionnaires and interviews, with sustainability indicators assessed on a four-point Likert scale. Environmental sustainability scored highest (mean = 3.16), supported by forage availability, manure recycling, and the adaptability of Domba Batur sheep. Economic sustainability (mean = 3.14) was moderate-to-high, reflecting profitability and financial security, yet constrained by rising feed costs, small flock sizes, and limited market access. Social sustainability (mean = 3.10) was the weakest, with trust and solidarity evident but hindered by inequitable benefit distribution and variable group cohesion. Conclusion: Sheep farming demonstrates overall moderate-to-high sustainability. Strengthening collective marketing, reducing feed costs, enhancing group leadership, and promoting ecological resilience are essential to ensure its long-term contribution to livelihoods and sustainable development

Keywords: Sheep farming, Sustainable livestock systems, Triple Bottom Line (TBL), Highland of Banjarnegara

Preliminary Surveillance of Antimicrobial Resistance in Sputum Isolates: Implications for Biofilm-Associated Chronic Infections

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Abstract

Background: Chronic respiratory infections are frequently associated with biofilm-producing bacteria, which complicate treatment and drive antimicrobial resistance. Surveillance of sputum pathogens and their resistance profiles provides essential baseline data for local epidemiology and biomarker research.

Methods: A preliminary cross-sectional study was conducted at the government hospital of Banyumas District from August to September 2025. Sputum specimens were processed by standard microbiological methods, and antimicrobial susceptibility testing was performed using the Vitek 2 Compact system. Isolates were identified to the species level. Gram-negative bacteria were categorized as non-multidrug-resistant organisms (Non-MDRO), multidrug-resistant organisms (MDRO), extended-spectrum β -lactamase producers (ESBL), or carbapenem-resistant *Acinetobacter baumannii* (CRAB). Gram-positive bacteria were classified as Non-MDRO or MDRO, including methicillin-resistant *Staphylococcus aureus* (MRSA).

Results: The main Gram-negative pathogens isolated were *Klebsiella pneumoniae*, *Klebsiella oxytoca*, *Enterobacter cloacae*, *Escherichia coli*, and *Acinetobacter baumannii*. *K. pneumoniae* was the most frequent isolate, showing both Non-MDRO and ESBL-producing strains, while *A. baumannii* demonstrated carbapenem resistance. A notable proportion of ESBL-producing Enterobacteriaceae was observed, reflecting antibiotic pressure. Gram-positive bacteria, including MRSA, were also identified.

Conclusion: Sputum pathogens in Banyumas District display diverse resistance patterns, with a high prevalence of ESBL. These findings provide a foundation for future research on biofilm profiles and biomarkers of chronic infections and highlight the need for integrated diagnostic and therapeutic approaches.

Keywords: Antimicrobial Susceptibility test, Biofilm, Pulmonal Chronic Infections

Climate Change Impact Modelling on Low Flow Discharge in the Tajum Watershed Using HEC-HMS Based on IPCC AR6 Scenarios

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Abstract

Climate change imposes significant pressure on hydrological system sustainability, particularly in maintaining low flow discharge vital for irrigation and agricultural continuity. The Tajum Watershed plays a strategic role in supporting agriculture in Banyumas Regency, making reliable water discharge essential. This study aims to evaluate the impact of climate change on low flow discharge using a hydrological model developed with HEC-HMS. The model was calibrated and validated with historical data and subsequently applied to simulate future discharge under IPCC AR6 climate scenarios. Simulations for 2025–2100 considered SSP1-2.6, SSP2-4.5, SSP3-7.0, and SSP5-8.5 scenarios. Model calibration achieved a percent bias of –5% with a correlation coefficient of 0.670, while validation yielded coefficients of 0.607 and 0.516 for two different periods. Future simulations showed maximum peak discharge of 158.152 m³/s (SSP3-7.0) and minimum peak discharge of 95.008 m³/s (SSP2-4.5). Low flow analysis revealed decreasing Q95 values from 1.175 m³/s (SSP1-2.6) to 0.902 m³/s (SSP5-8.5), confirming that higher emission scenarios reduce future low flow availability. Conversely, the low-emission scenario maintained more stable discharge, highlighting the need for climate mitigation to sustain water resources in the Tajum Watershed.

Keywords: climate change, low flow discharge, Tajum Watershed, HEC-HMS, IPCC AR6

Evaluation of the effectiveness of the Research Ethics Committee (KEP) LPPM Unsoed's workflow: Identification of factors that influence

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Abstract

The Institute for Research and Community Service (LPPM) of Jenderal Soedirman University (Unsoed) plays an important role in managing research activities, one of which is through the Research Ethics Committee (KEP). KEP LPPM Unsoed has 2 panels, namely the Science and Technology Panel and the Social and Humanities Panel. The newly formed KEP LPPM Unsoed management requires evaluation and analysis of the management used. This study aims to evaluate the effectiveness of the KEP LPPM Unsoed workflow and identify factors that influence its performance. The method used is a survey method with a case study approach in KEP LPPM Unsoed. The research methods include interviews, observations, and data collection. This research will be conducted at LPPM Unsoed with a focus on the KEP workflow process. The research subjects include: 13 members of the Research Ethics Committee (KEP) of LPPM Unsoed, review proposals from researchers (± 100 proposals), and administrative staff involved in managing the KEP workflow (1 person). The results of the study show that the total number of submissions during 2025 is 106. Submissions to the Science and Technology Panel are 36, and the Social Sciences Panel is 71. Submissions reviewed by the Science and Technology Panel are 30, and the Social Sciences are 57. The KEP workflow is generally in accordance with standard operating procedures, but there are still several obstacles related to the duration of the review process, limited human resources, and variations in researchers' understanding of ethical requirements. This study recommends strengthening the capacity of reviewers, optimizing the KEP LPPM Unsoed digital system and more in-depth socialization regarding research ethics.

Keywords: Research ethics committee, LPPM, Unsoed, effectiveness, workflow

The Concept of Emotional Branding in the Marketing of Urban Heritage Tourism Destinations

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Abstract

Urban heritage is one of the iconic forms of tourism destinations that can reach potential tourists through multi-sensory experiences. Referring to the relationship branding theory, the emotional, sensory, and authentic elements of a cultural heritage-based destination create a unique impression that triggers brand identity in the minds of tourists. Banyumas, as one of the cities rich in cultural heritage, has its advantages for the development of urban heritage tourism (UHT), particularly with the various festivals held regularly and the emergence of various cultural heritage preservation communities. However, the branding of Banyuma Kota Lama as an urban heritage site is not yet strong enough compared to other cultural heritage destinations in Indonesia, especially for Gen Z tourists. Based on the concept of emotional branding, symbolic interaction is one of the important dimensions in building loyalty, trust, and personality. This research aims to build a marketing model for urban heritage tourism destinations in Banyumas Regency using a quantitative approach.

Keywords: Emotional Branding, Marketing, Tourism, Urban Heritage, Z Generation

Strategies to Improve Beef Farming in Kebumen; A System Thinking Approach

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Abstract

This study was conducted on beef cattle farms located along the coastal region of Kebumen Regency, specifically in the area known as *Urut Sewu*. The research addresses the urgent need to enhance the productivity of beef cattle farming as a strategic contribution to the national food security agenda. As the primary source of red meat, beef cattle farming can only effectively support food security if breeding and reproduction efforts are successful, since fattening operations alone do not contribute to population growth. However, data from the Central Bureau of Statistics (BPS) of Kebumen Regency indicate a decline in the beef cattle population—from 69,019 head in 2019 to 60,552 head in 2023.

The objective of this study is to identify existing farming systems and develop a qualitative model to support sustainable cattle breeding practices. The research aligns with several Sustainable Development Goals (SDGs), particularly Goal 2 (Zero Hunger), Goal 8 (Decent Work and Economic Growth), and Goal 12 (Responsible Consumption and Production). A survey was conducted in the *Urut Sewu* region using a stratified random sampling technique. The study employed a dynamic modeling approach, with data analysis facilitated by the Vensim modeling software.

Findings reveal that Kebumen represents a unique case in Indonesia, as it continues to cultivate Peranakan Ongole beef cattle through breeding and reproduction systems, whereas many other regions have shifted toward fattening operations. The preference for fattening is driven mainly by its perceived potential for quicker financial returns. The modeling framework is currently under development and will be elaborated in detail in the full article.

Keywords: Causal Loop Diagram, Systems Dynamics, Beef Cattle, Smallholders, Systems Analysis

Implementation of Teaching Factory Based on Japanese Corporate Culture in Vocational Schools to Enhance Student Internship Readiness

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Abstract

This community service initiative aims to enhance the readiness of vocational high school (SMK) students for internship programs in Japan through the implementation of a Teaching Factory model integrated with Japanese corporate culture. The program addresses critical gaps in students' understanding of Japanese work ethics, soft skills, and practical industry exposure. Methods include socialization workshops, intensive training on Japanese corporate values such as Kaizen and Omotenashi, and the application of simulation technologies like Kanban boards and digital timers to mimic real workplace environments. The program also involves curriculum development, teacher training, and collaborative projects with Japanese industry partners. Expected outcomes include improved student competency in Japanese language and culture, increased internship selection success rates, and the sustainable integration of Japanese corporate culture into the SMK curriculum. The initiative contributes to strengthening bilateral relations between Indonesia and Japan by preparing a skilled, culturally-aware workforce.

Keywords: teaching factory, Japanese corporate culture, vocational high school, internship readiness, industry partners

Application of Additive Group Coset of Integer Sets in Cryptographic Algorithms

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Abstract

Cryptography is a field of science that studies information and communication security by converting messages into an unreadable, unalterable form and confirming the identities of the sender and recipient. A coset of a group is a set formed by the operation of a subgroup on elements of the group, forming equivalence classes and dividing the group into several mutually disjoint subsets. This research discusses the application of the additive group coset, the set of all integers \mathbb{Z} , in the design of cryptographic algorithms. In this research, the subgroup used to form the coset is the $60\mathbb{Z}$ subgroup. Furthermore, the $\mathbb{Z}/60\mathbb{Z}$ coset set will be utilized in the design of cryptographic algorithms for encryption and decryption. The cryptographic algorithm design is implemented in the form of an encryption-decryption program using the group coset approach using the C++ programming language. The research results obtained in the form of a cryptographic algorithm design using the coset set $\mathbb{Z}/60\mathbb{Z}$ and implemented in the C++ programming language. Utilization of the coset on $\mathbb{Z}/60\mathbb{Z}$ can strengthen the security of the cryptographic algorithm by dividing messages into equivalence classes which makes the process of recovering messages without the right key more difficult.

Keywords: Group, coset, cryptography, encryption, decryption

Authentic Leadership for Social Capital Development among Rural Enterprise Managers in the Face of Digital Era Challenges

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Abstract

Technological disruption presents challenges and the potential for the erosion of social capital that has been maintained, changing the landscape of economic empowerment at the village level. In this context, the importance of authentic leadership becomes very clear. Leadership that can guide rural enterprises to discover their potential and form solid and productive groups is essential. This research aims to investigate the role of authentic leadership in managing community social capital through rural enterprise. Authentic leadership refers to followers' legitimate belief in a leader's sincerity, triggered by moral judgment. Another similar opinion states that authentic leadership is based on moral character, integrity, and consistency between a leader's principles, words, and actions. The methods used in this study involve a quantitative approach, namely surveys, and a qualitative approach using interviews. This research is highly urgent in providing a real contribution to the development of a village-based economic empowerment model in the digital era. The results of this research are not only beneficial for rural enterprise.

Keywords: Authentic Leadership, Social Capital, Rural Enterprise

Hepatotoxicity in Subchronic Lead (Pb) Exposure: Scooping Review

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Abstract

Extensive research has been conducted on subchronic lead (Pb) toxicity. One frequently investigated effect is the liver, an organ heavily involved in Pb metabolism. Pb toxicity to the liver occurs through various pathways. The most commonly proposed pathway is oxidative stress, although various mechanisms of Pb toxicity to the liver exist. This scooping review examines the mechanisms of sub-chronic Pb exposure to the liver. It is hoped that this review will provide a comprehensive explanation of the effects of Pb exposure on the liver.

Keywords: exposure, hepatotoxicity, lead, sub-chronic, scooping review



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Obesity and Knowledge Gap: A Cross-Sectional Study on Body Composition and Nutritional Knowledge in Banyumas

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Abstract

Obesity is a major public health problem characterized by excessive body fat and often associated with limited knowledge about healthy lifestyles. Understanding the relationship between knowledge and body composition is important for developing effective interventions. This study aimed to describe the level of nutritional knowledge and body composition among obese adults in Banyumas. This research used a cross-sectional design with a total of 66 obese adult respondents. Data were collected using a structured questionnaire to assess nutritional knowledge and body composition measurement to determine fat mass. Descriptive analysis was conducted to summarize the findings. The results showed that the majority of respondents had nutritional knowledge that still needs improvement. In addition, excessive body fat mass was still prevalent among the study population. The findings indicate that obese adults in Banyumas have insufficient nutritional knowledge and high fat mass. Efforts to improve nutritional education and lifestyle modification are needed to support obesity prevention and management in this population.

Keywords: adults, body composition, knowledge, nutrition, obese

An analytic study of knowledge retention among undergraduate medical students of Universitas Jenderal Soedirman

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Abstract

Knowledge retention is a major concern of medical students and educators since learning medicine requires students to master a lot of subjects in a short time. On the other hand, learners naturally forget a significant amount of information rapidly with the passage of time. This study was conducted to analyse knowledge retention of undergraduate medical students through the administration of two identical MCQ examinations, separated by a two-month interval. The study subjects consisted of 71 first-year and 64 fourth-year medical students of Universitas Jenderal Soedirman. The results demonstrated a decline in scores on the second examination compared to the first. The mean score reduction was 25% among fourth-year students and 14% among first-year students. Statistical testing using a paired t-test showed $p < 0.01$, indicating a significant difference between the first and second examination results. These findings suggest that students' knowledge retention decreased significantly after two months.

Keywords: knowledge retention, MCQ, medical education, medical students, natural forgetting

Renal Markers Associated with Diabetic Retinopathy in Patients with Type 2 Diabetes Mellitus in Banyumas, Central Java, Indonesia

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Abstract

Background: Diabetic retinopathy (DR) is a major microvascular complication of type 2 diabetes mellitus (T2DM). Renal markers such as microalbuminuria and estimated glomerular filtration rate (eGFR) have been proposed as indicators of systemic microvascular damage and may be associated with DR.

Objective: To analyze the association between renal function markers and the occurrence of DR in patients with T2DM in Banyumas, Central Java, Indonesia.

Methods: A cross-sectional study was conducted among T2DM patients attending outpatient clinics in Banyumas Regency. Data on demographic characteristics (age, sex), renal markers (microalbuminuria and eGFR), and DR status (based on fundus examination) were collected. Logistic regression analysis was performed to estimate odds ratios (OR) and 95% confidence intervals (CI) for the association between renal markers and DR, adjusting for age and sex.

Results: A total of 180 patients were included (mean age x years; y% female). The prevalence of DR was p%. Microalbuminuria was present in m% and reduced eGFR (<60 mL/min/1.73 m²) in k% of patients. Preliminary analyses suggested that both microalbuminuria and reduced eGFR were associated with higher odds of DR. Age showed a positive association, while sex was not statistically significant.

Conclusion: Renal markers, particularly microalbuminuria and eGFR, appear to be associated with DR among T2DM patients in Banyumas. These findings support the integration of simple renal assessments in DR risk stratification and screening programs, particularly in resource-limited settings.

Keywords: Type 2 Diabetes Mellitus, Diabetic Retinopathy, Renal Markers, Microalbuminuria, Estimated Glomerular Filtration Rate (eGFR)

Application of The NB-CAR Model in Dengue Hemorrhagic Fever Modelling

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Abstract

Dengue hemorrhagic fever (DHF) is an infectious disease caused by the dengue virus and transmitted by the bite of the *Aedes aegypti* mosquito. This research aimed to analyze the spatial distribution of DHF cases, identify factors influencing DHF incidence, and map the relative risk of DHF across regions/cities. Predictor variables include population density, the number of people living in poverty, the number of health facilities, the number of health workers, rainfall, and elevation. Because overdispersion was detected in the case data, the Negative Binomial Conditional Autoregressive (NB-CAR) model was selected to account for both this issue and spatial dependence. Descriptive statistics showed that Banyumas Regency had the highest number of cases, while Tegal City had the lowest. Furthermore, the model results indicated that Banyumas Regency exhibited the highest relative risk, whereas Pemalang Regency showed the lowest. In total, 13 regencies/cities exhibited relative risk values greater than one, suggesting a higher than expected number of DHF cases, while 22 regencies/cities had relative risk values less than one. According to the results of the NB-CAR model, for every one unit increase in population density, the number of DHF cases is estimated to increase by 0.00203 units.

Keywords: DHF, overdispersion, NB-CAR, relative risk, mapping

The Socio-Ecological Paradigm of Belief Communities as a Strategy for Sustainable Natural Resource Development

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Abstract

The purpose of this study is to analyze how cosmology, social norms, and the spirituality of the indigenous faith community shape harmonious interactions with nature as a sacred, dynamic, and interconnected whole. All are creations of God that must be respected as subjects. This study uses qualitative methods through literature study. Data was obtained from Google Scholar and Scopus with the criteria of articles published in the last 5 years (2020-2025). The keywords used are *believers, indigenous people, beliefs, ecological crisis, and environmental conservation based on local wisdom*. The collected data were analyzed using a descriptive-analytical approach to map the relationship between the social and spiritual systems of believers in environmental conservation practices.

The results of the study show that adaptive traditional ecological knowledge and customary laws practiced by indigenous people play a role as strategies for developing sustainable natural resource management. Rituals and social norms reinforce environmental ethics, limit overexploitation, and ensure community welfare in line with ecosystem health. Although believers still face stereotypes, negative stigma, and discrimination, their existence is important in maintaining the balance of nature. The socio-ecological paradigms of believers include: (1) a cosmological paradigm that views nature as a sacred entity that must be preserved; (2) a social-communitarian paradigm, in the form of customary rules and mutual cooperation in environmental conservation; (3) a spiritual-ethical paradigm that emphasizes the value of harmony, such as *memayu hayuning bawana*; and (4) a practical sustainability paradigm, which is the direct application of cosmological and spiritual values in resource management.

Keywords: Socio-Ecological Paradigm, Believers, Natural Resource Management

Application of Hanzawa Transformation to the Boundary Condition of Korteweg Model Fluid Motion

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Abstract

In this paper, we consider application of the Hanzawa transformation to the boundary condition of compressible fluid model of Korteweg type. The Hanzawa transformation is a mathematical technique used to convert free boundary problem into problem with fixed boundaries such as phase transition and fluid dynamics. First of all, we analyze an equation system with moving domains. By moving the problem to fixed domain, the complicated dynamics of the moving boundary are eliminated from the governing equations. This transformation a suitable methods for a quai-linear evolution equation in Banach space. This result can be used to find not only local well-posedness but also global well-posedness cases.

Keywords: Hanzawa transformation; Boundary Condition; Korteweg Model; Compressible Fluid

Digital-Based Strategy for Enhancing the Performance of State Civil Apparatus through Work From Anywhere

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Abstract

Digital transformation has driven the Indonesian government to adopt the Work From Anywhere (WFA) policy for the State Civil Apparatus (SCA), as stipulated in Regulation No. 4 of 2025 by the Ministry of Administrative and Bureaucratic Reform. Institutions such as the National Civil Service Agency (NCSA) and the Surabaya City Government have begun implementing this policy. This study explores strategies for improving SCA performance through the WFA scheme in a digital-based environment. Using a qualitative approach, this research relies on literature studies and secondary data, including government regulations, ministerial reports, the Electronic-Based Government System (EBGS) index, institutional performance reports, and studies on digital bureaucracy. The findings suggest that WFA has the potential to increase productivity and efficiency, particularly considering the characteristics of official duties and situational contexts. Effective integration of digital platforms and strong monitoring mechanisms are identified as key enablers. However, limited internet connectivity and gaps in digital competence present notable challenges. To address these, the study proposes strategies such as strengthening digital infrastructure, enhancing digital literacy among civil servants and the public, and optimizing performance monitoring through integrated applications. Accordingly, WFA can serve as a strategic tool for enhancing SCA performance while supporting the delivery of quality public services in the digital era.

Keywords: Work From Anywhere, Digital Transformation, State Civil Apparatus, Public Sector Performance, Digital Bureaucracy

Village Identity Change in the Concept of Smart Village in Indonesia

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Abstract

The long-term objective of this research is to reconstruct the theory of identity politics, particularly regarding changes in village identity, by exploring the cultural political aspects of village development as an area where society develops and adapts to the times. To achieve this long-term objective, the specific objectives of this research are divided into two stages. The first stage is the specific objective that has been achieved in the first year, namely understanding the significance of changes in village identity in the concept of smart villages in Indonesia which is carried out from 2 (two) perspectives: 1) top-down implemented smart villages through the implementation of pilot projects in various regions; 2) bottom-up implemented smart villages that depart from community initiatives carried out by local leaders and communities, such as what happened in Nglanggeran Village, Gunung Kidul Regency. While the second stage is the specific objective that must be achieved in the second year, namely: to obtain a description and formulation of a theory about identity politics in encouraging changes in village identity by using qualitative methods through a grounded research approach whose main activities begin with data exploration and end with theoretical generalization in the form of new theory construction or theory refinement. Located in Nglanggeran Village, which implements a bottom-up smart village approach, we understand that the identity politics that drives village identity change is one that prioritizes institution as identity leading its people to progress and equality with other communities. Identity politics is not only a struggle for group identity that creates equality among groups within a community, but also a struggle for institutional identity that can elevate equality and even superiority among communities in one region over communities in other regions.

Keywords: smart village, village change, identity politics, institutional identity struggle

**The Disconnect Between Village Potential and BUMDES Initiatives in Rural Development:
A Study of Rural Development in Indonesia**

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Abstract

This study presents an analysis of the operational efficiency of Village-Owned Enterprises (BUMDES) in rural areas, focusing on the alignment between village economic potential and the business initiatives undertaken by these BUMDES. The research used in-depth interview data collected from 32 villages. Based on this data, the study identified a significant trend of "misconnection," where BUMDES operations often fail to directly utilize the most prominent local resources.

These findings highlight critical gaps in rural development strategies. For example, many villages with abundant agricultural potential—such as Ajibarang Kulon Village, Panembangan Village, and Cilongok Village—have BUMDES that are not actively involved in agricultural production or trade. Instead, their focus is shifted to sectors such as services and tourism. This gap is also evident in villages with strong tourism potential, where a lack of strategic planning or investment (as seen in Karangmangu Village) has led to the underdevelopment of key assets. Similarly, potential in processed products or livestock is often overlooked by BUMDES, which instead pursue businesses that are not fully integrated with the village's existing economic strengths. This study concludes that while some BUMDES have been effective drivers of local economic growth, there is a widespread misalignment between village potential and BUMDES initiatives. This research suggests that for BUMDES to truly drive sustainable growth and improve community well-being, a more strategic and integrated approach is needed to ensure their business activities are directly connected to and actively develop the unique local potential of each village

Keywords: Rural Development, Village-Owned Enterprise (BUMDES), Economic Potential, Business Alignment, Local Economy

Improving Communication Competence of Mandarin Diploma Program Graduates through Grammar Mastery

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Abstract

This research analyzes the mastery of grammar and its influence on the readiness of Mandarin Diploma Program graduates as communicators. Graduates are expected to meet the demands of the business and industrial sectors by possessing effective Mandarin communication skills, both written and oral. However, students frequently face a key obstacle: a lack of mastery of basic grammar, which hinders their ability to construct sentences and select vocabulary accurately. This study uses a descriptive qualitative approach. Data were collected through in-depth interviews, classroom observations, and a literature review. The subjects of this research were students from the 2023 and 2024 cohorts, Mandarin language lecturers, and industry partners who employ the graduates. The data were analyzed to identify learning obstacles, student needs, and the gap between the graduate profile and industry demands. The research findings offer solutions to these learning challenges, which are formulated into a targeted and practical module to be used in the learning process.

Keywords: communicators, mandarin grammar, module, graduate profile, business and industrial sectors

Analysis of Factors Influencing The Effectiveness of The Whistleblowing System With Professional Commitment As A Moderating Variable in Regional Apparatus Organizations in Banyumas and Purbalingga Region of Indonesia

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Abstract

This study employs a quantitative methodology to examine the elements affecting the effectiveness of the whistleblowing system, with professional commitment serving as a moderating variable within Regional Apparatus Organizations (OPD) in Banyumas and Purbalingga Regencies. This paper analyzes multiple factors believed to affect the effectiveness of the whistleblowing system, including behavioral attitudes, normative values, employee solidarity, ethical climate, organizational commitment, Machiavellianism, professional commitment, and the severity of violations. Concurrently, the characteristic believed to attenuate the impact of these elements is professional commitment. The participants in this study were the heads of OPDs in Banyumas and Purbalingga Regencies, with Banyumas comprising 66 OPDs and Purbalingga consisting of 45 OPDs. The overall number of participants in this study was 111 OPD leaders. The results of this study demonstrate that nearly all independent variables—behavioral attitudes, normative values, ethical climate, organizational commitment, and severity of violations—positively influence the effectiveness of the whistleblowing system. In another side, employee unity and Machiavellianism do not influence the effectiveness of the whistleblowing system. Moreover, the variable of professional commitment amplifies the impact of behavioral attitudes, normative values, ethical climate, organizational commitment, and the severity of breaches on the effectiveness of the whistleblowing system. Conversely, professional commitment does not mitigate the impact of employee solidarity and Machiavellianism on the effectiveness of the whistleblowing system.

Keywords: whistleblower system, behavioral attitudes, values, employee solidarity, ethical climate, organizational commitment, Machiavellianism, severity of violations, professional commitment

Profiling Customers and Their Preference Toward Sakub Sheep Breed in Brebes Regency, Indonesia

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Abstract

The Sakub breed is a newly developed sheep breed originating from the Sakub Highland area in Brebes Regency. Due to its breed being categorised as a new breed, there is only a few pieces of information available about the sheep's market. Based on the information below, the current research aimed to determine the Sakub sheep customer profile and preferences. The survey method was employed to find out the customer profile and preferences. The locations of the research were selected purposively, where Pandansari, Sirampog, and Bumiayu subdistricts of Brebes regency were selected as the research location. The data was collected using a structured questionnaire by interviewing Sakub sheep customers. The results showed that the customer average age was 44,86 years old, with 8,72 years of education. Most of the customers have about 15,70 years in the livestock business. The number of animals purchased per month is 3,66 times, with an average number of animals purchased per transaction was 5,35 heads. The monthly income of the customer was 3.575.044 IDR. The customer preferences for animal attributes were categorised into four categories. The first category was animal attribute preference, which the customer most preferred in sheep body weight (85,86%), followed by physical appearance (73,74%), and price (62,63%). The second category was animal sex; most of the customers preferred male sheep (62,63%). The animal status category, Lamb (43,43%) was the most favourite type of sheep by the customer, the second was young sheep (42,42%), and the third was adult sheep (26,26%). The customer's maximum budget was 2.246.464 IDR. Most of the customers could pay more money for vaccine-certified animals, but not for the animals that have a pedigree certificate and health recording. The conclusion is that the male lamb with appropriate body weight, good physical appearance, and a complete vaccine certificate is the most preferred Sakub sheep classification by the customer.

Keywords: Sakub sheep, Customer profile, Customer preference, Sheep farming, Brebes regency

Green Innovation at SMK Muhammadiyah 3: Developing Ecopreneurship Attitudes Through Aquaponics-Based Project Learning

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Abstract

This Community Service activity aims to develop ecopreneurship attitudes among SMK Muhammadiyah 3 students through the implementation of project-based learning using an aquaponics system. Aquaponics was chosen as a green innovation approach because it integrates fish and plant cultivation into one efficient and environmentally friendly system. The activity method used an approach that included conditioning, brainstorming, providing materials, gathering responses from the target audience using a Google Form link, online consultation and mentoring via WhatsApp group, online and offline monitoring and evaluation, and finally, reflection and summarization of all activities. The results showed that students' active involvement in designing, building, and maintaining the aquaponics system fostered their understanding of the principles of sustainability, resource efficiency, and the potential for environmentally-based businesses. Ecopreneurship is reflected in students' ability to identify green business opportunities, manage risks, and innovate in waste utilization and product processing. Furthermore, this project learning enhances students' collaboration, creativity, and social responsibility towards local environmental issues. Based on these activities, it can be concluded that aquaponics is an effective contextual learning tool that not only strengthens technical competency but also fosters sustainable entrepreneurial character.

Keywords: aquaponics, ecopreneurship, green innovation, Project-Based Learning

The Impact of Accounting Application on The Financial Performance of SMES: A Bibliometric Study

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Abstract

This study aims to systematically examine how accounting applications contribute to the financial performance of small and medium enterprises (SMEs) through a bibliometric approach. Data were collected from the Scopus and Web of Science databases for the period 2010–2024, covering literature on accounting information systems, digital accounting applications, and SME financial performance. The analysis was conducted using keyword co-occurrence, theme mapping, and research trend identification.

The results of the study show a significant increase in the number of publications related to this topic, especially on the issues of cloud accounting, financial statement quality, and financial literacy. In line with previous empirical findings, accounting information systems and financial statement quality have been proven to improve SME performance (Christanty et al., 2023). However, other studies indicate that technology adoption does not always have a significant impact, even though accounting and managerial methods contribute positively to financial performance (Saksono et al., 2024). In conclusion, this bibliometric study highlights opportunities for further research emphasizing the longitudinal evaluation of the effectiveness of accounting applications, digital system integration, and the moderating role of financial literacy and organizational support.

Keywords: accounting applications, SMEs, financial performance, bibliometric

Multimodal Semantic Analysis of Tourist Signage in Baturraden

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Abstract

This article examines the interplay between visual and verbal elements in tourist signage at Lo-kawisata Baturraden, an Indonesian destination that faces intercultural communication challenges. Using a qualitative multimodal semiotics approach, fifty signage samples were analysed through the theoretical frameworks of Halliday and Lotman. Findings reveal distinctive semantic patterns that combine local and universal languages, demonstrating moderate effectiveness for intercultural communication despite symbolic ambiguities. A tendency to prioritise universal functionality over the representation of regional cultural identity was observed, though subtle cultural motifs remain embedded. This balance aligns with SDG 11 (Sustainable Cities and Communities) and SDG 8 (Decent Work and Economic Growth) by encouraging culturally inclusive yet economically viable tourism. The integration of local language and heritage in public signage supports SDG 4 (Quality Education) and SDG 16 (Peace, Justice, and Strong Institutions) by affirming linguistic rights and fostering social cohesion through shared cultural narratives (UNESCO, 2021). Furthermore, the localisation of global health messages (LWBR-50) resonates with SDG 3 (Good Health and Well-being), highlighting how cultural semiotics can enhance public communication during crises. The study contributes to multimodal semiotics in tourism research by elucidating how signage mediates between local identity and global accessibility. It also offers practical insights for destination managers in designing inclusive and culturally resonant communication strategies.

INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT

Keywords: Baturraden, cultural semiotics, multimodal semantics, tourism, visual communication

Anti-Biofilm Potential of Carboxymethyl Chitosan-Encapsulated Torch Ginger Extract Nanoparticles in Oral Pathogens

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Abstract

An imbalance in the oral cavity's microbial biofilm can lead to dental caries and periodontitis. Torch ginger (*Etlingera elatior*) possesses antibiofilm properties that may be enhanced through nanoparticle formulation using carboxymethyl chitosan. This study aimed to evaluate the biofilm degradation activity of torch ginger flower extract nanoparticles formulated with carboxymethyl chitosan against oral pathogenic bacteria. An in vitro laboratory study was conducted with five treatment groups: torch ginger extract nanoparticles at concentrations of 15, 25, and 35 mg/mL; a positive control (0.2% chlorhexidine gluconate); and a nanoparticle formulation without extract (formulation control). Biofilm degradation was assessed using the microtiter plate assay method with 1% crystal violet staining. All nanoparticle concentrations exhibited significant biofilm degradation activity ($p < 0.05$) against *Streptococcus sanguinis*, *Streptococcus mitis*, *Fusobacterium nucleatum*, *Prevotella intermedia*, and *Porphyromonas gingivalis*. The 15 mg/mL concentration showed equivalent effectiveness to 0.2% CHX against *S. sanguinis*; 25 mg/mL against *F. nucleatum* and *P. gingivalis*; and 35 mg/mL against *S. mitis* and *P. intermedia*. Torch ginger extract nanoparticles based on carboxymethyl chitosan are effective in degrading oral bacterial biofilms and demonstrate potential as a natural alternative for plaque control.

Keywords: Torch ginger, biofilm degradation, carboxymethyl chitosan, nanoparticles.

An Exploration of the Use of Sonkeigo by Migrant Caregivers in Japan: Linguistic and Social Perspectives

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Abstract

Japan is facing a demographic crisis marked by a significant population decline and a rapidly growing elderly population. As a result, there is an increasing demand for workers in the caregiving sector. To address the shortage of domestic caregivers, Japan has opened employment opportunities for migrant workers, particularly from Southeast Asia, including Indonesia.

The urgency of this research lies in the challenges faced by migrant caregivers in using Sonkeigo, an honorific form within the Japanese language system. Sonkeigo is not merely a linguistic element but also reflects the social norms and ethical values of Japanese society. Therefore, mastering sonkeigo is crucial for maintaining good relationships with elderly care recipients and for adapting to social and ethical norms.

The purpose of this study is to examine how migrant caregivers in Japan use sonkeigo in their communication processes, the challenges they face, and the strategies they employ to overcome difficulties in its usage. A qualitative research method will be used to explore the experiences, perceptions, and challenges encountered by Indonesian migrant caregivers in communicating and adapting through the use of sonkeigo in their workplaces. This qualitative approach allows for an in-depth and holistic understanding of the linguistic, social, cultural, and behavioral phenomena experienced by the migrants.

The phenomenological research design will focus on the subjective experiences of Indonesian migrants in using sonkeigo and how they interpret challenges and develop adaptive strategies. This study aims to provide recommendations for labor-sending institutions in Indonesia to offer simulation-based sonkeigo training, thereby preparing professional caregivers.

The expected research outputs include a publication in a reputable international journal, specifically the Forum for Linguistic Studies (Scopus preview), with the proposed title "An Exploration of the Use of Sonkeigo by Indonesian Migrant Caregivers in Japan: Linguistic and Social Perspectives." Additionally, this research aims to produce a teaching book on the use of sonkeigo for learners of Japanese language.

Keywords: Caregivers, Migrants, Sonkeigo, Sociolinguistics, Communication Challenges

Keigo and Japanese Family Communication: A Phenomenon of the Maintenance or Shift of Honorific Language within Intra-Family Communication in Japan

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Abstract

Keigo (honorific language) and family communication in Japan reflect the existence of social hierarchies that shape interactions among family members. In traditional families during the Shōwa period, which typically followed an extended family structure, the use of keigo was well maintained. In contrast, modern Japanese families tend to adopt the use of Futsūgo (plain form) in their daily communication. The phenomenon of shifting keigo use needs to be analyzed to identify the causes of this shift as well as its impact on family relationships.

The simak-catat (observe-and-note) method is employed to examine the linguistic styles used in Japanese family communication. This involves observing and recording dialogues that contain markers of keigo. The data are drawn from films representing the Shōwa period (traditional) and the Reiwa period (modern). The results of the data analysis are validated through interviews with Japanese families representing both periods.

The findings indicate that globalization, media and technological developments, and changes in Japanese family structures have significantly contributed to a dual phenomenon: the maintenance or the shift of keigo. This research will contribute to a deeper understanding of keigo within Sociolinguistics, particularly in relation to the concept of speech communities, by focusing on the social factors that underlie communication styles.

The dissemination of this research will be conducted through presentations at international conferences and publications in reputable international journals. The research will also produce an intellectual property-registered concept of the dual phenomenon of keigo in Japanese family communication, as well as a reference book addressing the theme of the maintenance or shift of keigo within Japanese family contexts.

Keywords: Keigo, Family Communication, Maintenance, Shift, Social Factors

Applying Media Information Literacy to Foster University Students' Critical Thinking Skills in Argumentative Writing: A Case Study at Jenderal Soedirman University

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Abstract

Media Information Literacy (MIL) has become one of the essential skills in the digital era, particularly for university students who are expected to read, comprehend, and write critically. Media Information Literacy is also mandatory for students, enabling them to filter, evaluate, and utilize information critically. Unfortunately, various studies indicate that students' level of media information literacy remains low, which may hinder their future academic and professional productivity. In the context of English language teaching, MIL can be employed to enhance integrated reading and writing skills. However, only a limited number of studies have examined the integration of Media Information Literacy into English language teaching at the tertiary level. Therefore, this study aims to explore the impact of Media Information Literacy on students' reading and writing abilities.

This research adopts a classroom action research approach involving 200 students enrolled in an Argumentative Writing class at Universitas Jenderal Soedirman (UNSOED) as respondents, using surveys and in-depth interviews as instruments. The data were analyzed through descriptive statistics and thematic analysis.

The study is also expected to identify various opportunities to strengthen students' media information literacy, such as integrating MIL into English language learning to enhance students' critical thinking skills, thereby enabling them to construct sound and well-structured arguments. The findings are anticipated to provide a foundation for universities to develop more strategic and sustainable media literacy programs. This initiative aligns with the vision of Universitas Jenderal Soedirman to provide internationally recognized education.

Keywords: Critical Thinking, Media Information Literacy, University Students, Argumentative Writing

Revealing the Self in Kaiman Sang Pendiri Banyumas: A Travel Literature Study as an Effort to Enhance Cultural Awareness among Universitas Jenderal Soedirman Students

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Abstract

Revealing the Self refers to the portrayal of the self as *alterity*—a complex process of confrontation and negotiation that involves both difference and similarity between alterity and identity. The concept of *Revealing the Self* proposed by Carl Thompson (2012) is employed to analyze the self-revelation of Kaiman, the founding figure of Banyumas, as depicted in the narrative *Kaiman Sang Pendiri Banyumas* excerpted from Babad Banyumas. This study is necessary to enrich the body of literary scholarship on Banyumas, which has long been marginalized and overlooked by the Banyumas community itself. The story of *Kaiman Sang Pendiri Banyumas* contains philosophical reflections on the history and foundational figure of Banyumas, which have yet to be explored through the lens of travel literature.

The limited understanding among the Banyumas community—including academics—of the cultural values embedded in Banyumas literature, particularly in the context of historical journeys and local culture, makes this research an urgent endeavor. This aligns with the vision of Universitas Jenderal Soedirman to promote rural resource development and local wisdom, while also contributing to the achievement of the United Nations Sustainable Development Goals (SDGs) by providing quality education. Understanding culture through Banyumas literature is expected to foster greater cultural awareness among students at Universitas Jenderal Soedirman.

A travel literature analysis of this narrative reveals encounters between different communities and cultures, which in turn shape a new social order that transcends local social and cultural boundaries. The *Simak* method is employed to collect significant narrative data. The data are then analyzed using Carl Thompson's Travel Writing approach combined with a historical method. Data validation is carried out through logical inference and syllogistic analysis of historical documents containing empirical relationships.

The findings will narrate how Kaiman discloses his self, shaped by his personal journeys and connected to the cultural values of Banyumas. His self-revelation embodies a figure who exercises freedom with responsibility. The dissemination of this research will be conducted through scholarly presentations at international seminars and publications in national academic journals. An additional output will be a reference book on travel literature.

Keywords: Banyumas, Cultural Awareness, Kaiman, Kesadaran Budaya, Revealing the Self, Travel Writing

Moral Distress among Clerkship Students at The Faculty of Medicine Universitas Jenderal Soedirman

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Abstract

Medical students who are in their clinical years (clerkship) often experience moral distress. This usually happens when they are involved in situations that conflict with their personal moral values but cannot be acted upon due to various reasons. This study is aimed to explore the experience and determine the relationship between the frequency and intensity of moral distress among medical students during their clerkship at the Faculty of Medicine, Universitas Jenderal Soedirman. It is a mixed method study, combining quantitative and qualitative methods. In the quantitative phase, data were collected online using the Moral Distress Scale questionnaire, involving 50 students. The results show a positive relationship between frequency and intensity of moral distress ($r = 0.362$; $p = 0.002$). In-depth interviews were also conducted with 10 students to understand their perception and thoughts. The most frequent cases causing moral distress to students include lack of respect due to the hierarchical culture dan patients arriving in late stages due to limited access to healthcare. The study concludes that the frequency of distressing events has a major contribution to the intensity of moral distress. Students also highlighted the importance of institutional support for the various ethical problem students encounter during clinical training.

Keywords: moral distress, ethical dilemma, clerkship, clinical training, medical student

POLITIK PERLINDUNGAN SOSIAL INKLUSIF DI DAERAH: Ormas Islam, Ketimpangan dan Penyelesaian Politik dalam Program Jaminan Kesehatan di Pekalongan

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Abstract

Penelitian ini adalah kelanjutan dari penelitian sebelumnya yang mengeksplorasi kapasitas pemerintah dalam pelaksanaan program jaminan sosial di daerah. Sebagai kelanjutan dari itu, penelitian ini mengalihkan perhatian pada kapasitas masyarakat sipil (NU dan Muhammadiyah) dan kontribusinya dalam mengatasi problem ketimpangan sosial melalui dukungan terhadap program jaminan sosial di daerah. Penelitian ini diharapkan memberikan perspektif berbeda tentang kapasitas organisasi masyarakat sipil dalam mendukung agenda kebijakan kesejahteraan pemerintah. Tujuan penelitian ini adalah mendapatkan data dan informasi tentang sejauh mana kontribusi Ormas Islam dalam mendukung perluasan program jaminan sosial dengan menguji teori penyelesaian politik (political settlement). Data dikumpulkan melalui observasi dan survei eksperimental terhadap pengurus, anggota aktif dan simpatisan dua Ormas Islam arus utama di Kota Pekalongan. Penelitian ini berangkat dari asumsi bahwa kontribusi dan dukungan organisasi masyarakat sipil terhadap agenda kebijakan kesejahteraan sangat ditentukan oleh konfigurasi elit, distribusi sumberdaya/insentif, institusi dan jaringan informal serta kapasitas penyelesaian konflik dan penegakan aturan.

Keywords: Ormas Islam; ketimpangan; penyelesaian politik; jaminan kesehatan; jaminan sosial

Improving the User Experience of Electric Vehicle Charging through PLN Mobile: Evidence from Indonesia

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Abstract

As electric vehicle (EV) adoption expands, the usability of digital platforms becomes crucial to supporting sustainable transportation. In Indonesia, PLN Mobile plays a central role in accessing Public Electric Vehicle Charging Stations (PEVCS), yet users frequently encounter charging failures, payment errors, equipment damage, and long queues. This study evaluated the usability of the PLN Mobile application using a multi-phase methodology that combined qualitative and quantitative approaches. Field observations and interviews first identified user challenges, which informed the design of a Heuristic Evaluation instrument. Five evaluators applied Nielsen's heuristics and identified 21 usability issues, with the most severe being a mismatch between system language and user expectations (severity score: 3.4). The most frequent issues (19.04%) related to the visibility of system status and aesthetic and minimalist design. These findings highlight the need for localized interface design and improved system reliability, offering actionable insights for enhancing user experience and fostering EV adoption.

Keywords: Heuristic Evaluation, Application Design, Digital Platform, and PLN Mobile.

Stakeholder Perceptions of the Failure of Organic Rice Cultivation in Purbalingga Regency from the Financing Aspect

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Abstract

Organic rice cultivation in Penolih Village, Purbalingga Regency, received INOFICE Organic certification (2018-2020), but the certification was revoked in 2021. This study aims to examine stakeholders' perceptions of the role of financing in the failure of organic rice cultivation in Penolih Village, Purbalingga Regency. Data were obtained through Focus Group Discussions (FGDs) involving farmers and administrators of the Mekarsari Farmers' Group (Gapoktan Mekarsari), Penolih Village officials, Kaligondang District Extension workers, and the Purbalingga Regency Agriculture Office. The research method used was qualitative-descriptive with FGDs. The results of the discussions indicated that although capital is a crucial need, most farmers still rely on personal funds. Access to banking and cooperative financing is considered suboptimal due to complicated procedures, collateral requirements, and mandatory membership. Government assistance is limited to grants, fertilizer subsidies, and technical training, while financial literacy training is unevenly distributed. The majority of stakeholders believe that the failure of organic rice cultivation is caused by marketing aspects, low farmer independence, and high certification costs. The practice of obtaining capital through middlemen remains widespread, leaving farmers tied to the debt bondage system. The main obstacles to agricultural financing are collateral and complex bureaucracy. Therefore, solutions are proposed to simplify credit procedures, increase capital support, strengthen farmer group cash flows, and partner with the private sector and village-owned enterprises (BUMDes). These findings indicate that farmers in Penolih Village need not only financial support but also support for independence in farm management and market strengthening.

Keywords: agricultural financing, fgd, failure of organic rice cultivation, stakeholders

The Phytochemical Screening of *Cinnamomum burmannii* Extract and its Activity on β -Glucosidase

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Abstract

The herbals, as a preventive measure, continue to be explored, with one notable example being *Cinnamomum burmannii* as an antidiabetic agent. This study aims to determine the profile of the compound group of cinnamon bark extract (*C. burmannii*) and its activity in inhibiting the β -glucosidase enzyme. The research was conducted as an in vitro experimental study, including stages of extraction, phytochemical screening, and testing for β -glucosidase enzyme inhibition activity. Phytochemical screening was performed using test tube reagents and chromatographic patterns with Thin Layer Chromatography (TLC). The phytochemical screening identification included tests for flavonoids, phenols, steroids, terpenoids, saponins, tannins, and alkaloids. β -glucosidase inhibition activity was assessed using components of the *Micro β -Glucosidase Activity Assay Kit* (Abbkine). The obtained data were analyzed descriptively, and the percentage of inhibition was calculated to determine the degree of β -glucosidase enzyme inhibition, followed by the calculation of IC₅₀ values. The Phytochemical screening of *C. burmannii* using reagent methods indicated the presence of flavonoids, phenols, terpenoids, saponins, and tannins. In the TLC tests, compound groups were identified as flavonoids with an R_f value of 0.12, phenols with R_f values of 0.10, 0.38, and 0.53, and steroids with R_f values of 0.18 and 0.50. *C. burmannii* exhibited β -glucosidase enzyme inhibition activity, with inhibition percentages at concentrations of 500, 250, 125, 62.5, and 31.25 ppm amounting to 60.06%, 51.94%, 44.61%, 44.28%, and 41.25%, respectively. The IC₅₀ value of *C. burmannii* was found to be 233.32 pp. The *C. burmannii* contains flavonoid, phenol, and terpenoid groups according to reagent tests, while chromatographic patterns showed the presence of flavonoid, phenol, and steroid groups. The β -glucosidase enzyme inhibition activity test demonstrated its inhibitory potential. Flavonoid compounds in *C. burmannii* played a key role in inhibiting the β -glucosidase enzyme.

Keywords: *Cinnamomum burmannii*, screening, compounds, in-vitro and β -glucosidase

Help-Seeking Behavior for Mental Health Among Pregnant Women in Rural Indonesia

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Abstract

Perinatal mental health disorders are a global health issue with substantial implications for maternal and child well-being. Despite their significance, help-seeking behavior for mental health among pregnant women in rural areas remains underexplored, particularly in Indonesia, where access to professional services is limited, and cultural norms position the family as the primary source of support. This study aimed to examine the actual and intended help-seeking behaviors for mental health among pregnant women residing in rural regions of Indonesia. A cross-sectional study was conducted involving 125 pregnant women with Edinburgh Postnatal Depression Scale (EPDS) scores ≥ 13 . Respondents were asked about their mental health help-seeking behavior over the past three months and their future intentions regarding sources of support, including family, community and healthcare providers. A descriptive analysis was employed to identify patterns in both actual behavior and future intentions. In the past three months, the majority of respondents sought help from their husbands (84%), parents (64.8%), and general healthcare providers (68.8%). Only 40% consulted mental health professionals, and 38.4% reported not perceiving a need for such services. In contrast, future intentions showed an increase, with 76.8% planning to access professional mental health services, alongside continued reliance on husbands (100%) and parents (92%). Intentions to seek help from friends (50.4%), neighbors (42.4%), and religious leaders (40%) remained relatively low. The findings highlight the central role of husbands and parents in providing mental health support to pregnant women in rural Indonesia, while the utilization of professional services remains limited despite higher intentions. Bridging the gap between actual behavior and intention requires interventions that engage family members, reduce stigma, and integrate mental health services into primary maternal healthcare.

Keywords: mental health, pregnant women, help-seeking behavior, rural population, primary health care

Study on Inhibiting Factors of Smart Village Implementation in Karangsoka Village, Kembaran Sub-district, Banyumas Regency

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Abstract

The digital divide between urban and rural areas in Indonesia poses a major challenge in supporting inclusive digital transformation. One key aspect of this divide is digital literacy, which affects the community's ability to access, understand, and utilize digital technology optimally. This study focuses on analyzing the level of digital literacy based on age groups in rural areas, using Karangsoka Village as a case study. Low digital literacy, especially among the older generation, hampers the implementation of the Smart Village program and Village Information System (SID), which are designed to improve the efficiency of village governance. The main objectives of this research are to measure digital literacy levels across age groups, analyze the factors influencing digital literacy, and develop effective training models to enhance the digital skills of rural communities. The research methods include quantitative surveys to assess digital literacy levels, in-depth interviews with village officials and community members, and experimental digital training specifically designed for the elderly. An analysis of Google Trends related to the topics "Smart City" and "Smart Village" in Indonesia since August 2020 shows that the term "Smart City" consistently ranks higher in popularity compared to "Smart Village." This reflects the disparity in public attention between urban and rural digitalization. The low number of searches related to Smart Village indicates limited media exposure, low digital literacy in rural areas, and suboptimal promotion and implementation of related policies. Further analysis of two villages—Karangsoka (Banyumas) and Mangunegoro (Purbalingga)—reveals stagnant and low search trends, indicating limited digital awareness among rural communities. These findings underscore the need for more inclusive communication strategies, improved ICT infrastructure, and the involvement of local communities and youth in promoting rural digital transformation. With the right interventions, Smart Villages have great potential to evolve as part of a fair and equitable digital development.

Keywords: Keywords: smart village; digital literacy; rural community; transformation; inclusive.

How to Protect the Educational Rights of Children of Indonesian Migrant Workers in Malaysia

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Abstract

This study explores the right to education for children of Indonesian migrant workers (PMI) in Malaysia by comparing conditions in Sabah and Kuala Lumpur. Using a qualitative and comparative approach, it analyzes facilitation models, challenges, and policy implications. In Sabah, Community Learning Centers (CLC) provide relatively organized access, though limited in resources and formal recognition. In Kuala Lumpur, despite better infrastructure, migrant children face more complex barriers related to legal status, nationality, and entry to public schools. Both regions share problems of undocumented status and weak legal protection but differ in institutional responses and social dynamics. The study concludes that protecting PMI children's educational rights requires stronger bilateral legal frameworks, community-based initiatives, and the strategic use of education in Indonesia–Malaysia diplomacy.

Keywords: community empowerment, child protection, migrant workers, right to education, soft power diplomacy

Mapping Economics Teachers' Needs in Developing a Hots-Oriented TPACK Self-Assessment Model

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Abstract

This study aims to map the needs of economics teachers in Banyumas Regency, who are members of the Economics Subject Teachers' Forum (MGMP Ekonomi), for the development of a Technological Pedagogical Content Knowledge (TPACK) self-assessment model oriented to High Order Thinking Skills (HOTS). The research employed a quantitative descriptive approach with the MGMP Ekonomi Banyumas economics teachers as respondents. Data were collected using a needs questionnaire designed based on TPACK and HOTS indicators, and analysed descriptively through frequency distribution and percentages. The findings reveal that most economics teachers have recognised the importance of integrating technology into economics teaching, yet they still face challenges in implementing HOTS-based learning strategies effectively. Furthermore, teachers expressed the need for a self-assessment instrument that enables systematic reflection on their TPACK competence. These results highlight the urgency of developing an HOTS-based TPACK self-assessment instrument to support economics teachers' professional competence and enhance the quality of economics learning in senior high schools, particularly in Banyumas Regency.

Keywords: Economics Teachers; TPACK; HOTS; Self-Assessment Instrument

Involment of Adolescent in Traditional Rituals as a Model of Cultural Inheritance in Bonokeling Community

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Abstract

The Bonokeling community has various local wisdom in carrying out its life. Today, the community has a big challenge to maintain and pass on the existence of local wisdom to its younger generation. Therefore, this research aims to explore various strategies carried out by the Bonokeling indigenous community in the process of cultural inheritance in the midst of the increasingly modern development of the times. This study uses a qualitative method with a phenomenological approach. The source of the research data came from elders and leaders of the Bonokeling community, youth groups, and people living in Pekuncen Village, Jatilawang District, where this community lives. The determination of informants uses purposive sampling techniques with interactive data analysis techniques. The results of the study found that the elders of the Bonokeling Community carried out a strategy by involving children and adolescents as early as possible in various ritual activities held. The form of involvement is in the form of division of labor according to the age group of children and adolescents and the abilities possessed by each child and adolescent. Teenagers are assigned roles such as activity planners, procedure coordinators, receptionists, and security personnel during the implementation of the ritual. The conclusion of this study shows that involving adolescents in various traditional ritual activities is a fairly effective way to introduce and transmit various ritual knowledge and practices to the younger generation in the Bonokeling Community.

Keywords: rituals, cultural heritage, indigenous communities, youth, Bonokeling

Policy Convergence and Divergence in Community-Based Tourism: Comparative Lessons for ASEAN Sustainable Development

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Abstract

Community-based tourism (CBT) has become an essential strategy for attaining Sustainable Development Goal 11 throughout Southeast Asia; yet, implementation methods differ markedly due to unique cultural and administrative circumstances. This study analyzes policy convergence and divergence in CBT development through a comparative examination of Chonburi Province, Thailand, and Banyumas Regency, Indonesia, to extract insights for ASEAN sustainable development strategies. Employing a qualitative technique focused on Focus Group Discussions, we involved several stakeholder groups, including local government officials, community leaders, tourism operators, residents, and civil society members from both regions during a six-month period. Our findings indicate notable policy alignment in environmental sustainability aims and community empowerment goals, however difference is observed in governance frameworks, stakeholder engagement methods, and cultural preservation strategies. Chonburi showcases better developed public-private partnerships and infrastructure advancements, whereas Banyumas displays more robust community-driven projects and incorporation of traditional culture. Both regions encounter analogous issues in reconciling economic development with environmental preservation and cultural authenticity. This research offers a comprehensive cross-cultural framework for the formulation of sustainable tourism policies and presents evidence-based recommendations for aligning Community-Based Tourism plans among ASEAN member states. These findings facilitate regional collaboration in attaining SDG 11 while honoring local cultural settings and administrative capabilities.

Keywords: : community-based tourism; policy convergence; ASEAN sustainable development; cross-cultural governance; stakeholder participation

Financial Literacy of Students in the Development Economics Program at Universitas Jenderal Soedirman

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Abstract

The level of financial literacy among students in Indonesia is still low. This is in accordance with the results of the *Otoritas Jasa Keuangan* survey in 2022. Financial literacy is a fundamental requirement for individuals in managing their finances. The aspects of financial literacy used in this study are basic personal finance knowledge, savings and loans, insurance, and investment. This study aims to determine the level of financial literacy among students in the Development Economics Program. This is a descriptive study conducted on active students in the Development Economics Program from the 2022 to 2025 cohorts. The population consisted of 688 active students. The sampling technique used was purposive sampling. The data collection technique was through the distribution of research instruments in the form of questionnaires, while the data analysis technique used was descriptive analysis. The results of the study show that the level of financial literacy of active students in the Development Economics Study Program is in the moderate category. This level of financial literacy still needs to be improved so that students can avoid fraudulent investments and online loans.

Keywords: Financial Literacy, Students, Development Economics, Savings, Investment

Facilitating Access to Education for Children of Indonesian Migrant Workers in Malaysia: A Comparison of Sabah and Kuala Lumpur

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Abstract

This article aims to compare the facilitation of access to education for children of Indonesian migrant workers (PMI) in Sabah and Kuala Lumpur, Malaysia. Data from Bank Indonesia and the Indonesian Migrant Workers Protection Agency (BP2MI) show that there were 2.7 million migrant workers in Malaysia in 2020. PMI have made a significant contribution to Indonesia's state income. At the same time, PMI contribute to the development and welfare of Malaysia. However, PMI still face many problems. One important issue for PMI in Malaysia is official marriage registration, as this can impact the provision of basic rights and education for the children of Indonesian migrant workers. In fact, the right to education is an obligation that must be fulfilled by the Indonesian government. Learning facilities for PMI children in Malaysia need to have a clear model to facilitate proper and targeted education. Using qualitative research methods, the author used interviews and library documents for data collection. The results of the study indicate that the community learning center in Sabah is running better than the Sanggar Belajar in Kuala Lumpur, both in terms of availability, accessibility, acceptability, and adaptability.

Keywords: community learning center, educational rights, Indonesian migrant workers, role of the Indonesian government, sanggar belajar

The Laplacian Energy on the Generalized Total Graph of the Comutative Ring of Integers Modulo

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Abstract

This research investigates the Laplacian energy on the generalized total graph of the commutative ring of integers modulo n , where n is even. Laplacian energy is defined as the sum of the absolute differences between the Laplacian eigenvalues of a graph and its average degree. The method employed in this study involves determining the characteristic polynomial of the Laplacian matrix and Laplacian spectrum. The research show that the generalized total graph of comutative ring for even n can be decomposed into two disjoint complete graphs with n vertices and the Laplacian energy (LE) of the generalized total graph of integers modulo n , for even n , is given explicitly by $LE = 4n - 4$. This result contributes to the broader study of algebraic graph theory, particularly in the field of graph energy, and provides a reference point for future research exploring Laplacian energy on other graph classes or alternative matrix representations.

Keywords: Graph theory, Laplacian energy, generalized total graph, comutative ring of integer modulo, spectral graph theory

Institutional Conflicts in Coastal Tourism Management: A Multi-Stakeholder Collaborative Governance Model for Sustainable Development Goals Achievement

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Abstract

Institutional fragmentation in coastal tourist management presents considerable obstacles to attaining Sustainable Development Goals, especially in poor nations where overlapping jurisdictions result in governance impasses. This study investigates the intricate institutional conflicts between military and civilian authorities in Cilacap Regency, Indonesia, where jurisdictional disputes have led to the total cessation of coastal tourism revenue, plummeting from IDR 2.7 billion to zero since 2019, while concurrently intensifying environmental degradation, including significant coastal abrasion and pollution. The study seeks to examine the mechanisms of institutional conflict and design a collaborative governance model with multiple stakeholders that harmonizes conflicting interests while facilitating the attainment of SDG 13 (Climate Action) and SDG 14 (Life Below Water). This study utilizes game theory analysis and multi-stakeholder assessment approaches to quantify the benefits and costs of cooperation among important actors, including local government, military authorities, and third-party companies. Research indicates that institutional fragmentation, regulatory impediments to inter-governmental income sharing, and the lack of formal collaborative channels are the principal challenges to sustainable coastal management. The study introduces a novel collaborative governance architecture that integrates regional public enterprises (BUMD) as intermediary entities, facilitating legal cooperation while maintaining stakeholder independence. This model presents substantial implications for addressing analogous institutional conflicts in disputed coastal regions worldwide, offering evidence-based policy recommendations that convert governance impasses into sustainable development prospects while promoting climate resilience and marine conservation goals.

Keywords: collaborative governance, institutional conflicts, coastal tourism, sustainable development goals, multi-stakeholder partnerships

Learning Moral Socialization from the Bonokeling Community

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Abstract

Amidst the widespread moral decadence in various layers of society, the Bonokeling Community still firmly upholds moral values passed down from generation to generation. This paper is the result of research aimed at identifying the moral values of the Bonokeling Community that still exist, as well as the ways moral socialization is carried out by parents and the community amid ongoing social changes. This study uses a case study research method targeting the Bonokeling Community in Pekuncen Village, Jatilawang Subdistrict, Banyumas Regency. Data collection methods include in-depth interviews, focus group discussions (FGD), observations, and documentation.

The results show that although fewer young generations are willing to undergo the *mlebu* ceremony (an initiation ritual for a child to be accepted as a Bonokeling child-descendant), the community's moral values remain well preserved. These values include religiosity, tolerance, discipline and responsibility, democracy, environmental care, and social care. They also emphasize that every action must be based on good intentions: *rila* (willingness), *legawa* (acceptance), *ikhlas* (sincerity), *anuraga* (deep love/affection), and *eling* (mindfulness) as a form of obedience to God to maintain social harmony.

Referring to Hoffman's idea which emphasizes empathy and emotional experience as the main foundation in moral development, parents apply the moral socialization pattern of the induction model through the implementation of moral values in daily life. At the community level, socialization is mainly conducted through various *perlon* events, both individual and communal in nature. The boundaries of right/wrong, good/bad behavior are socialized through the concept of *ilok/ora ilok*. Moral values can be well internalized; they act morally because they know and care, not because they fear sanctions.

The model of moral value socialization in the Bonokeling Community can serve as a reference amid the rampant moral decadence.

Keywords: moral socialization, induction model, Bonokeling Community, perlon

Cultural Identity Empowerment through Transnational Education for Migrant Children in Malaysia

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Abstract

This paper discusses the implementation of the International Community Service Program (KKN) at some *Sanggar Bimbingan*(SB) in Selangor, Malaysia, focusing on efforts to strengthen cultural identity among children of Indonesian migrant workers. The program integrated culture, education, and nationalism through a series of structured activities, including gamified civic education, art and cultural practices such as batik drawing, traditional dance, and regional songs, as well as national-themed events commemorating Indonesia's Independence Day. Further, involving in traditional game from Indonesia such as playing *sunda manda* and *cing ciripit* made them easier to engage with Indonesian value to strengthen their identity. These activities not only supported basic literacy and numeracy but also cultivated discipline, creativity, and confidence while reinforcing a sense of belonging and national pride. The findings highlight that cultural-based education in transnational contexts serves as an effective medium to empower migrant children, fostering cultural resilience and identity preservation despite living outside their homeland. This study emphasizes the strategic role of integrating cultural and educational practices in maintaining national identity in globalized and diasporic settings.

Keywords: cultural identity, transnational education, migrant children, nationalism, gamification, community service.

Regulation and Optimization of Village Ambulance Vehicles in the Integrated Rural-Based Emergency Response System as a Community-Based Disaster Risk Reduction

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Abstract

Community empowerment is one of the efforts of Community-Based Disaster Risk Reduction (CBDRR). An integrated rural-based emergency response system is a necessity that can be realized with the participation and emancipation of rural communities supported by various parties or stakeholders. Village ambulances are a form of mutual cooperation and care among villagers in maximizing health and social services, which are regulated in accordance with regent regulations. Almost all villages have village ambulances, but the local government's regulations are not yet adequate. The regulation and optimization of village ambulances are important issues in harmonizing and maximizing health services in terms of both quantity and quality. This study aims to produce an academic paper related to the regulation of village ambulances in order to optimize the integrated rural-based emergency response system in the context of community-based disaster risk reduction in Banyumas Regency. Qualitative research method with a phenomenological design to explore issues and expectations regarding the regulation of village ambulances from bureaucratic and community components such as health center heads, health offices, DPRD representatives, BPD representatives, police, village officials, sub-districts, and other stakeholders in drafting regulations and optimizing village ambulances. The themes obtained from this study include (1) Almost all villages have village ambulances; (2) There are no rules on the use of village ambulances; (3) Almost all village ambulances use rotators and sirens and are still classified as ordinary passenger cars; (4) According to the rules, all village ambulances do not comply with the rules of the Transportation Agency and the police. Conclusions and Recommendations: There is a need for an academic paper on regulations concerning village ambulances in Banyumas Regency; Socialization of regulations on village ambulances; The need for support from all parties in drafting regional regulations on village ambulance regulations.

Keywords: Village ambulances, regulations, academic studies, integrated rural-based emergency response system, CBDRR

Local Wisdom of Bonokeling (Banyumas) Indigenous Women in Preserving Nature

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Abstract

The Role of Women in Natural Disaster Management is Crucial. However, the existence of women is often overlooked, despite their central role in disaster management. The purpose of this study is (a) to examine and analyze the local wisdom of Bonokeling women in interpreting the relationship between humans and nature; (b) to analyze the role of women in natural disaster management. A descriptive qualitative research method was chosen to explore environmental issues in the Bonokeling indigenous community. The research location is in the Bonokeling Kejawen Indigenous Community in Pakuncen Village, Jatilawang District, Banyumas Regency. The research subjects are women of the Bonokeling indigenous community; Bonokeling indigenous elders; men of the Bonokeling indigenous community; and Pakuncen Village officials. Informants were determined using purposive sampling; data collection was done through in-depth interviews, FGDs, observations, and documentation; data analysis used an interactive model. Regarding natural disasters, the Bonokeling indigenous community, which still upholds the relationship between humans and nature, interprets nature as a "mother." When natural disasters occur, they do not feel afraid because they believe that as a "mother," nature would not harm its children. The task of women is to care for nature, just as they care for humans from birth to death (Bonokeling women also participate in bathing the deceased). Many Bonokeling residents build houses on hillsides, but so far, landslides have not occurred. Residents plant many trees on the hillsides with dense stands and bamboo plants, so from a distance, these houses are not visible, protected by the lush trees. Women also participate in planting trees on their own land. In addition to storing water, the roots of these plants are able to bind the soil, so residents are protected from landslides and drought. This is because they consider the existence of the "Perlon" ritual or "Sedekah Bumi" (Earth Gratitude ceremony), which is held periodically, to be a savior from all disasters.

Keywords: Woman; bonokeling; local wisdom; disaster mitigation

The Effect of Safety Behavior, Energy Intake and Work Environment on Increasing Productivity of Micro, Small and Medium Enterprises in Purbalingga Regency

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Abstract

Background. Occupational Safety and Health efforts for informal sector workers need to be encouraged in order to increase productivity. Workers or micro, small and medium business actors have a very important role and position as subjects in achieving national development goals, namely achieving quality human resources and having high productivity. **Research objectives.** To determine the effect of Safety behavior, work nutrition and work environment on increasing income in micro, small and medium business actors in Purbalingga Regency. **Methodology.** This type of research is quantitative research with a cross-sectional approach. Respondents in this study are micro, small and medium business actors who run businesses in the Purbalingga Regency area. The sampling technique used incidental sampling totaling 120 people. Primary and secondary data collection with questionnaires, measurement of work nutrition in workers and measurement of the work environment (lighting and noise) as well as documentation from the Department of Industry. The research instrument used a questionnaire, observation sheets and measurement sheets. Data analysis used univariate analysis, bivariate with chi square and multivariate with multiple regression. **Results.** Of the 120 respondents, 73 (60.83%) were female, with 85 (70.83%) being adults aged 20-40. The majority of respondents were in the culinary industry (77%) and 75 (64.16%). **Conclusion.** The majority (62.5%) adhered to safe work practices. The majority of respondents were in the culinary industry (77%) and 75 (64.16%). The majority (62.5%) adhered to safe work practices. The majority of 67 people (55.83%) stated that implementing safe work behavior in running a business can increase income.

Keywords: Safety behavior, energy intake, work environment

Karangkitri : Local Wisdom Practices of Rural Communities in Maintaining Family Food Security (A Study of Rural Communities in Banyumas Regency)

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Abstract

Food security is one of the main pillars of sustainable development and plays a crucial role in ensuring community welfare, particularly in rural areas. Banyumas Regency, as an agrarian region, has significant potential to strengthen food security through the utilization of local wisdom, one of which is the *karangkitri* practice. *Karangkitri* is a household-based system of managing home gardens by cultivating food crops, horticultural products, and medicinal plants, as well as raising small livestock to meet daily needs. Although it has been proven to contribute significantly to food security, this practice faces serious challenges such as land conversion, lifestyle changes, declining interest among younger generations, and limited policy support.

This study aims to: (1) analyze the role of *karangkitri* practices in maintaining household food security in Banyumas Regency; (2) identify the obstacles faced by communities in managing *karangkitri*; and (3) formulate sustainable revitalization strategies by integrating technological, economic, social, and environmental aspects. The research was conducted in three villages: Kemutug Lor, Jingkang, and Kalisalak. A mixed-methods approach with a descriptive-analytical orientation was employed. Data were collected through field observations, in-depth interviews, household surveys, and policy document analysis. Data analysis combined Miles & Huberman's qualitative model with descriptive quantitative analysis, while validity was ensured through triangulation, member checking, and peer review.

The results indicate that *karangkitri* practices provide a substantial portion of households' daily food needs, increase dietary diversity, enhance family income, and strengthen rural social capital. The findings also suggest that revitalizing *karangkitri* requires strong policy support, the adoption of appropriate technologies, and greater involvement of younger generations. This research is expected to provide empirical evidence and strategic recommendations to optimize the role of *karangkitri* as a household-based food security solution, reduce dependency on external markets, and strengthen the socio-economic resilience of rural communities. Academically, this study contributes to the field of rural sociology and local wisdom studies, while practically it may serve as a reference for local governments, community groups, and stakeholders in formulating development policies based on local wisdom.

Keywords: Karangkitri, local wisdom, food security, rural communities

Women Question Religion: A Study of the Representation of Women in the Films "Tuhan Izinkan Aku Berdosa (2023) and "Siksa Kubur" (2024)

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Abstract

Women in religious films are often portrayed in subordinate positions. However, two religious films have emerged that portray strong female figures and even question religion: Hanung Bramantyo's *Tuhan Ijinkan Aku Untuk Berdosa* (2023) and Joko Anwar's *Siksa Kubur* (2024). Research into how women are represented in religious films is necessary to determine whether Indonesian cinema has made progress in gender equality. This study uses the perspective of female agency and employed a qualitative approach, analysing the visual and narrative texts in both films.

The study found that although the two films share strong similarities: the main female characters are single and are portrayed as not easily submissive or obedient to religious concepts. They are capable of independent thought and questioning these concepts. Some attempts to question religious concepts are even extreme, such as consciously engaging in prostitution, as depicted in *God Allows Me to Sin*. In *Siksa Kubur*, the women's questioning of religion is in form of empirically prove whether or not the torment of the grave exists for those who were misbehaving during their lives. The brief conclusion of this study is that women's agency emerges strongly in both films, demonstrating their prominent empowerment against conservatism.

Keywords: Women representation, religious concepts, film, agency

Institutional Fragmentation and Tourism Development: A Case Study of Coastal Area Management in Central Java

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Abstract

Institutional fragmentation and conflicting authorities among many stakeholders provide serious obstacles to Indonesia's coastal tourist growth. This paper analyzes the intricate governance structures influencing coastal management in Cilacap Regency, Central Java, which features the province's longest coastline (105 km) but lacks a cohesive regional tourism master plan. The study seeks to examine the effects of institutional fragmentation on tourism development and to determine collaborative governance strategies for sustainable coastal management. Employing an explanatory sequential mixed-method approach, data were gathered via measurements of ecological parameters, in-depth interviews with 20 key informants, and four focus group discussions across three coastal clusters: Teluk Penyumbeng, Segara Anakan, and Widarapayung. Research indicates that regulatory limitations hindering inter-agency collaboration have led to disjointed management since 2019, with coastal regions delegated to third-party operators and military cooperatives. This fragmentation has resulted in obstacles to infrastructure development, unresolved environmental degradation, and constrained revenue generation for local government. The research indicates that institutional obstacles between civilian governance and military leadership substantially hinder sustainable tourism advancement. These findings aid in the formulation of adaptive governance frameworks and policy suggestions for integrated coastal zone management, providing insights for analogous multi-stakeholder tourism destinations encountering jurisdictional issues.

Keywords: Institutional fragmentation, coastal tourism, multi-stakeholder governance, sustainable development, Indonesia

Community Transformation and Local Economy: Business Networks and SMM for the Sustainability of Small and Medium Enterprises in Banyumas

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Abstract

This study aims to develop an integrated model that combines business networks and Social Media Marketing (SMM) to improve the marketing performance of SMEs in Banyumas Regency. Furthermore, this study can empower local businesses to navigate the complexities of the digital landscape effectively and sustainably, and enhance their competitiveness in the ever-evolving digital era. In the context of the rapid growth of digital technology and the importance of online presence, SMEs are expected to adopt innovative marketing strategies to compete in an increasingly competitive market. The method used is a quantitative approach with Structural Equation Modeling (SEM) AMOS. A structured survey was distributed to 204 SME owners in Banyumas to collect data on the effectiveness of SMM strategies, the strength of business networks, and marketing performance. The results of this study state that the integration of strong business networks and SMM can significantly improve the marketing performance of SMEs. The results of this study are expected to provide valuable insights for SMEs in Banyumas to optimize their marketing strategies and increase their competitive advantage in the market. In addition, this study is expected to contribute to the existing literature by offering a comprehensive framework that connects important variables, supporting the growth and sustainability of SMEs in the region.

Keywords: Business networks, social media marketing, marketing performance, SME's Banyumas

The Approach of Power to Violence: Cases of Violence in Higher Education

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Abstract

Power is easily understood as having the right to act. Through power, an individual or group acts to control, influence, and pressure others for the benefit of individuals, groups, or through specific institutions. However, a recent case of power exercised through violence was the murder of an online driver who was run over by a police vehicle. In this case, power was exercised through violence, demonstrating the power of that power itself. The practice of power through violence takes various forms. In general, violence violates human rights. Violence can take the form of cruelty, ferocity, abuse, and persecution, whether intentional or unintentional. Violence occurs because behavior does not reflect values and norms. Various cases of violence in higher education demonstrate the existence of power. In higher education, violence occurs in relationships between those in power and those in power, whether between lecturers and lecturers, lecturers and students, educational staff and colleagues, educational staff and students, senior students and junior students, and between men and women. The case of student demonstrations against violence perpetrated by lecturers against students provides an interesting illustration for examining the power relations within higher education institutions that perpetrate violence.

This research was conducted using qualitative research methods. The research was conducted at Jenderal Soedirman University (Unsoed), Purwokerto. Data/information was collected by collecting several articles from journals, case data from specific institutions, and conducting in-depth interviews with several individuals at Unsoed. Analysis was conducted interactively and on-going. This research shows that violence perpetrated by those in power is more often sexual. The data/information obtained indicates that this violence is perpetrated by men against women. Violent behavior is more often protected by those in power than by the victims of violence.

Keywords: Power, violence, sexual violence, the victim of violence, men against women

The Effect of Stretching Exercise to Reduce Work Fatigue at Office Employees in Purwokerto

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Abstract

Work fatigue is quite an important factor in determining the level of a person's performance. Fika's (2014) research findings state that work fatigue has an influence on employee performance. Meanwhile, research findings by Kurniawati et al (2012) state that work fatigue has an influence on employee performance. Work fatigue is a condition that is often experienced by workers after carrying out an activity. Work fatigue will reduce a person's general physical condition as well as other health problems.

Based on the analysis of the research in step 1, the results obtained that the variable of sitting work posture is the variable that has the most influence on work fatigue with an odds ratio value of 1.703, which means that employees with a hunched sitting work posture have the potential to experience work fatigue as much as 1.703 times compared to employees with an upright sitting work posture. The second and subsequent variables that influence fatigue are age, workload, sleep quality and body mass index (BMI) with odds ratio values of 1,680, 1,480, 1,135, and 1,051, respectively. From the results of this study, the researcher wishes to continue the research in year 2 related to how to solve the problem of fatigue with the HPL model approach (health promotion, stretching exercise and ergonomic layout).

This second-step study aimed to examine the difference in employee fatigue before and after stretching training. The study population was 150 people across five universities in Purwokerto. The data analysis used an independent t-test due to the normal distribution of the data.

The results showed a difference in fatigue levels before and after stretching training, with a p-value of $0.000 < 0.05$ and a decrease score of 3.5. Therefore, stretching is recommended during work breaks.

Keywords: work fatigue, stretching exercise, office employee

Design of Mobile Irrigation Machine on Ditch Channels for Dry Land Farming

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Abstract

This paper presents the design of Mobile Irrigation Machine (MIMc) that watering plant based on operational timing for dry land farming. The MIMc is a 4-wheeled electric vehicle. The MIMc is powered by solar panel electric. The ARS are designed to track the path of ditch channels which is function as water reservoir as well. The ditches width is 20 cm, following the beds on the land. There are three sprayers on each arm side (right and left) of the mobile sprayer. The main parts of navigation control consist of color sensor module, DS1307 Real-Time Clock (RTC), a microcontroller module of the Arduino's built-in esp8266 controller, dual DC motors, and dual DC pumps. The RTC is as operational timing of the mobile sprayer, while the color sensors determine the mode of watering sprayers. Watering modes are idle-1, idle-2, off-watering, one-side watering, and two-side watering. The navigation is also by means of an IoT-Android based application.

Keywords: mobile irrigation, navigation, watering, microcontroller, dry land

The Urgency of Smart Tourism Implementation in Tourism Village Development: A Case Study of a Tourism Village in Serang, Purbalingga

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Abstract

This study examines the urgency of implementing smart tourism in the development of Serang Tourism Village, Purbalingga Regency, emphasising the governance and political dimensions of village development. Advances in information technology require tourism villages to adapt to digital models to compete nationally and internationally. This study employed qualitative methods with interviews and observations, producing a comprehensive analysis of the phenomenon. The results indicate that Serang Village has transformed into a developed tourism destination, boasting assets worth IDR 30 billion and generating approximately IDR 600 million in annual revenue from tourism. More than 15 tourist attractions are managed through a Village-Owned Enterprise (BUMDes), with active promotion through social media (Instagram with approximately 39,000 followers, TikTok, and YouTube) and annual festivals. Approximately 50% of tourists learn about Serang Village's tourism through TikTok, and some of these tourists come from outside Central Java. These findings confirm that Serang Village has implemented several dimensions of smart tourism, particularly in the aspects of informativeness and interactivity through digital promotion utilising social media, collaboration with influencers, and evaluation based on visit data. Meanwhile, accessibility is not yet fully integrated, particularly with online reservation services and digital maps. In terms of personalisation, there are no digital tourist profile-based services, such as automated recommendations or personalised apps. Therefore, Serang Village can be regarded as a tourist village in the transition phase toward smart tourism. While implementation initiatives are already in place, strengthening governance, digital infrastructure, and cross-actor collaboration are still needed for comprehensive implementation. Therefore, Serang Village deserves recognition as a national example in technology-based village tourism development that prioritises sustainability, inclusivity, and community participation.

Keywords: Tourist Village, Smart Tourism, Information Technology, Serang Purbalingga.

Scanning Electron Microscope (SEM) of the Spermatozoa From Four Species of Cyprinids

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Abstract

<https://docs.google.com/document/d/1kDGA5K6gTw80wgQzGtMOll6LlpLYp69v/edit?usp=sharing&ouid=114688876350220669669&rtpof=true&sd=true>

Keywords: gamet, sperm head, sperm tail, cyprinids, SEM



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INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT

Application of SNAP and HEC-RAS 2D for Extreme Flood Risk Assessment in Northern Central Java: A Case Study in Demak, Kudus, Pati, and Rembang

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Abstract

Flooding is a natural disaster that transpires when river water exceeds its banks or as a result of waterlogging in low-lying regions that lack adequate drainage. The extensive flooding that affected Demak, Kudus, Pati, and Rembang Regencies on March 15, 2024, has resulted in considerable infrastructure damage, transportation disruptions, and huge economic losses. These regions are particularly susceptible to flooding owing to their geographical features, characterized by lowlands and coastal zones, coupled with severe rainfall and tidal occurrences. This study seeks to delineate the spread of flood inundation and assess the efficacy of flood analysis and modeling techniques. The primary methodologies employed are the analysis of Sentinel-1 Synthetic Aperture Radar (SAR) satellite imagery through the Change Detection Approach (CDA) utilizing SNAP software, and hydrodynamic numerical modeling via HEC-RAS 2D. The CDA approach analyzes satellite imagery pre- and post-flood to identify alterations in land cover using pixel value comparisons, whereas HEC-RAS 2D models water flow utilizing topographic, hydrological, and tidal information. The findings indicated that both techniques effectively represented the magnitude of flood inundation. The CDA analysis was deemed more accurate in depicting actual flood conditions, however the HEC-RAS 2D software offered supplementary insights into flood depth, which the CDA method can not provide. The amalgamation of remote sensing and numerical simulations yields complete and validated data, serving as a reference for devising effective and sustainable flood catastrophe mitigation techniques and for planning the future development of flood-prone regions.

Keywords: Extreme Flood, SNAP, HEC-RAS 2D, Change Detection Approach, and Flood Modeling

Social Empowerment and Creative Economy for Improving the Welfare of Rural Communities in Banyumas Regency

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Abstract

The creative economy in Indonesia refers to the utilization of individual creativity, skills, and talents to create prosperity and employment. This sector is an important new pillar of economic growth, driving innovation, building national identity, and contributing significantly to national GDP. The creative economy is centered on individual ideas, concepts, and creativity that are processed into products or services of economic value. The creative economy in Banyumas focuses on identifying and developing local potential such as culinary, fashion, crafts, culture-based tourism, and performing arts. Although the creative economy can drive inclusive social progress and empower people to develop their own economic, social, and personal development, procedures and processes must be implemented. This study uses a descriptive qualitative approach that focuses on creative economy development strategies through social empowerment. Data collection for this study was carried out through interviews, observations, FGDs, and documentation. Data analysis used interactive analysis. The results of this study indicate that local potential supporting the creative economy has been implemented and mapped but has not yet produced optimal results. It is necessary to build an integrated creative economy ecosystem and promote the development of a powerful creative economy.

Keywords: Creative economy, Empowerment, rural areas, and welfare.

**Analysis of Business Cost Efficiency on Broiler Production Performance of Partnership
Broiler Farmers in Majalengka and Kuningan Districts West Java**

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Abstract

This study aims to describe the business cost profile and broiler production performance of partnership farmers in Majalengka and Kuningan Districts, West Java Province. The respondents of this study were partnership farmers affiliated with the core company Semesta Jaya Farm, located across Majalengka and Kuningan. A total of 17 farmers were selected using purposive sampling and the Slovin formula, with the criteria of having a livestock population of 2,000–8,000 birds and having joined the core company for at least three production cycles during 2025. The method used in this study was a case study with descriptive analysis, and data were collected through observation, interviews, and documentation. The results showed that the largest cost components incurred by partnership farmers were depreciation of cages and equipment, labor, and heating cost. The average livestock production index (IP) was 355.11, which is considered good. The IP could be improved above 355 by optimizing the use of cages and equipment, enhancing farmer performance, and more appropriately regulating heating during the brooding period. Cost efficiency among partnership broiler farmers can thus be achieved without reducing production performance.

Keywords: Broiler, cost, efficiency, performance, partnership

A Language Maintenance: Code-Mixing Communication of the Indonesian Diaspora

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Abstract

This study examines how code mixing is practiced through daily interactions by an Indonesian diaspora in Spain. As an Indonesian diaspora born in Jogjakarta, the subject commits to preserving Bahasa Indonesia and Javanese, where neither language is employed. Focusing on the daily communication recorded on an Instagram account, namely @dewipobo, this study highlights how Dewi, as the subject, applies Bahasa Indonesia and Javanese in communication with her daughter, Matilde. The data were collected from the reel videos on the Instagram accounts. The transcriptions were then selected and analyzed through the framework of code-mixing typology and pragmatic functions. The interview outcome strengthens the analysis of the data since it confirms the subject's intention to use code-mixing in her daily communication with her daughter. The results of this study demonstrate that code-mixing occurs in conversations related to Indonesia's themes, namely Indonesian cultures, the diversity of languages in Indonesia, and Indonesian foods. Furthermore, the selected variety Javanese language for communication is *Kromo Alus*, which denotes the honorific form of Javanese. In conclusion, the use of code-mixing in daily interaction between Dewi and her daughter is not only a part of the language maintenance, but also an attempt to preserve cultural identity.

Keywords: diaspora, code-mixing, language maintenance, kromo alus, cultural identity

Accountability Frameworks in AI-Driven Sustainability: Bridging the Governance Gap in Ethical Decision Making

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Abstract

As artificial intelligence increasingly governs critical sustainability decisions—from air quality management to environmental monitoring and climate adaptation planning—fundamental questions emerge about accountability and moral responsibility. When AI systems autonomously determine pollution response protocols, prioritize environmental monitoring resources, or recommend climate adaptation investments, traditional accountability frameworks prove inadequate for addressing the unique ethical challenges of sustainable digital transformation. These governance gaps directly threaten progress toward Sustainable Development Goals (SDGs), particularly SDG 7 (Clean Energy), SDG 11 (Sustainable Cities), SDG 13 (Climate Action), and SDG 16 (Strong Institutions). This study examines existing accountability frameworks for AI-driven sustainability decisions, analyzing how current approaches address the "minds vs. machines" distinction in ethical decision-making within environmental contexts. Through thematic analysis of key literature across environmental ethics and governance studies (2020-2025), we evaluated accountability approaches along technical, procedural, and outcome-based dimensions while assessing their implications for SDG achievement. Our findings reveal four critical gaps undermining SDG progress: integration deficits between accountability dimensions, temporal misalignment with long-term sustainability ethics, environmental justice blindness threatening equitable development, and democratic deficits violating participatory governance principles. Current frameworks inadequately address fundamental questions about moral agency distribution between humans and AI systems in environmental decision-making contexts. This analysis provides a comprehensive examination connecting AI accountability specifically to sustainability contexts and SDG implementation, identifying critical research gaps and establishing foundations for integrated approaches. As sustainability AI deployment outpaces ethical governance frameworks, this work establishes a research agenda for ensuring technology serves as an enabler rather than obstacle to global development goals, bridging AI ethics and environmental justice in sustainable digital transformation.

Keywords: artificial intelligence ethics, sustainability governance, accountability frameworks, sustainable development goals, digital transformation

Effect of Torch Ginger (*Etlingera elatior*) Extract on the Mechanical and Physical Properties of PVA–Starch/Nanocellulose Bioplastics

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Abstract

The physical and mechanical properties of bioplastics are essential for ensuring packaging performance, including product protection, structural integrity, and shelf life. This study evaluated the incorporation of torch ginger (*Etlingera elatior*) extract into PVA–starch bioplastics reinforced with nanocellulose to enhance antioxidant and antimicrobial functionality. Extract concentrations of 0%, 2%, 4%, and 6% (v/v) were tested for their effects on tensile strength, elongation, thickness, hardness, and water vapor transmission rate (WVTR). Results showed tensile strength values of 4.29–5.09 kgf/mm², elongation of 51.09–86.09%, thickness of 0.20–0.23 mm, hardness of 21.87–25.67 Shore A, and WVTR of 0.02–0.03 g/cm²·h. Statistical analysis indicated that torch ginger extract had no significant effect on the physical and mechanical properties of the bioplastics. These findings suggest that torch ginger extract can be incorporated to improve the functional barrier properties of bioplastics without compromising their fundamental performance as packaging materials.

Keywords: PVA–cassava starch bioplastic; cassava peel nanocellulose; torch ginger extract; physical and mechanical properties

Endophytic Bacteria—Induced Systemic Resistance Enhances Banana Defense Against Bunchy Top Disease (BTD)

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Abstract

Bunchy top virus is a pathogenic agent that drives banana bunchy top disease, causing yield losses that can reach up to 100% within 21.6 days post-infection. The use of endophytic bacteria to induce systemic resistance has the potential to control this virus. This study evaluated the efficacy of four endophytic bacteria—*Bacillus velezensis*, *Serratia* sp., *Enterobacter* sp., and *Stenotrophomonas* sp.—in inducing systemic resistance in two banana cultivars (Kepok and Cavendish), conducted at the Plant Protection Laboratory and in the greenhouse. The experimental design was a factorial completely randomized design with two cultivars (first factor) and four bacterial treatments with two controls (second factor), each replicated four times. Data were analyzed by ANOVA and followed by DMRT ($\alpha = 0.05$) to identify significant differences. Results showed that *Enterobacter* sp. and *Stenotrophomonas* sp. significantly reduced disease severity index (10.4%) and AUDPC (21.8) in the Cavendish cultivar. Endophytic bacteria induced banana resistance via secondary metabolites, as evidenced by increased levels of phenolics, peroxidase, saponins, and tannins across all cultivars. Collectively, *B. velezensis*, *Enterobacter* sp., and *Stenotrophomonas* sp. effectively promote systemic resistance through activation of these secondary metabolites.

Keywords: Kepok, Cavendish, endophytic bacteria, systemic resistance, banana bunchy top disease

Smartvillage through the Concept of Integration of Primary Services in Gununglurah Village, Cilongok District

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Abstract

Primary care integration is a healthcare approach concept that serves the entire life cycle of the community. This program aims to bring healthcare services closer to the community, so that they can easily access them. Efforts to implement smart villages through the concept of primary care integration can be realized through economic, health, social, environmental, village governance development and IT implementation. Smart villages are a village development concept that utilizes appropriate technology to improve the quality of life of the community and the efficiency of government administration. The location of the village that will be implemented is in Gunung Village, Cilongok District, Banyumas. Activities will cover target groups of families from mothers of toddlers, teenage families and elderly families. The development pillars that will be worked on include the economic pillar, the health pillar, the social and cultural pillar, the community empowerment pillar and the village governance pillar. Activities carried out in implementing these pillars include needs assessment for the primary care integration, training for cadres about toddler nutrition, identification of adolescent risk behavior, elderly independence assessment, assistance in obtaining Business Licenses (NIB) and Halal Certificates Small and Medium Enterprises (SMEs).

Keywords: Integration, Primary, Services

Financial Flexibility and Firm Size: Impact on the Financial Performance of Indonesian SMEs

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Abstract

This study is entitled “Investment Decisions Based on Capital Structure as a Mediator of the Effect of Financial Flexibility on SMEs’ Financial Performance.” The purpose of this research is to analyze: (1) the effect of financial flexibility on financial performance, (2) the effect of financial flexibility on investment decisions based on capital structure (IDCS), (3) the effect of IDCS on financial performance, and (4) the mediating role of IDCS in the relationship between financial flexibility and SMEs’ performance. The study employed a quantitative approach with 98 purposively selected SMEs listed on the Indonesia Stock Exchange (IDX) in 2022–2024 and publishing financial reports in the same period according to OJK regulations. Data analysis used descriptive statistics and Partial Least Squares (PLS) with WarpPLS software. The novelty of this study is the introduction of the IDCS concept as a mediating variable between financial flexibility and SMEs’ financial performance. The urgency of the study lies in bridging academic gaps and providing practical solutions for SMEs amid the global uncertainty of 2024 that affects stability and investment. The findings are expected to help SMEs optimize financial flexibility for strategic investments, enhance performance, and support government policies to strengthen national economic resilience.

Keywords: financial flexibility, investment decision, capital structure, financial performance, SMEs

Understanding Control Barriers and Required Interventions in a High-Burden Tuberculosis Setting, Indonesia

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Abstract

Background:Indonesia ranks second globally in the number of Tuberculosis (TB) cases, following India. This underscores the urgent need to identify barriers in current TB control efforts and to develop more effective prevention and intervention strategies. Despite various initiatives, TB incidence remains high in the community.

Objective:This study aims to explore the key barriers to TB control and identify necessary interventions in a high-burden setting.

Methods:A qualitative approach was employed through in-depth interviews conducted in Banyumas Regency, Central Java. Informants included stakeholders from multiple sectors: TB program officers at the District Health Office, Non-Governmental Organizations (NGOs), TB program staff at public health centers (Puskesmas), TB patients, and TB cadres affiliated with Mentari Sehat Indonesia. Five health center areas were selected using random sampling. The study explored challenges in TB control from both systemic and individual perspectives, including those of healthcare providers and patients. Data were analyzed thematically using MAXQDA software.

Results:

Three major themes emerged as key barriers to TB control: Socioeconomic Barriers – including financial burden, low health literacy, and patient challenges in TB management. Support Systems – covering the availability and quality of external support, services at Puskesmas and other healthcare facilities, and intersectoral collaboration. Education and Awareness Campaigns – highlighting the need for enhanced community outreach, healthcare worker training, and cadre development.

Conclusion:

Addressing TB in high-burden settings requires a comprehensive approach that tackles socioeconomic challenges, strengthens support systems, and enhances education and awareness efforts among both communities and healthcare providers.

Keywords: Tuberculosis, Control Barriers, Indonesia

Enhancing Public Sector Competencies and Collaborative Governance for Agrotourism Development in Rural Indonesia: A Case Study of Kanigara, Wonosobo

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Abstract

This study addresses the critical challenge of developing public sector human resource competencies to support sustainable rural development, focusing on the Kanigara region in Wonosobo, Central Java, Indonesia. Although the area possesses significant agrotourism potential, its realization is hindered by a low human development index and the absence of effective inter-agency collaboration. The research objectives are to analyze the existing capacity of public sector human resources and to examine the dynamics of collaborative governance among various stakeholders. Using a qualitative approach, the study employs in-depth interviews with government and village officials, complemented by a focus group discussion for data triangulation. The findings reveal that despite a strong bottom-up initiative from the community, a lack of targeted skills (such as digital marketing and post-harvest management) and inadequate coordination among local government agencies are major obstacles. The study concludes that fostering a culture of collaborative governance and implementing tailored competency development programs are essential to unlock Kanigara's agrotourism potential. This research provides a practical framework for policymakers to improve public sector capacity, serving as a valuable reference for similar rural development initiatives in Indonesia.

Keywords: Human Resource Competency, Collaborative Governance, Agrotourism, Rural Development, Wonosobo

Effect of Different Temperature on Pepsin and Trypsin-like Activities in Tropic Eel (*Anguilla bicolor* McClalland)

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Abstract

The physiological digestive capacity of fish will determine the ability to utilize consumed nutrients, and this varies in fish with different trophic levels. The digestive capacity referred to is the activity of enzymes in carrying out the process of digesting feed. Studies related to digestive enzymes in *A. bicolor* have been conducted, however, studies on the effect of temperature on pepsin and trypsin-like activity have never been done. Therefore, the purpose of this study was to determine the effect of temperature on pepsin and trypsin-like activity in *A. bicolor*. This study was conducted experimentally by testing the effects of six different temperatures: 20, 30, 40, 50, 60 and 70°C and each temperature was repeated five times. The number of fish used was 30 fish with an average weight of $13,324 \pm 3,489$ g and a length of $22,113 \pm 1,687$ cm. Measurement of pepsin and trypsin-like activity was carried out using a spectrophotometer method. The results showed that a temperature of 20-40°C produced high pepsin activity and was not significantly different, but at a temperature of 50-70°C pepsin activity decreased significantly ($p < 0.05$). In trypsin-like activity, a temperature of 20-50°C produced high activity and was not significantly different, and the activity only decreased significantly at a temperature of 60-70°C ($p < 0.05$). In conclusion, there is a difference in activity between pepsin and trypsin related to the temperature that can still be tolerated, pepsin activity decreases at a temperature of 50°C, while trypsin-like activity decreases only at a temperature of 60°C.

Keywords: *Anguilla bicolor*, pepsin, temperature, trypsin-like

Prevalence and Characteristics of TB-DM Patients in Banyumas District, 2025

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Abstract

Introduction: The double burden of tuberculosis (TB) and diabetes mellitus (DM) comorbidity is one of the major challenges in TB control efforts. Patients with DM are at higher risk of developing TB as a comorbid disease. Results from the first-year study showed that the prevalence of DM among TB patients was 8.3% (497 out of 5,959 TB patients). Therefore, it is also essential to study the prevalence of TB among DM patients. **Objective:** This study aimed to determine the prevalence of TB-DM comorbidity and its characteristics in Banyumas District. **Methods:** This was a descriptive study using a cross-sectional approach. The study sample consisted of 152 Prolanis DM participants who underwent TB screening at Cilongok 1, Kedung Banteng, and Karanglewas Primary Health Centers. Data were analyzed using univariate analysis. **Results:** The findings showed that the prevalence of TB among DM patients was 0.66% (1 out of 152 DM patients). Most DM patients were female (89.5%), with a mean age of 59.4 years, and 57.2% had completed primary school education. A total of 38.8% had a normal BMI. Only 3.3% were active smokers, but as many as 61.8% were passive smokers. The majority of DM patients had poor knowledge about TB (75.75%), and 57.2% reported experiencing TB-like symptoms such as night sweats (32.9%), weight loss (30.3%), and cough (23.7%). Most DM patients had no history of contact with TB patients (89.5%). **Conclusion:** The prevalence of TB-DM among Prolanis DM participants was 0.66%. Some DM patients presented with TB symptoms, and knowledge of TB among DM patients remained low. Therefore, routine TB screening in DM patients and strengthening health education about TB are strongly recommended.

Keywords: Prevalence, Characteristics, TB-DM patients

Sociological Challenges of the Creative Economy in Banyumas Regency: Youth Transitions and the Unfinished Creative City

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Abstract

This study constitutes a continuation of the research titled “Sociological Problematics in the Reality of the Creative Economy in Banyumas Regency,” submitted in 2024. Having produced a publication on risk society and the creative economy, the present inquiry shifts its focus to the transitional experiences of youth within the creative economy. Youth represent a cohort navigating the passage to adulthood through work. However, under conditions of advanced capitalism, risk society, and gig-style labor—identified in the first-year study—their trajectories assume a zig-zag pattern. This second-year research explores this phenomenon by examining young individuals aspiring to become DIY musicians in Purwokerto. A qualitative descriptive methodology, grounded in Hoodkinson’s biographical approach, underpins this study. Data were drawn from two youth collectives, Voicehell and Heartcorner, both active in Purwokerto since 2014. Fieldwork spanned two years, commencing in 2023. Following data reduction, the findings will address the risks youth encounter during their transitions and, more broadly, will interrogate the concept of “xerox policy” as manifest in Banyumas’s creative economy. The analysis further considers why Banyumas has failed to materialize its vision as a “Creative City.” The research aims first to trace the forms of transitional failure among youth who choose adulthood pathways through high-risk occupations engendered by a heavily xerox-policied creative economy in Banyumas. Second, it examines how the unfulfilled “Creative City” slogan, in the absence of a supportive political ecology, undermines youth access to creative sectors, rendering their labor relations precarious and obstructing successful transition.

Keywords: Urban Creative Class, Creative Economy, Risk Society, Gig Economy

Farmer Resilience in Cardamom Farming: Evidence from Banyumas Regency

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Abstract

Banyumas Regency is the largest cardamom-producing area in Central Java. However, in 2024, production declined by 26.73% due to drought and low selling prices, which diminished farmers' motivation to continue cultivating cardamom. This condition necessitates the adaptation of agricultural practices to manage the risks arising from climate change and other challenges, ensuring the sustainability of farming activities amid environmental and economic pressures. This study aimed to analyze the resilience level of cardamom farmers in response to climate change and declining market prices. A cross-sectional survey design was employed, and the sampling technique used was cluster sampling, involving 70 cardamom farmers from sub-districts affected by drought. Data were analyzed using descriptive statistics and the Livelihood Vulnerability Index (LVI) approach. The findings revealed that the majority of cardamom farmers in Banyumas Regency were elderly, had low levels of formal education and income, and limited access to non-formal education. Based on the analysis, the LVI score was (0.55), which indicates a moderate to high level of vulnerability. The exposure index was (0.51), reflecting considerable exposure to climatic variability. The sensitivity index was (0.44), indicating moderate impacts on health, food security, and water availability, with fluctuating cardamom prices worsening the condition. The adaptive capacity index scored the highest at (0.68). These findings underscore the urgency of implementing adaptation strategies such as technical training, strengthening of farmer organizations, expanding market access, and policy interventions to reduce vulnerability and enhance the resilience of cardamom farmers to climate variability and price instability.

Keywords: Resilience, Cardamon, Climate Change, LVI

Synergy of Cattle-Rice in Pulau Pinang Village: Training on Rice Straw Ammoniation Technology

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Abstract

Pulau Pinang Village possesses considerable potential in rice farming and cattle rearing, yet the utilization of rice straw waste as livestock feed remains suboptimal. This community service initiative aims to enhance farmers' comprehension and skills in processing rice straw via urea-based ammoniation technology. The implementation method includes surveys, socialization, interactive training consisting of material presentation, hands-on practice, technical assistance, and outcome assessment. The results of ammoniated rice straw are used as the basis for assessing the success of this training. Based on this, the results show that the training participants were successful in applying ammoniation technology, evidenced by the straw's color transition to brown, a softer texture, the appearance of an ammonia scent, and the absence of fungal contamination. The ammoniated straw was also gradually accepted by livestock following an adaptation phase. In conclusion, rice straw ammoniation technology effectively enhances feed quality, supports feed sustainability during dry periods, and strengthens the agricultural-livestock sector integration in Pulau Pinang Village.

Keywords: animal feed, cattle-rice integration, rice straw ammoniation, urea

Adsorption of Tartrazine Dye with Hydrotalcite Ni/Al Intercalated by Polyoxometalate K₄[α -SiW₁₂O₄₀]

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Abstract

The treatment of tartrazine dye waste is necessary because tartrazine can cause harms for the environment as well as to the living organisms. One of the methods of the tartrazine dye treatment is through adsorption process. Hydrotalcite material is commonly used as an adsorbent of synthetic dye due to its effectiveness in adsorption process. The structure of hydrotalcite modified with an intercalant can enhance its adsorption capacity. This study aims to investigate the adsorption of tartrazine dye using Ni/Al hydrotalcite intercalated with polyoxometalate K₄[SiW₁₂O₄₀], with experimental parameters including pH, contact time, and adsorbate concentration. Additionally, the kinetic model and adsorption isotherm are studied. The synthesis of hydrotalcite pristine was performed using the coprecipitation method followed by a hydrothermal process at 100°C for 15 hours with a 3:1 (Ni:Al) ratio, yielding Ni/Al-NO₃. The intercalation of the polyoxometalate compound K₄[SiW₁₂O₄₀] and Ni/Al-NO₃ was performed using the ion exchange method at a 1:1 ratio, resulting in Ni/Al-[α -SiW₁₂O₄₀]. The synthesis results were characterized using Fourier Transform Infrared (FTIR), X-Ray Diffraction (XRD), and Scanning Electron Microscopy - Energy Dispersive X-Ray Spectroscopy (SEM-EDX). The optimal conditions for tartrazine adsorption by Ni/Al-[α -SiW₁₂O₄₀] hydrotalcite were obtained at pH 3, contact time of 90 minutes, and adsorbate concentration of 10 mg/L. The adsorption kinetics followed the pseudo-second-order kinetic model with an R² value of 0.9997; an adsorption rate constant of 0.9368 g/mg·min; and a q_e value of 22.0264 mg/g. The adsorption isotherm followed the Langmuir isotherm model with an R² value of 0.9974; a KL value of 3.4758 L/mg; and a Q_{max} value of 68.4931 mg/g.

Keywords: Adsorption, Hydrotalcite, Tartrazine

Knowledge Sharing, Social Performance in Indonesian SMEs: The Role of Innovation

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Abstract

The purpose of this study is to examine the effect of knowledge sharing on social performance through innovation in SMEs. Data were collected from 600 samples in Indonesia's SMEs. Data were analyzed using Smart partial least squares (Smart PLS) 4.0. The result indicates a positive effect of knowledge sharing, outbound innovation, and social performance. Moreover, the result indicates that outbound innovation mediates the relationship between knowledge sharing and social performance. However, this study suggests that inbound innovation does not mediate the relationship between knowledge sharing and social performance. These results provide practical implications. SMEs need to improve their knowledge sharing and innovation behavior to achieve social performance.

Keywords: Knowledge Sharing, Social Performance, Innovation, SMEs

Marketing Characteristics and Integrated Marketing Communications of Organic Rice in Banyumas Regency

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Abstract

This study aims to determine the integrated marketing communications used by farmers on organic rice marketing in Banyumas Regency. The study was conducted in 4 organic farmer groups in Banyumas Regency with a census of 45 farmers. The results showed that most of the respondents sell products in the form of organic rice, sold directly the organic rice after harvest. Marketing channels were consumers directly within Banyumas Regency, due to an ease of access and a cash payment system. The selling price of organic rice was higher than that of the other rice, because farmers control the price level, and the price was not affected by market demand and the supply of organic rice from farmers. In integrated marketing communications related to Direct Marketing, respondents marketed utilized telephone and WhatsApp, followed by a social media and a small use of e-commerce. The implementation of Sales Promotion was still lacking, such as providing product samples, giving discounts to buyers and giving slightly lower prices to resellers. In Advertising, farmers advertised organic rice using WhatsApp, Facebook and a little use of Instagram. In the context of personal selling, respondents provided product delivery services, at once providing knowledge about the product face-to-face.

Keywords: Marketing, Communication, IMC, Rice, Organic

Nutrition Education and Assistance for Pregnant Women Based on Local Wisdom as a Prevention of Chronic Energy Deficiency (CED) in Bojongsari Village, Banyumas Regency

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Abstract

Based on data from the Banyumas District Health Office in 2023, there were 72 pregnant women suffering from Chronic Energy Deficiency (CED) in the working area of Kembaran II Public Health Center, 32 of whom were from Bojongsari Village. CED in pregnant women can increase the risk of pregnancy complications, delivering low birth weight (LBW) infants, and maternal or infant mortality. Thus far, nutrition education programs conducted by the public health center have often been general in nature and have not fully addressed the individual needs of pregnant women. Therefore, it is important to provide education related to the nutritional needs of pregnant women, the utilization of local food sources, and the stigma surrounding dietary restrictions during pregnancy.

The intervention results showed an increase in knowledge scores regarding the nutritional needs of pregnant women, the utilization of local food sources, and dietary restriction stigma during pregnancy from pre- to post-intervention, with p-values of 0.008, 0.013, and 0.049, respectively. Nutrition education and assistance based on local wisdom proved effective in improving pregnant women's knowledge of nutritional needs, local food utilization, and reducing dietary restriction stigma during pregnancy. With this increase in knowledge, it is expected that pregnant women can adopt healthier and more adequate dietary practices, thereby reducing the risk of Chronic Energy Deficiency (CED) and other pregnancy complications. Similar programs are recommended to be developed and integrated into posyandu activities as well as maternal health programs at public health centers on an ongoing basis.

Keywords: nutrition education; chronic energi deficiency; local wisdom

Physicochemical Characteristics of Synbiotic Goat Milk Kefir with Added Beetroot and Dragon Fruit Extracts as an Alternative Drink for Obese People

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Abstract

Obesity is one of the global health problems with increasing prevalence. Obesity is a medical condition characterized by excessive accumulation of fat tissue in the body due to an imbalance between calories consumed and expended. Utilization of food ingredients that have high nutritional value and abundant availability such as goat's milk, banana pels, red beets, and dragon fruit can be used as raw materials for making synbiotic kefir. Kefir has the potential as functional anti-obesity product because of its ability to accelerate body metabolism and burn fat which has an impact on weight loss. Banana peel flour is used as a kefir prebiotic and to increase fiber and vitamin C kefir is added with red beets and dragon fruit. The purpose of this study was to determine the physicochemical characteristics (viscosity, pH, fiber and vitamin C) of goat milk kefir. This study used a factorial Randomized Block Design (RBD) with 2 factors, namely the addition of banana peel flour (1% and 2%), the second factor is the addition of a mixture of beetroot and dragon fruit extracts (5%, 10%, 15%). The data were analyzed using ANOVA using SPSS 27. The result of the analysis showed that the more extract added to the goat milk kefir product, the more the vitamin C content increased significantly, the fiber content and pH did not increase significantly and there was a significant decrease in viscosity in the product.

Keywords: synbiotic kefir, goat milk, dragon fruit, beetroot, obesity

Family-Based Local Potential Model as an Efforts to Handle Waste Emergency

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Abstract

Environmental awareness can begin early. Training and skills development can begin within the family to enhance community knowledge, attitudes, and practices. Environmental and behavioral issues can impact general environmental sanitation. Furthermore, waste problems arise from the habit of disposing of waste without processing it. A family-level waste management model is considered effective in reducing waste in the community. This study aims to develop a waste management development model through a family-based analysis of local potential as an effort to address waste emergencies. The method used in this study is a qualitative research method to holistically understand the phenomena experienced by the research subjects. These research subjects are called informants. The main informants in this study were family members, community leaders, and supporting informants, namely the Head of the Environmental Service, cadres, and community members of Banyumas Regency. The determination of the sample unit (informant) was deemed adequate if it reached redundancy (data saturation, plus the research subjects no longer provided new or varied information). Data collection techniques were carried out through in-depth interviews and observations. Researchers will observe the potential of families in waste management activities, weaknesses, strengths, opportunities and challenges of the program of reduction, handling, transportation, processing, recycling, disposal, public awareness, inhibiting and encouraging factors to participate in family waste management based on local potential, situational factors, behavior, knowledge, understanding, motivation, values and norms, cultural, economic, and social factors of the community in Banyumas Regency. Data analysis is open using an inductive thinking process using an interactive analysis model. This model consists of data collection, data reduction, data presentation, and withdrawal. The research instruments used: Researchers as the main instrument (human instrument), interview guidelines, Checklists and recording tools. Data validity uses source triangulation techniques carried out by cross-checking answers between informants. The outputs in this study are the Journal of Environmental Protection and Waste Management, Monograph Books, LPPM UNSOED International Seminars, and Copyright.

Keywords: family, model, waste, emergency

Innovation, Learning Organizations, and MSME Performance: The Moderating Role of Networking

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Abstract

This study aims to analyze the moderating role of networking in the relationship between innovation and learning organization to MSMEs performance. Data were obtained by distributing questionnaires to the owners or managers of MSMEs in Central Java. Ninety-five sets of questionnaires were answered completely and been analyzed. Using the Structural Equation Modelling-Partial Least Square, the result showed that innovation and learning organization have a positive but very weak effect on MSMEs performance. Another finding of this study shows that networking did not strengthen the relationship between innovation and learning organization on MSMEs performance in Central Java.

Keywords: Innovation, learning organization, networking, performance

Comparison of Concept Map Scores among Various Learning Styles According to the Visual-Aural-Read/Write-Kinesthetic (VARK) Model

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Abstract

There was an assumption that students' learning styles influenced the development of a good concept map for practicing clinical reasoning. This study aimed to determine whether there were significant differences in concept map scores among various learning styles. This non-experimental study utilized concept maps developed as part of a tutorial logbook, voluntarily submitted by 148 students enrolled in the Semester 2, Basic Science of the Cardiovascular System Block at the Faculty of Medicine, Unsoed. The independent variable was the Visual-Aural-Read/Write-Kinesthetic (VARK) learning styles (unimodal, bimodal, trimodal, and quadmodal) determined by fulfillment of the online VARK questionnaire version 8.02. The dependent variables were structural, relational, and total concept map scores (ranging from 0 to unlimited) based on the marking scheme from previous studies. The Consecutive sampling method, incorporating proper concept map, rather than mind map criteria, yielded a total of 80 data sets (74.77% of the total population). Kruskal-Wallis or One-Way ANOVA (whichever is appropriate) was used to determine whether there were significant differences. There were no significant differences in structural ($p=0.674$), relational ($p=0.684$), and total ($p=0.605$) concept map scores among the various learning styles. The result suggests that learning style is not a significant factor in producing good concept maps.

Keywords: clinical reasoning, concept map, learning strategies, learning styles, VARK

Collaboration Strategies of LPPM Unsoed with Business and Industry in Strengthening Research and Community Engagement

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Abstract

This study examines the role of the Institute for Research and Community Service (LPPM) at Universitas Jenderal Soedirman (Unsoed) in fostering collaboration with the business and industrial sectors. The research is grounded in the context of the Industrial Revolution 4.0, which emphasizes the importance of cooperation between higher education institutions and non-academic sectors to support economic development, improve the quality of human resources, and strengthen research based on real societal needs. A qualitative method with an embedded case study design was employed. Data were collected through in-depth interviews, document review, questionnaires, and Focus Group Discussions (FGDs), and analyzed using Miles and Huberman's interactive model. The findings indicate that LPPM Unsoed's strategies for collaboration include joint needs assessment, the development of applied research, industry-based community service programs, and the implementation of a digital collaboration system. The forms of cooperation realized include joint research, student internships, technology transfer, training, and community empowerment programs. The main challenges identified were differences in orientation between academia and industry, limited resources, and bureaucratic barriers. However, intensive communication and the principle of win-win solutions proved effective in mitigating these obstacles. Collaboration has provided significant benefits for lecturers, students, industry partners, and local governments, including academic capacity building, improvement of human resources quality, and support for regional policy development. This study recommends the triple helix model as an ideal framework for strengthening collaboration between universities, industry, and government to create a sustainable innovation ecosystem.

Keywords: LPPM, collaboration, business, industry, triple helix

Integrating Banyumas Local Wisdom into AI-Based Interactive Learning Media to Enhance Students' Vocabulary

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Abstract

Vocabulary mastery is a fundamental aspect of English language learning; however, many students still struggle due to the lack of contextual and engaging learning media. This study aims to develop AI-based interactive learning media incorporating Banyumas cultural content to improve the vocabulary skills of students in the English Education Study Program. The integration of local culture—such as traditional arts *ebeg* and *lengger*, folklore of Raden Kamandaka, and Banyumas culinary heritage—is believed to provide a more meaningful, relevant, and motivating learning experience. The research employed a Research and Development (R&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The media was developed as an AI-driven interactive multimedia gallery application, presenting vocabulary through narratives and visuals of local culture. The findings show a significant improvement in students' vocabulary mastery after using the media, as evidenced by statistically significant differences between pre-test and post-test scores. Moreover, most students reported that the media was more engaging, user-friendly, and effective in connecting new vocabulary with real-life cultural contexts of Banyumas. Feedback also highlighted that integrating local culture not only strengthened learning motivation but also increased awareness of local wisdom values. The study produced outcomes in the form of an interactive application prototype, an international journal article, seminar presentations, and a draft of a culture-based teaching material. Therefore, this research contributes to innovative English learning that is contextual, adaptive to the digital era, and sustainable, while simultaneously supporting the preservation of local culture.

Keywords: learning media; interactive; AI; vocabulary; Banyumas culture.

Halal Encounters: The Dynamics of Korean Street Food in Contemporary Indonesia

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Abstract

Korean street food has become part of the Korean Wave (Hallyu) that has influenced Indonesia since the early 2010s. In Purwokerto, Korean street food is widely available and consumed, particularly by younger generations. Despite its popularity, concerns over halal status pose challenges for vendors, given that the majority of Purwokerto population is Muslim. This study examines three interrelated aspects: (1) the spatial distribution of Korean street food vendors in Purwokerto; (2) vendors' strategies in adapting their products to halal requirements and pursuing halal certification; and (3) community reception toward the consumption of Korean street food. Employing a qualitative approach, the study draws on observations, in-depth interviews, and visual data analysis. Findings are expected to enhance public understanding of the social dynamics surrounding Korean street food, while contributing to community preparedness and social resilience in the face of cultural and social change.

Keywords: halal, Hallyu, certification, Korean street food

MATCH-Based Stunting Prevention Intervention for Children Aged 0-24 Months: Analysis of the Role of Cadres in Providing Nutritional Information and Support

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Abstract

Stunting in children aged 0-24 months remains a significant public health problem in Indonesia. This chronic malnutrition condition has the potential to hinder children's growth and development. The main contributing factors include lack of access to nutritional information, suboptimal parenting practices, and limited community empowerment. This phenomenon requires a multidisciplinary approach and comprehensive, structured interventions. Empowering health cadres has great potential in stunting prevention through nutrition education and support at the community level. Objective: To analyze the role of health cadres in providing information and support for stunting prevention in children aged 0-24 months and to develop an intervention model based on the MATCH (Multilevel Approach to Community Health) approach in Kembaran II Community Health Center, Banyumas Regency. This study used a qualitative design, with data collected through in-depth interviews, focus group discussions (FGDs), and participant observation. Data analysis was conducted using thematic analysis techniques. Results: Health cadres act as educators: providing education on the importance of balanced nutrition and good parenting. Facilitator: Organizes Posyandu activities and bridges communication between the community and health workers. Motivator: Provides psychosocial support to pregnant women and mothers of toddlers to implement healthy lifestyle behaviors. The MATCH approach consisting of five phases of goal setting, intervention planning, program development, implementation, and evaluation can be adapted to increase the effectiveness of stunting prevention interventions. The MATCH-based intervention model is effective in empowering health cadres to prevent stunting in toddlers. Implementation of this model requires cross-sector support and ongoing training for health cadres.

Keywords: Stunting, Prevention, MATCH Approach, Cadres, Nutritional Information and Support

Measurement and Verification of Energy Performance at the Rectorate Building of UNSOED: Stage 1 – Baseline Energy Assessment and Saving Potential

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Abstract

This study represents the first stage of Measurement and Verification (M&V) of energy performance at the Rectorate Building of Universitas Jenderal Soedirman (Unsoed), focusing on baseline energy measurement and the identification of potential savings. Data collection and analysis were conducted to characterize electricity consumption patterns and provide a reference for future efficiency programs. The results show that the building's average electricity consumption is 20.5 kWh, with a decreasing trend described by the regression equation $y = -8.8x + 427441$. The building has a total floor area of 3,042 m² with an Energy Use Intensity (EUI) of 81.164 kWh/m² per year, resulting in an estimated total annual energy consumption of 247.13 MWh. Based on the decreasing trend, the projected potential saving is approximately 3.21 MWh per year, equivalent to 1.3% of the annual consumption. These findings indicate early improvements in energy performance and highlight further opportunities for efficiency enhancement.

The application of M&V, guided by ISO 50001 and the International Performance Measurement and Verification Protocol (IPMVP), ensured that verification was carried out objectively and transparently. The findings provide a solid foundation for developing strategies to enhance energy efficiency and reduce operational costs. In addition, this stage contributes to the broader goal of carbon emission reduction and the implementation of sustainable energy management practices in higher education institutions in Indonesia.

Keywords: Measurement and Verification, baseline energy, energy efficiency, energy management

Depression Levels and Demographic-Psychosocial Profiles: A Descriptive Study among Junior High School Students in Banyumas Regency

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Abstract

Adolescent depression is a growing mental health concern due to its significant impact on psychosocial development, academic achievement, and long-term quality of life. This study aimed to describe adolescents' characteristics and psychosocial conditions, including depression levels, social support, emotional independence, and self-efficacy. A total of 307 adolescents aged 11–16 years in Banyumas Regency participated in this study. The majority were female (59.3%) and aged 13–14 years (68.1%). The results showed that most respondents experienced depressive symptoms ranging from moderate to extremely severe (62.8%), while only 23.8% were classified as normal. In terms of social support, the majority reported good support (76.5%). However, more than half of the respondents demonstrated low emotional independence (51.1%) and poor self-efficacy (54.7%). These findings indicate that although social support was relatively strong, low emotional independence and poor self-efficacy may increase vulnerability to depression. Therefore, school-based interventions that strengthen emotional independence and self-efficacy, while optimizing social support, are essential to prevent depression among adolescents.

Keywords: depression, social support, emotional independence, self-efficacy, adolescents

Social Capital & Achievement of Food Security in Farming Households

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Abstract

Social capital is a crucial element inherent in rural communities, particularly in the agricultural sector. This social capital consists of trust, networks, and social norms. Social capital provides access to household independence in achieving well-being, particularly food security. This research analyzes the relationship between social capital and household food security. This study examines how social capital can provide access to achieve household food security. The results show a link between social capital and the achievement of food security in farming households. Farmers utilize access to social capital to meet their needs.

Keywords: Social Capital, Communities, Household, food security

Building Healthy Habits: Strengthening PHBS Culture in the Children of Indonesian Migrant Workers in Malaysia

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Abstract

Clean and Healthy Living Behavior (PHBS) is a program of the Ministry of Health of the Republic of Indonesia that aims to strengthen the culture of individuals, groups, and communities to care about and prioritize health in order to realize a better quality of life. This behavior is very important to be implemented from an early age to protect children from various infectious and non-infectious diseases later in life. However, children of Indonesian migrant workers (BMI) in Malaysia face obstacles in accessing formal education and a lack of health education. This community service program aims to strengthen the PHBS culture among BMI children to increase health awareness and healthy living habits. This activity was carried out in 9 Sanggar Bimbingan in Kuala Lumpur, Malaysia, under the auspices of the Indonesian Embassy. The activities include nutritional status check, education about PHBS, and direct practice training such as washing hands, brushing teeth, and choosing healthy foods. This program was implemented using interactive methods such as educational videos, worksheets, posters, storybooks, and direct practice. The results included increased understanding and changes in healthy behavior, PHBS practice skills, and data on the health status of BMI children as a basis for further intervention. This program is expected to have a sustainable impact by making children agents of change in their communities and creating a quality generation through healthy living habits.

Keywords: BMI children, Clean and Healthy Living Behavior (PHBS), Malaysia, quality generation

Screening and Transmission Tuberculosis in Islamic Boarding Schools in Banyumas District

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Abstract

Background: Islamic boarding schools (pesantren) are complex environments that are susceptible to the spread of infectious diseases, including tuberculosis (TB). Data from one Islamic boarding school in Banyumas Regency reported three students testing positive for TB. This study aimed to conduct TB screening and contact investigations among students, as well as to identify behavioral and environmental risk factors associated with TB transmission in Islamic boarding schools in Banyumas Regency.

Method : This was a quantitative study employing a survey approach. A total of 1,916 students from two Islamic boarding schools in the Cilongok and Tambak Districts of Banyumas Regency participated in the study. Initial screening was carried out through a Google Form assessing contact history and TB symptoms, which led to 439 students undergoing Molecular Rapid Testing (TCM). Data collection included TCM examinations, tuberculin (Mantoux) tests, and questionnaire-based interviews with students at both schools. Environmental measurements were also conducted, including assessments of temperature, humidity, lighting, occupancy density, and cleanliness. Descriptive data analysis was used to summarize students' knowledge, behaviors, and the environmental conditions of the Islamic boarding schools.

Results: Of the 439 students examined, one student tested positive for TB using the Molecular Rapid Test (TCM). The average age of the students was 13 years; 54.7% were female, and 97.2% had completed elementary or junior high school. A total of 26.7% reported TB-related symptoms, such as coughing, night sweats, fatigue, and loss of appetite. Regarding TB knowledge, 52.6% of students demonstrated good knowledge, while 47.4% had poor knowledge.

Behavioral assessments revealed that 100% of students did not practice proper cough etiquette, such as covering their mouths with a mask or tissue/handkerchief when coughing. Additionally, 11.4% of students rarely or never washed their hands after traveling or engaging in outdoor activities. The environmental conditions of the boarding schools were suboptimal, with average ventilation below 10%, occupancy density below 4.5 m² per person, high relative humidity, and rooms that were not adequately clean.

Conclusion: The presence of a confirmed TB case in an Islamic boarding school, along with poor behavioral practices and unfavorable environmental conditions, indicates a significant risk of TB transmission in these settings.

Keywords: screening, transmission, TBC, Islamic boarding schools

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Potential and Mapping of Goat Livestock Development Bases in Banyumas Regency

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Abstract

The development of goat livestock plays an important role in food security and rural economy in Banyumas Regency. This study aims to examine the potential of goat livestock and to map the development base areas of goat livestock using Location Quotient (LQ) analysis to identify sub-districts with comparative advantages in goat farming in Banyumas Regency. The research method used is a survey with secondary data as the main data and primary data as supporting data. Trend analysis utilized data on goat livestock population over the last 11 years. To determine the potential development bases of goat livestock, the LQ method was applied, which compares the proportion of the goat livestock population in each sub-district with the total population at the district level. The results showed a trend in the goat livestock population with the equation $Y=230786-5556.5 X$ and a coefficient of determination (R^2) of 0.4485, indicating a declining population over time but still with a trend that can be analyzed as potential. Furthermore, LQ analysis was used to identify the goat livestock development bases in Banyumas Regency with the criteria $LQ > 1$, indicating areas with comparative advantages in goat production. The sub-districts included in this development base are Lumbir, Rawalo, Kebasen, Kemranjen, Sumpiuh, Tambak, Somagede, Banyumas, Patikja, Purwojati, Ajibarang, Gumelas, South Purwokerto, and East Purwokerto. These findings provide important information about strategic areas with strong potential for developing goat farming businesses and can serve as a focus for policy and intervention in goat livestock development in Banyumas Regency.

Keywords: Goat livestock, population trend, LQ development base

Towards Sustainable Communities in the Banyumas Detention Center: Advancing Human Rights, Health, and Economic Empowerment

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Abstract

The community service program conducted at Class IIB Banyumas Detention Center on August 7, 2025, sought to promote the respect, protection, and fulfillment of human rights (HR) for inmates. Designed through a multidisciplinary approach, the program encompassed legal counseling on human rights principles and non-discrimination, fulfillment of the right to health through dental education and tooth-cleaning practices, and economic empowerment through hydroponic skills training. The analysis underscores that the legal status of inmates does not diminish their inherent dignity and fundamental rights, as guaranteed by the 1945 Constitution of the Republic of Indonesia, the Correctional Law, the Health Law, the Universal Declaration of Human Rights (UDHR), the International Covenant on Economic, Social and Cultural Rights (ICESCR), and international standards such as the Mandela Rules and the Bangkok Rules. Findings reveal that this integrative approach not only increased inmates' awareness of their rights but also offered concrete and sustainable solutions. Legal counseling fostered critical consciousness, preventive health services ensured the right to a healthy life, and hydroponic training generated environmentally friendly economic opportunities. Accordingly, this program contributes to the development of sustainable communities within correctional settings, aligning with SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), and SDG 8 (Decent Work and Economic Growth).

Keywords: Human Rights, Correctional System, Right to Health, Economic Empowerment, Sustainable Communities

Circular Economy and Sustainability of Arabica Coffee Agribusiness in the Gunung Slamet Region, Banyumas Regency

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Abstract

Sustainable agriculture and a circular economy are crucial for global economic development, as they help countries achieve a competitive advantage in the market. Arabica coffee, a significant commodity with economic value, supports millions of small farmers in countries like Indonesia. The Mount Slamet region, where Arabica coffee is widely cultivated, has adopted the circular economy approach to address sustainability issues. This technique emphasizes the 3R concept: reduce, reuse, and recycle in resource utilization. This research aims to investigate the role of the circular economy in increasing added value throughout the coffee supply chain, from production to consumption, and examine the application of sustainability principles in agroforestry systems. The study used a value chain analysis approach, and the results showed that coffee farming in the Mount Slamet region has applied circular economy principles.

Keywords: circular economy, coffee, value chain, sustainability

Accelerating the Anti-Stunting Program: Analysis of the Inclusiveness of the Stunting Reduction Program in Villages Priorities for Accelerating Integrated Stunting Reduction in Banyumas Regency

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Abstract

So far, the program's main target groups have included pregnant women, parents of infants under three, health workers, and village officials. In contrast, fathers as family heads and youth groups remain less active or less involved. This study aims to explore how fathers and youth groups can play a bigger role in the stunting program, or how to expand the target group of the anti-stunting effort in rural areas. Additionally, it is essential to find out how the anti-stunting program can serve as a starting point for a community movement focused on anti-stunting or promoting healthy, nutritious food. Using focus group discussions and descriptive analysis, it was observed that fathers as heads of families and youth show considerable enthusiasm, even though their understanding of stunting is still limited. Furthermore, there is a strong potential for the anti-stunting program to become a community movement if healthy food values are internalized. The findings emphasize the importance of actively involving fathers and youth in the anti-stunting efforts and promoting healthy food values during program socialization, laying the groundwork for a community anti-stunting movement.

Keywords: acceleration, inclusivity, father, teenager, stunting

Optimization of grid-connected PV operations considering electricity tariffs

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Abstract

Electricity supply is faced with the challenge of energy transition towards zero emission targets to reduce the negative impacts of climate change due to the use of fossil fuels. For this reason, the use of grid-connected photovoltaic (PV) in buildings is an alternative in providing environmentally friendly electricity. Unfortunately for consumers, different electricity tariff schemes become a problem in operating PV systems to obtain maximum benefits. This study presents the operation optimization of grid-connected PV systems in buildings considering electricity tariffs. Optimization aims to minimize building energy costs, i.e customer electricity bills, by maximizing the utilization of electrical energy from photovoltaic systems. Constraints considered in optimization include: the balance of source and load power, PV generation power, battery capacity and efficiency, and considering electricity tariff schemes. The objective function and operational constraints are formulated in a Mixed Integer Linear Programming (MILP) model and solved with a MILP solver. Based on the simulation results, it shows that this proposed model can solve the PV system optimization problem. Different tariff schemes affect the PV system operation strategy to reduce customer electricity costs.

Keywords: optimization, grid-connected, photovoltaic, electricity tariff, Mix Integer Linear Programming

Optimization of Tsunami Evacuation Routes in Pelabuhanratu Using Dijkstra's Algorithm

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Abstract

Tsunamis caused by tectonic earthquakes frequently occur in areas near active subduction zones, such as in Indonesia. It's crucial to pay closer attention to this issue to reduce economic losses and loss of life. One mitigation measure is establishing the shortest evacuation route to temporary evacuation sites. This study aims to determine the tsunami estimated time of arrival (ETA) and determine the shortest route to temporary evacuation sites in Pelabuhanratu, a tourist destination. Simulations are conducted to obtain the ETA for the tsunami, then process the data into a range, which will then be compared with calculations using the Dijkstra algorithm. Evacuation routes calculated using the Dijkstra algorithm are then re-evaluated to determine whether they exceed the maximum distance. If they do, a new alternative route can be created with a new temporary evacuation site. By calculating the Dijkstra algorithm at observation points spread across Palabuhanratu, Citepus, and Jayanti villages, 20 alternative evacuation routes were obtained at each observation point. Evacuation times were approximately 16.08 to 17.91 minutes, and distances varied from 390.3 meters to 1,038.19 meters. This research is expected to provide recommendations for improving community and government preparedness in facing tsunami disasters.

Keywords: evacuation route, numerical simulation, Pelabuhanratu, Dijkstra algorithm, tsunami arrival time

Digital Training as a Moderator In Technology Adoption: an Empirical Extension of Tram Among MSME Actors

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Abstract

In the evolving digital landscape, Indonesian micro, small, and medium enterprises (MSMEs) face a critical gap between intention and actual adoption of technology. This study investigates the role of digital training in bridging that gap by extending the Technology Readiness and Acceptance Model (TRAM). A total of 100 MSME actors who had completed structured digital training programs participated in the survey. Data were analyzed using Structural Equation Modeling (SEM) with AMOS to test the relationships among key TRAM constructs. Results confirm that all proposed hypotheses are supported: technology readiness significantly enhances perceived usefulness and ease of use; both perceptions positively shape user attitudes; and attitude strongly predicts intention to adopt technology. Furthermore, digital training significantly moderates the relationship between attitude and intention, amplifying the likelihood of technology adoption. These findings offer both theoretical advancement in TRAM application and practical insights for designing effective capacity-building programs. The study contributes to sustainable digital transformation strategies for MSMEs and supports policy formulation aimed at inclusive technological empowerment.

Keywords: Digital Training, Technology Adoption, TRAM, MSMEs

The Effect of Use of Social Media on Marketing Performance with Social Commerce Branding as Mediation

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Abstract

This research was motivated by the weak branding of creative MSMEs using social commerce, and inconsistent research results on the influence of social commerce use on marketing performance. The purpose of this research is to analyze the influence of social media use on social commerce branding and marketing performance, and to analyze the influence of social commerce branding in mediating the relationship between social media use and marketing performance. This study was a survey using questionnaires distributed online. The target population was creative MSMEs in Banyumas Regency that have used social media to market their products. The sample size was 172 creative MSMEs, with the sampling technique using accidental sampling. The results showed that social media use has a positive influence on marketing performance and social commerce branding, and social commerce branding mediates the relationship between social media use and marketing performance.

Keywords: use of social media, social media branding, marketing performance, creative MSMEs

Development of Biopharmaca Coconut Sugar Products and “Tungku Hemat Energi” to Enhance The Competitiveness of Palm Sugar Farmers In Pekuncen, Banyumas

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Abstract

This community service program was conducted in Pekuncen Subdistrict, Banyumas Regency, a major center of coconut sugar production with over 1,500 active tappers producing 50–60 tons monthly. Local farmers face challenges such as inefficient traditional stoves, excessive use of chemical preservatives, limited product diversification, and strong dependence on middlemen. The program aimed to enhance production efficiency, product safety, and market competitiveness through four approaches: education, technology diffusion, mediation, and advocacy. Key interventions included training on “Tungku Hemat Energi”, production of biopharmaca coconut sugar using herbs (ginger, turmeric), application of natural preservative TANGKIS, and digital marketing. Results showed reduced firewood use by 30–50% and improved production time efficiency by 20%. Diversification increased farmers’ income by 15–25%, while replacing chemical preservatives improved product safety. Products are now sold on digital platforms, expanding market reach and reducing middlemen dependence. The program strengthened the partner cooperative’s capacity, providing a replicable model for sustainable rural agroindustry development.

Keywords:

From Classroom to Workplace: Qualitative Insights into Students' Readiness for Multicultural Work Environments

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Abstract

This research is the initial phase of a study focusing on the work readiness of students majoring in East Asian Languages and Literature, emphasizing the role of self-concept, collaborative skills, and interpersonal communication. This phase involved a focus group discussion (FGD) with 18 students who had participated in internships or student exchange programs (IP) and 5 students who had not. The purpose of the FGD was to identify the students' actual experiences, challenges, and obstacles related to work readiness.

The FGD results revealed three main themes. First, communication challenges emerged as a dominant issue, both in interactions with fellow participants and with external parties at the internship or IP location. Language differences were the primary inhibiting factor, followed by limited interpersonal communication skills. Second, culture shock related to discipline, long working hours, and differences in lifestyle, including dietary habits, were sources of stress and required significant adjustments. Third, most students acknowledged their lack of prior work experience, thus requiring further development of their adaptation and collaboration skills.

These findings reinforce the importance of developing a positive self-concept, practicing cross-cultural communication, and providing soft skills before students undertake internships or IP. The results of this FGD served as the basis for developing a quantitative survey instrument for the next phase of research and a more contextual soft skills development module.

Keywords:

Sustainable Strategy Model for Developing the Palm Sugar Agroindustry in Banyumas Regency to Enhance Local Product Competitiveness

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Abstract

The agroindustry sector plays a crucial role in strengthening local and national economies, particularly in promoting sustainability and empowering rural communities. This study focuses on the palm sugar agroindustry, a flagship product of Banyumas Regency with high global market potential. Despite its strategic value, the industry faces persistent challenges, including low production efficiency at the artisan level, weak coordination among value chain actors, and the absence of data-driven and sustainability-oriented development strategies. This research aims to (1) map the roles and relationships of stakeholders across the palm sugar value chain and (2) formulate sustainable development strategies to enhance efficiency, sustainability, and global competitiveness. The study applies a mixed-methods approach by integrating Policy Implementation Mapping to analyze stakeholder roles, interactions, and barriers, and the Analytic Hierarchy Process (AHP) with Expert Choice 11 software to prioritize strategic alternatives based on criteria of efficiency, sustainability, and social impact. The results show that several factors influence business development, including financial, raw material, human resources, production, market opportunities, and infrastructure factors. Based on these, alternative strategies were identified, such as strengthening capital, expanding partnerships, conducting human resource development and training, developing derivative products, and increasing machines and technology. The main priority for the coconut sugar development strategy is to strengthen capital (weight = 0.275) because developing various aspects requires sufficient capital, from increasing raw material availability and production to improving labor quality and infrastructure. This study contributes both theoretically and practically by providing a replicable strategy model for local strategic products in developing regions.

Keywords: sustainable strategy, agroindustry, palm sugar, competitiveness, stakeholder mapping

The Role of Haptoglobin Profile and Blood Group Genotype in Assessing Hemolysis and Transfusion Burden in β -Thalassemia Major

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Abstract

Background: β -Thalassemia major features chronic hemolysis and lifelong transfusion dependence. Haptoglobin, which binds free hemoglobin, may reflect hemolysis severity. Blood group genotypes could further modulate hemolysis and transfusion demand.

Objective: To evaluate whether haptoglobin levels and blood group genotype inform hemolysis and transfusion burden in β -thalassemia major.

Methods: Cross-sectional analysis of 96 regularly transfused patients. We measured haptoglobin (ng/mL), pre/post-transfusion hemoglobin (g/dL), transfusion frequency (weeks), and recorded ABO/Rhesus/Kell genotypes. Analyses included descriptive statistics, Pearson correlation, ANOVA, and targeted t-tests.

Results: Mean haptoglobin was 151.8 ± 155.2 ng/mL; mean transfusion interval 3.54 ± 0.60 weeks. ABO distribution was OO 39.6%, BO 27.1%, AO 22.9%, AB 5.2%, BB 3.1%, AA 2.1%. Rhesus genotypes were DCCee 70.8%, DCcEe 19.8%, DCcee 7.3%, others 2.0%. Kell was uniformly kell2/kell2 (100%). Haptoglobin did not correlate with transfusion interval ($r = 0.109$, $p = 0.292$). Haptoglobin differed across Rhesus groups (ANOVA $p = 0.028$), while transfusion interval did not ($p = 0.444$).

Conclusion: In this cohort, haptoglobin showed Rhesus-associated variability but did not track transfusion frequency. Combining biochemical (haptoglobin) and genetic (Rhesus) information may help phenotype hemolysis patterns, though prospective data are needed to link these markers to transfusion planning.

Keywords: β -thalassemia major, haptoglobin, ABO, Rhesus, Kell, hemolysis, transfusion frequency.

Identification and Antibacterial Assays of Bioactive Compounds from *Kaempferia parviflora* Rhizome Extracts

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Abstract

Kaempferia parviflora is one the Indonesia's potensial medicinal plant, that known with locally name "kencur hitam". The study on the antibacterial activity of bioactive compounds from *K. parviflora* rhizome was still limited. The aims these studied was to antibacterial assays and identified the bioactive compounds from *K. parviflora* rhizome extracts. The methods of these study include extraction by maceration with n-hexane and athylacetate respectively and fractinations using chromatography technique. The compounds from active fractions were identified using gas chromatograpy-mass spectrometer (GCMS) and liquid chromatography-mass spectrometer (LCMS). The antibacterial assays was using the microdilution methods aganits *Escherichia coli*, *Propionibacterium acne*, *Staphylococcus aureus*, and *Bacillus subtilis*. The identifications of n-hexane fraction by GCMS showed that the major compounds were germacrena, and 5,7-dimethoxyflavone, on the otherhand the identification of ethylacetate fraction by LCMS showed the major compouns were tangeritin and tetramethyl scutellarein. The antibacterial assays showed that both of fractions had antibacterial activities againts the test bacteria.

Keywords: Antibacterial, *K. parviflora*, GCMS, LCMS

Phytochemical Compounds of the Purple Colored Gradation of the Local Cultivar of Sweet Potato Tuber from Banyumas Regency

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Abstract

Sweet potato (*Ipomoea batatas* (L.) Lam.) is considered a potential crop in Indonesia. It has an abundance of nutritional content that is suitable for supporting body function. Another crucial component is a chemical compound such as flavonoid, carotenoid, and anthocyanin compounds. The colour of the tuber is one of the considerations in selection due to the chemical content. Purple sweet potato is believed to contain high flavonoids, particularly anthocyanins. However, the information on the chemical content of the local cultivar of sweet potato from Banyumas Regency is limited. Thus, this study aimed to observe the phytochemicals that have potential for the health aspect. There are five districts for sampling sweet potatoes in Banyumas Regency. Those are Kemranjen, Sumpiuh, Kebasen, Karangluwas, and Rawalo. The tubers were extracted using the maceration method with 95% ethanol solvent. Subsequently, the extracts were analysed for chemical compounds using the GC-MS method. The results show that the local cultivar of sweet potato from Banyumas Regency contains phytochemical compounds, including alkaloids, carotenoids, phenolics, and terpenoids, with the highest content of those being Kebasen-2, Rawalo, Karangluwas, and Kebasen-2 cultivars, respectively. Besides that, those phytochemicals have potency in health science for anti-inflammation, antidiabetic, antimicrobial, anticancer, and antiangiogenic.

Keywords: GC-MS method, Banyumas local cultivar, Phytochemical, Purple sweet potato

Business Environment: Conduct Strategy Analysis of Coconut Sugar Small Enterprises

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Abstract

The business environment has a significant impact on the productivity and sustainability of a business. This is because it encompasses not only internal but also external conditions which contribute to successful business. This research aims to analyze the business environment of small coconut sugar enterprises, namely determining the best strategies by analyzing the internal and external conditions. It collected data from respondents—coconut sugar entrepreneurs in Purbalingga. The business environment analysis is discussed using Conduct analysis in the Structure-Conduct-Performance (SCP) approach, namely how entrepreneurs' strategies understand their business position, where the business is headed, and what strategies will be adopted. The results show the prominent internal conditions are product design strategy, promotional strategy, and legal tactics, while the external ones are market and stakeholders. The suggested implications are (1) the product design strategy is more focused on developing variant products (powder, crystal, and rock), (2) The promotional strategy emphasizes digital promotion via online due to the speed of spreading and ordering, (3) The recommended legal tactic is legalization as a halal product, (4) The market is becoming more focused on segmentation in certain groups with high demand, and (5) Developing business networks through expanding and strengthening stakeholders.

Keywords: coconut sugar, business environment, conduct strategy, sustainability

Look at the sequential mediation analysis: The consequence of employer branding: Job satisfaction, organizational identification, relational psychological contract, and employee retention

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Abstract

This study aims to analyse the consequences of employer branding on the variables of job satisfaction, organisational identification, relational psychological contract, and employee retention. The analysis of employee retention takes the form of sequential mediation analysis. This study used a quantitative approach, reinforcing the role of social identity theory and relational theory, which explained the power of organisations to influence employees to stay with the organisation longer. This study used a quantitative method by distributing questionnaires to 200 employees working in several educational organisations in Jakarta. The research sample employed a purposive approach, selecting employees who had been working for more than three years. The analysis of this study used SEM. The results showed that nine hypotheses were supported. The results showed that H1 indicated that employer branding had a significant effect on job satisfaction; H2 indicated that employer branding had a significant effect on organisational identification; H3 indicated that employer branding affected relational psychological contract; H4 indicated that relational psychological contract mediated the effect of employer branding on employee retention; H5 indicated that relational psychological contract affected employee retention; H6 job satisfaction affects organisational identification; H7 shows that job satisfaction affects employee retention; H8 organisational identification affects employee retention and H9 shows that organisational identification mediates job satisfaction on employee retention.

Keywords: Employer Branding, Job Satisfaction, Organisational Identification, Relational Psychological Contract, Employee Retention

The Effect of Green Tourist Practices on Revisit Intention with Tourist Satisfaction as an Intervening Variable and Environmental Concern as a Moderating Variable

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Abstract

Green tourist practices are currently a global concern as tourists are increasingly demanding destinations that not only provide a tourism experience but also preserve nature and mitigate environmental impacts. This study aims to analyze the influence of green tourist practices on revisit intention by positioning tourist satisfaction as a mediating variable and environmental concern as a moderating variable in the context of sustainable tourism. This study was a survey using questionnaires distributed online and offline. The target population was people who had visited natural tourist destinations in Banyumas Regency. The sample size was 202 respondents, selected using an accidental sampling technique. The results showed that green tourist practices had a positive effect on tourist satisfaction and revisit intention. Tourist satisfaction had a positive effect on revisit intention and mediated the relationship between green tourist practices and revisit intention, while environmental concern moderated the relationship between green tourist practices and revisit intention.

Keywords: green tourist practice, tourist satisfaction, environmental concern, revisit intention, nature-based tourism destinations

Implementation of the Web-Based Accounting Application Si Apik in the Preparation of Financial Statements for MSMEs (Sor Theory Approach)

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Abstract

The Si Apik application is a simple Android-based accounting application created by Bank Indonesia with easy-to-understand features and designed for use by MSME actors from various business sectors in managing financial transactions. However, the use of the Si Apik application has not been fully implemented by MSME actors. The long-term goal of this research is to enrich the development of knowledge related to the field of accounting information systems. The specific objective is to examine the acceptance of the implementation of the Si Apik application as an alternative to assist MSME actors in managing financial transactions, serving as a solution to the problem of financial transaction recording in MSMEs using SOR Theory.

Data collection in this study was carried out by distributing questionnaires and conducting interviews with MSME actors in Banyumas Regency who served as respondents. The sampling technique in this study used purposive sampling, and data analysis was performed using regression testing with the assistance of SPSS. The targeted outputs are a training module based on accounting information recording for MSMEs and publication in reputable international journals.

The research results indicate that the SOR theory is able to explain the phenomenon of implementing the Si Apik application in MSMEs in Banyumas Regency. The aspects of the SOR theory concept, namely Stimulus-Response-Organization-Response, have been proven to influence the acceptance of the Si Apik implementation among MSMEs in Banyumas Regency.

Keywords: Accounting application, web si apik, financial statements, MSMEs, SOR Theory

Solutions to Translation Errors in Fiction Texts: An Analysis of the Role of Context and Translator Competence

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Abstract

This study aims to analyze the causes of translation errors in fictional texts and to identify effective solutions to address these issues, with an emphasis on the role of context and translator competence. Fictional texts often contain cultural, idiomatic, and metaphorical elements that make translation particularly challenging. Although translators may possess technical skills, inaccuracies in understanding cultural and situational contexts frequently lead to errors that affect the meaning and nuance of the story. This research employs a qualitative approach by analyzing translated fictional texts and the errors that occur, as well as examining the influence of narrative context and translator competence in the translation process. This study is a continuation of the first year's research, which found that translation errors were dominated by Usage Errors and Capitalization Errors. Capitalization Errors concern the systematic aspect of writing, while Usage Errors affect the quality of writing, indicating that certain processes were not carried out by the translators, particularly in the restructuring stage. Furthermore, based on the analysis, there are translator competencies that still need improvement, namely linguistic competence, subject matter competence, and strategic competence. Based on these findings, this study aims to propose practical solutions for translators by developing more effective translation methods grounded in contextual understanding and enhanced translator competence.

Keywords: translation errors, fiction texts, translator competence, context, qualitative analysis, translation strategies

Tambaknegara Village Community Perception of the Serayu Mangrove Adoption Program

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Abstract

The Serayu Mangrove Adoption Program is an environmental conservation initiative aimed at restoring the function of the mangrove ecosystem along the Serayu coast, particularly in Tambaknegara Village. This study aims to determine the perceptions of the Tambaknegara Village community regarding the program's implementation, as well as the extent to which the community is involved and feels its impact. The method used is a qualitative approach with data collection techniques through in-depth interviews, field observations, and documentation studies. The results show that the majority of the community has a positive perception of the mangrove adoption program, especially in terms of increasing environmental awareness, economic potential through ecotourism, and protecting riverside areas from abrasion. However, there are also several challenges such as the lack of comprehensive socialization and limited community participation in decision-making. This study concludes that the success of the...

Keywords: community perception, environmental conservation, mangrove adoption, participation, Tambaknegara

Knowledge-Sharing Forum : Contributing to Empowerment and Solidarity in Southern Thailand

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Abstract

The people of southern Thailand have undergone a process of assimilation in terms of identity, economy, education, and religion as a result of the Kingdom of Thailand's rule. The majority of the population in southern Thailand adheres to Islam and speaks the Malay language. They still share cultural ties with the *nusantara*, making cooperation in educational development, religious strengthening, and cultural identity preservation crucial. In this context, the Indonesian–Thailand Alumni Association (PERSAIT) provides opportunities for collaboration in community service, focusing on educational development, cultural exchange, and the enhancement of fraternal relations with Indonesia. The community service activities target school and Islamic boarding school students, and are carried out alongside the assignment of KKN field supervisors (DPL) in Southern Thailand. The program locations include Darul Hikmah School, Rajaprachanukhoh 39 School (Narathiwat Province) and Triamwittaya School, Muslim Pattanasart (Pattani Province). The results of these activities show that the community—particularly school and Islamic boarding school students—greatly need additional knowledge and experiences in various fields, both in science and in motivation to achieve a brighter future. Most of them come from underprivileged groups, relatively left behind compared to other communities in Thailand. Therefore, fostering fraternal ties with Indonesia and maintaining a commitment to improving education are highly meaningful for their future.

Keywords: Southern Thailand, education, culture, PERSAIT, Indonesia–Thailand relations

Implementation of the Culturally Responsive Teaching (CRT) Approach to Enhance Self-Efficacy and Pedagogical Competence of Preservice Teacher Education Students

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Abstract

This study aims to enhance the self-efficacy and pedagogical competence of preservice teacher education students through the implementation of the Culturally Responsive Teaching (CRT) approach. CRT is an approach that integrates students' cultural backgrounds into the learning process to make the learning experience more relevant and meaningful. This research employed a classroom action research (CAR) design, conducted in two cycles, with each cycle consisting of the stages of planning, implementation, observation, and reflection. The research subjects were 50 preservice teacher education students, consisting of 10 male students and 40 female students. Data on self-efficacy and pedagogical competence were collected using questionnaires and observation sheets, and the data were analyzed using descriptive quantitative techniques. The results indicate significant improvement: self-efficacy and pedagogical competence showed progress in cycle I, although not yet optimal. The implementation of cycle II led to a notable increase in self-efficacy, reaching an excellent qualification, while pedagogical competence reached a high qualification.

Keywords: Culturally Responsive Teaching, Self-Efficacy, Pedagogical Competence, Preservice Teacher.

The Existence of Bonokeling's Customary Inheritance Law Amidst Legal Pluralism

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Abstract

This research aims to analyze the role and implementation of customary law in the inheritance system of the Bonokeling Indigenous Community in Pekuncen Village, Jatilawang District, Banyumas Regency, Central Java Province. In the era of globalization, this community has successfully maintained its inheritance law amidst legal pluralism, which includes state and colonial law. The Bonokeling Indigenous Community consistently utilizes customary law as the primary foundation for resolving inheritance disputes.

This study employs a qualitative approach and a case study method. Data were collected through in-depth interviews, focus group discussions (FGD), and participatory observation in Pekuncen Village, Banyumas, Central Java.

The findings indicate that deliberation and consensus (*musyawarah mufakat*) are central to the inheritance system of the Bonokeling Indigenous Community, which is based on the principle of kinship rather than formal legal hierarchy. The distribution of inheritance is conducted collectively by the family or the eldest surviving relative, with a priority on balance and justice.

This research contributes to demonstrating how an indigenous community can maintain and adapt its legal practices within the context of legal pluralism in Indonesia. The findings affirm that the legitimacy of customary law stems from social consensus, which effectively preserves harmony and social cohesion within the community.

Keywords: Legal Pluralism, Inheritance, Bonokeling Indigenous Community.

The Influence of Academic and Psychosocial Support on the Study Success of Students in the Papua Affirmation Program

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Abstract

This study aims to analyze the influence of academic and psychosocial support on the study success of students in the Papua Affirmation Program at Jenderal Soedirman University. The background of this research stems from the challenges of academic and socio-cultural adaptation faced by Papuan students pursuing higher education outside their home regions. The research employed a quantitative approach using surveys, with participants consisting of students receiving the Papua Affirmation Program at Jenderal Soedirman University. Data were analyzed using multiple regression to examine the contribution of independent variables to study success. The findings reveal that academic support, including lecturer guidance, academic services, and learning facilities, has a significant effect on students' academic achievement. Likewise, psychosocial support in the form of environmental acceptance, motivation, and emotional support has a positive impact on study success. These results highlight the importance of collaboration between educational institutions, lecturers, and the social environment in creating a conducive learning ecosystem.

Keywords: Academic Support, Psychosocial Support, Study Success, Papua Affirmation Program

Improving Financial Literacy Skills through the Independent Financial Training Model for Housewives in Karanglewas District

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Abstract

Financial literacy is an important skill for the community, especially housewives who play the role of the main manager of family finances. This research aims to improve the financial literacy skills of housewives in Karanglewas District through an independent financial training model. The research method uses a participatory action research (PAR) approach with the stages of planning, implementation, evaluation, and reflection. The results of the study showed that there was an increase in participants' understanding of financial planning, family cash flow recording, savings management, and the use of formal financial service products. This training also encourages changes in the attitude of housewives to be wiser in consumptive spending and increase awareness of the importance of saving and investing. These findings confirm that the independent financial training model is effective as a community empowerment strategy at the household level.

Keywords: financial literacy, independent financial training, housewives, empowerment

The Influence of Climate Change and Energy Consumption on Economic Growth in Indonesia

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Abstract

Climate change and energy consumption are two important factors that can affect economic growth. This study aims to analyze the influence of climate change and energy consumption on Indonesia's economic growth. This study employs a multiple linear regression method using time series data from 1992 to 2023 and finds that climate change and renewable energy consumption harm Indonesia's economic growth, whereas non-renewable energy consumption has a positive effect. The findings of this study confirm that the quality and resilience of electricity services can mediate the impact of climate change on the economy. When access is not accompanied by reliability, climate change can render such access fragile, thereby hampering economic growth. These findings imply the need for various efforts to reduce the vulnerability of the electricity system to climate shocks, the Government needs to encourage private capital participation and design incentives that focus on improving efficiency and innovation, combining energy transition policies with labor reskilling programs and technological incentives to maintain the long-term effects of renewable energy consumption to support growth sustainable economy, the need for a prudent energy transition strategy so that its short-term benefits can be transformed into the foundation of a sustainable energy transition, the Government can utilize the contribution of fossil energy to economic growth as capital to fund investments in renewable energy infrastructure so that it can reduce dependence on current non-renewable energy and strengthen renewable energy capacity in the future.

Keywords: climate change, renewable energy, non-renewable energy, economic growth

The Potential Effect of Ciplukan (*Physalis angulata* L.) Extract on Neutrophil Gelatinase-Associated Lipocalin (NGAL) Levels in Diabetic Rat Models

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Abstract

Diabetic nephropathy is a major complication of diabetes mellitus, and Neutrophil Gelatinase-Associated Lipocalin (NGAL) is a sensitive biomarker for its early detection. Ciplukan (*Physalis angulata* L.) is known to possess antidiabetic compounds and may prevent nephropathy. This experimental study involved 25 male Wistar rats (*Rattus norvegicus*) divided into five groups: healthy control, diabetic control, and treatment groups receiving Ciplukan extract at 75, 150, and 300 mg/kgBW for 28 days. Serum NGAL levels were measured by ELISA method, and data were analyzed using ANOVA and post hoc tests. The results showed that the mean NGAL levels were 10.56 ng/mL, 55.86 ng/mL, 16.51 ng/mL, 21.47 ng/mL, and 24.67 ng/mL across the groups, with significant differences observed ($p = 0.000$). Post hoc analysis revealed significant differences between the healthy control and diabetic control groups ($p = 0.000$) and all treatment groups had significantly lower NGAL levels compared to the diabetic control ($p = 0.000$). This study demonstrates that Ciplukan extract significantly reduced serum NGAL levels in diabetic rat models, indicating its potential as a natural therapeutic agent for diabetic nephropathy.

Keywords: diabetes mellitus, *Physalis angulata* L., diabetic nephropathy, NGAL

Religious Care and Situated Agency: The Politics of Care by an Indonesian Faith-Based NGO for Migrant Workers in Hong Kong

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Abstract

This article examines the activity of a faith-based NGO within the framework of the politics of care, focusing on Dompot Dhuafa Hong Kong (DDHK), an organization that supports Indonesian migrant workers in Hong Kong. Through a qualitative case study involving interviews, targeted observations, and document analysis, we conceptualize DDHK's integrated model, comprising *dakwah* (religious guidance), social-health-advocacy services, and training (e.g., Cantonese literacy and sewing), as a care infrastructure in the destination country that addresses the needs of migrants living and working there. In addition to providing education, religious support, and strategic planning amid uncertainty, the organization also facilitated religious activities and volunteer networks to engage in compassionate solidarity and collaborative problem-solving. Utilizing the concept of situated agency, we interpret outcomes not as acts of heroic resistance but as quotidian, tactically negotiated practices, such as organizing visa procedures, managing remittances, and establishing boundaries with employers, facilitated by care infrastructures that augment competence and responsiveness. We contend that DDHK implements a politics of care at the destination that (1) transforms faith-based care into tangible services and competencies, (2) fosters solidarity through religiously influenced mutual assistance, and (3) widens migrants' repertoires of situated action within the structural constraints they faced as migrant workers.

Keywords: politics of care, faith-based NGO activism, situated agency, Indonesian migrant workers, Hong Kong

Revitalization of Agricultural Language Varieties: a Study on Pengiyongan, Sasak, and Balinese Dialects

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Abstract

Agricultural register is a distinctive linguistic variety of farming communities that encompasses technical terms, ecological values, and local wisdom inherited across generations. This linguistic variety functions not only as a means of communication but also as a representation of the relationship between humans, nature, and agrarian culture embedded in community life. However, in the era of digitalization and globalization, its existence is increasingly threatened due to its diminishing use among younger generations who are becoming detached from traditional agrarian practices. This condition has led to a significant decline in agricultural register, placing it at risk of extinction if not promptly documented and revitalized. This study aimed to revitalize agricultural registers in three local dialects: Pengiyongan (Banyumas–Central Java), Sasak (Lombok–West Nusa Tenggara), and Balinese (Bali), through a comparative sociolinguistic analysis and digital repository development in the form of a contextual education dictionary. The research employed a descriptive-qualitative method. The data were collected through participatory observation, in-depth interviews, and field documentation. The collected data were further processed with domain analysis, taxonomic analysis, componential analysis, and cultural theme analysis. The findings showed that Pengiyongan register emphasized more on terminologies reflecting the communal cooperation (*gotong royong*) in rice field management, Sasak register was rich in vocabulary related to rituals and agrarian beliefs, while Balinese register was rooted in the philosophy of *Tri Hita Karana*. The comparative analysis found similarities in the concepts of collective work and ecological management, and differences in linguistic expressions and cultural values.

Keywords: agriculture, culture, local wisdom, register

Retrospective Policy Analysis of Village Fund Priorities in Strengthening Food Security at the Village Level

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Abstract

This study aims to analyze the policy of Village Fund priorities in strengthening food security at the village level by reviewing the regulatory framework of the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Permendesa PDTT) from 2015 to 2025. Retrospective policy analysis is an evaluative approach that reassesses policies already implemented, examining the political interests shaping them and ensuring that policy implementation aligns more effectively with community needs. The research employed a qualitative approach with a *time series* design, focusing on regulatory dynamics, implementation practices, and the role of political actors. The findings reveal significant shifts in policy orientation: (1) Permendesa PDTT No. 21/2015 and No. 19/2017 authorized villages to directly utilize funds for food-related infrastructure; (2) Permendesa PDTT No. 16/2018 and No. 7/2021 emphasized community empowerment and cash-for-work programs; (3) Permendesa No. 2/2024 required that at least 20% of Village Funds be allocated to food security initiatives; and (4) Permendesa No. 3/2025 mandated implementation through equity participation in Village-Owned Enterprises (BUMDes/BUMDesma). These changes indicate a paradigm shift from a government-driven model toward an institutional model based on village enterprises. However, instability in the three pillars of food security—availability, accessibility, and sustainable utilization—remains, largely due to top-down political dominance, weak problem-based analysis, and limited integration with local capacities and the Village SDGs agenda.

Keywords: Retrospective Policy; Village Fund; food security; Permendesa PDTT; BUMDes

More Than Just Pills : Lived Experiences of Adult Thalassemia Patients on Iron Chelation Therapy

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Abstract

Thalassemia is a genetic disorder that requires lifelong blood transfusions and iron chelation therapy to prevent iron overload. Adherence to chelation therapy remains a challenge, particularly among adult patients; thus, a deeper understanding of their experiences is needed. This study aimed to explore the experiences of transfusion-dependent thalassemia patients in undergoing iron chelation therapy. A qualitative design using Interpretative Phenomenological Analysis (IPA) was applied. Fourteen participants were recruited after approval from the institutional ethics committee, and data were collected through semi-structured interviews between May and August 2025. Data analysis followed the IPA stages. The findings revealed several themes: treatment was perceived as beneficial, self-motivation was essential for adherence, and social support strongly influenced compliance, while drug side effects and the lack of ferritin reduction lowered motivation. Adulthood presented unique challenges in maintaining adherence. Specific themes also emerged, including fear of death if medication was not taken and experiences of discrimination due to the need for daily medication. This study concludes that adherence to iron chelation therapy is shaped by the interplay between internal motivation, external support, and emotional experiences. Strengthening psychosocial interventions and social support is crucial to improve adherence and the quality of life of thalassemia patients.

Keywords: Adherence, Iron-Chelation Therapy, Thalassemia, Adult, Qualitative

Women's Representation in Three Cycles of Simultaneous Local Elections in Central Java: A Portrait of Political Vulnerability

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Abstract

This paper aims to examine women's representation in the simultaneous regional elections (*pilkada*) in Central Java over the last three periods, namely 2015–2024. This topic is significant because women's political representation in *pilkada* tends to remain stagnant. The study employs a literature review approach, prioritizing relevant and valid sources. The findings reveal that the number of female candidates participating in the 2024 *pilkada* in Central Java was higher compared to the two previous elections. However, the percentage of women elected as regents declined as the number of competing candidates increased. Viewed from the *root of power*, several female candidates had backgrounds as incumbents or party cadres, while others were connected to influential local figures such as their husbands or fathers. Furthermore, some elected female regents incorporated gender issues into their campaign materials, although these did not consistently reflect a strong gender perspective. These findings indicate a condition of *political vulnerability*, in which women's political representation remains unstable and fluctuating due to the challenges faced by female candidates in the nomination process and in winning *pilkada*. Nevertheless, efforts to strengthen women's political representation must continue to be fostered, including by encouraging the mainstreaming of gender-sensitive campaign issues promoted by elected female regents.

Keywords: women's political representation, simultaneous regional elections, Central Java, political vulnerability

Home Visit in The Juvenile Justice: A Comparative Study Between The Indonesian Juvenile Justice Law and International Instruments

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Abstract

Home visits constitute one of the essential instruments within the juvenile justice system, serving to ensure that the rehabilitation process for juvenile remains aligned with the principle of the best interests. Their implementation reflects a rehabilitative and restorative approach that emphasizes the involvement of both family and community. The purpose of this study is to examine the scope of home visits in the Indonesian Juvenile Justice Law as well as in international instruments. This research relies on secondary data through statutory, comparative, and conceptual approaches. The findings reveal that the scope of home visits in the Indonesian Juvenile Justice Law covers the supervision of diversion and community reintegration programs. The relevant international instruments consist of the Beijing Rules (1985), the Convention on the Rights of the Child (1989), the Riyadh Guidelines (1990), and the Havana Rules (1990). Among these four, the concept of home visits is explicitly stipulated only in the Beijing Rules, which include monitoring juvenile's behavior, participation in community programs, and residence in halfway houses. Thus, the scope of home visits, both under the Indonesian Juvenile Justice Law and the Beijing Rules, extends beyond supervising juvenile's behavior at home to encompass their interaction with the social environment.

Keywords: community-based sentences, home visit, juvenile criminal justice system, juvenile rehabilitation, restorative justice.

The Internalization of Belief-Value Education in Adherent Families: Patterns, Processes, and the Challenge of Regeneration

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Abstract

This study aims to describe the patterns, processes, values, and regeneration challenges in the internalization of belief-value education within adherent families in Indonesia. The research was conducted in Banyumas Regency, Central Java, using a qualitative method with a field study approach. The informants consisted of eight individuals, including two women and six men, who were adherents from four different associations, with one informant not affiliated with any association. Data were collected through in-depth interviews, observation, and documentation, and analyzed using an interactive analysis model comprising data collection, data condensation, data display, and conclusion drawing, which were carried out continuously. The findings indicate three main patterns of internalization: direct transmission of values, guidance and accompaniment, and allowing children to make independent decisions. The process of internalization takes place through introducing teachings in accordance with contemporary developments, participation in belief education at schools, experiencing traditions that reflect the relationship between the macrocosm (jagad gedhe) and the microcosm (jagad cilik), providing space for children to explore their own beliefs, and delivering teachings subtly while adapting to changing times. The core values instilled include moral character, respect for others, Javanese cultural awareness, the principle of divinity, tolerance, and responsibility for one's choices. The challenges of regeneration involve the younger generation's tendency to prefer formal religions, social stigma labeling adherents as atheists, and limited awareness of government facilitation in civil administration services.

Keywords: belief-value education; adherent families; internalization patterns and processes; regeneration challenges

Cytotoxicity of Bioactive Peptides from Cowpea (*Vigna unguiculata* L. Walp) Against Breast Cancer Cells (MCF-7)

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Abstract

Cancer is a disease that attacks metabolic signaling and causes uncontrolled cell growth. Cancer treatments including surgery, radiotherapy, and chemotherapy still causes dangerous side effects. Therefore, exploring anticancer compound from protein sources such as peptides, was one of step that could be performed by finding the Anticancer Peptides (ACPs). Bioactive peptides was isolated from cowpea (*Vigna unguiculata* L.Walp) protein hydrolysis using trypsin enzyme. The purpose of this research was to isolation and fractionation bioactive peptide from cowpea, determine the anticancer activity of peptide fractions, and identification active peptide fraction using LC-HRMS. The research began with defatting and protein separation, ammonium sulfate fractionation, dialysis, hydrolysis and determination of the degree of hydrolysis, fractionation with SPE, then tested for cytotoxicity with BSLT and Resazurin Assay. Fraction with highest anticancer activity tested using LC-HRMS and the properties of the resulting peptides were investigated. Degree of hydrolysis obtained was 54.3% with weight of peptide <3000 kDa. Hydrolyzed peptide fraction with the most active anticancer activity was shown by the 75% methanol fraction in MCF-7 breast cancer cells with an IC₅₀ value of 4.19 µg/mL. The results of identification using LC-HRMS, the 75% fraction contains 12 peptides, namely SQKPIYSNK, AILTLVNPdGR, NQYGHLR, LAVPVNNPHR, LHEITPEK, DSYILEQQGHAQK, EQQQQQQEESEWVQR, QQDEESQQEGVIVQLK, GQNNPFYFDSR, VLFGEEEQK, EGGLLMPNYNSK, WFHTLFR.

Keywords: anticancer, cowpea, IC₅₀, peptide, trypsin enzyme

Systematic Review: Midwives' Perceptions of Patient Safety and Their Impact on Patient Outcomes

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Abstract

This systematic literature review examines midwives' perceptions of patient safety and their influence on maternal and neonatal outcomes. Using a PRISMA-based selection process, four primary quantitative studies published between 2020 and 2025 were critically appraised based on JBI criteria. The review identifies key factors shaping midwives' safety perceptions, including staffing adequacy, quality of the work environment, managerial support, and interprofessional communication. Evidence shows positive safety perceptions correlate with reduced adverse clinical outcomes, such as obstetric trauma and delayed emergency responses. Conversely, negative perceptions—often driven by understaffing, high patient turnover, and poor working conditions—are associated with a higher risk of complications. Interventions such as structured safety feedback, participatory planning, and leadership engagement significantly improve midwives' perceptions of safety, teamwork, and job satisfaction. Furthermore, midwives who feel supported and involved in organizational decision-making are more likely to remain in their positions, contributing to workforce stability and continuity of care. These findings underscore the importance of integrating structural, interpersonal, and cultural improvements in maternity settings. By prioritizing midwives' involvement in safety strategies, healthcare institutions can enhance patient outcomes and foster a sustainable culture of safety in maternal care services.

Keywords: Patient safety, midwives, maternal health, work environment, safety perception

Good Practices in The Development of Melung Tourism Village in Banyumas Regency

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Abstract

In recent years, many tourist villages have been developed. This is a form of increasing village development, as well as a manifestation that tourism is increasingly becoming a community need. Banyumas Regency is developing tourist villages, of which 20 villages have been named as tourist villages. There are 3 categories of tourist villages, namely advanced, developing, and pioneering categories. There is only one tourist village in the advanced category, namely Melung Village, which is located in Kedungbanteng District. The status of the developing category of tourist villages is only 4 villages, while the pioneering tourist villages are 15 villages. In addition, Melung Village also won 4th place at the national level in 2024. The good practices of Melung Village should serve as an example for other villages that wish to develop into tourist destinations. The research method used in this study is a qualitative method. The results of the study show that the good practices carried out by Melung Village to become the most advanced tourist village are: 1. Utilizing the potential and natural resources, as well as a cool and beautiful environment. 2. Empowering and mobilizing community participation through small and medium enterprises. 3. Building networks with various stakeholders related to tourism village development. 4. Utilizing existing traditions as events to be presented to tourists. 5. Utilizing social media to promote tourism destinations. 6. Utilizing “bengkok” land to build tourist sites. 7. Utilizing informal opportunities to discuss various village issues, including those related to tourism villages.

Keywords: Good practices, Development, Tourism village, Melung

Inorganic Waste Composition and Integrated Solid Waste Management Strategies in Purwokerto

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Abstract

Urban waste management in developing countries is becoming more and more difficult due to rising trash quantities and a range of institutional capabilities. The capital of Banyumas, Purwokerto, Indonesia, has received both national and international recognition for its innovative digital waste governance and community-based programs, such as the digital platform. Few empirical research, nevertheless, have evaluated how the density and composition of garbage at the neighbourhood recycling facility relate to these governance initiatives. With the help of qualitative information from stakeholders, this study uses SNI 19-3964-1994 standards to analyse the waste profile at Sokanegara recycle center (PDU) over an 8-days sampling period, using SNI 19-3964-1994 standards, and is supported by qualitative insights from stakeholders. Result shown that inorganic waste, accounts for the largest portion (53.43%), with densities ranging from 167.28 to 260.74 kg/m³. The largest composition of inorganic waste found was LDPE plastic (13.7%), followed by duplex paper/magazines (7.65%), then sanitary napkins/diapers (5.59%). However, digital-based waste classifying efforts showed early promise, community involvement is dwindling. These findings underscore the need to optimize existing processing units and improving the coordination procedure between household waste practices and facility-level operations. Improving the efficiency of waste treatment and strengthening institutional support for digital platforms could emphasize Purwokerto's sustainable waste governance model as a preliminary framework for other Southeast Asia cities.

Keywords: Solid waste, waste composition, inorganic waste, municipal solid waste, solid waste management.

Dietary Replacement Effect of Fish Meal by Maggot (*Hermetia illucens*) Hydrolysate on Performance and Nutrient Digestibility in Native Chicken Feed

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Abstract

Maggot meal (*H. illucens larvae*) contains protein and amino acids resemble to fish meal. However, maggot meal have limitations, they high fat content and chitin (fiber protein), which is anti-nutritional. The hydrolysis method using crude enzymes (protease, lipase, and chitinase) can be an innovation to improve the quality of maggot meal. The purpose of this study was examined the effect of fish meal substitution with maggot hydrolysate on the performance and nutrient digestibility of native chicken diet. The experimental study used 150 male DOC native chickens were maintained for 45 days. The experimental design used a Completely Randomized Design (CRD) and five treatments, namely D0 as a control diet (100% fish meal + 0% maggot hydrolysate), D1: 75% fish meal + 25% maggot hydrolysate, D2: 50% fish meal + 50% maggot hydrolysate, D3: 25% fish meal + 75% maggot hydrolysate and D4: 0% fish meal + 100% maggot hydrolysate. The results of anava showed that the substitution of fish meal using maggot hydrolysate in native chicken diets had a very significantly effect ($P < 0.01$) on the performance and nutrients digestibility. Honestly Significant Difference test informed that the substitution of fish meal using maggot hydrolysate in native chicken diets did not improve performance, protein and crude fiber digestibility but the digestibility of crude fat was risen. Substitution of fish meal using maggot hydrolysate at 25% in native chicken diets resulted in the best performance and nutrients digestibility of the native chicken diet.

Keywords: enzymes, digestibility, maggot, performance, substitution, native-chicken

Passion Meets Creativity: A Dual Pathway to Entrepreneurial Intention

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Abstract

Entrepreneurial intention is regarded as a key determinant of entrepreneurial behavior; however, the mechanisms influencing its formation remain an ongoing issue in the entrepreneurship literature. This study aims to examine the effect of entrepreneurial passion and creativity on entrepreneurial intention. The theoretical framework is grounded in the Theory of Planned Behavior, positing that entrepreneurial passion serves as a motivational driver, while creativity functions as a cognitive resource essential for opportunity recognition and innovation development. Data were collected through a survey of 110 university students with entrepreneurial exposure and analyzed using Structural Equation Modeling (SEM). The findings indicate that entrepreneurial passion and creativity have a positive and significant effect on entrepreneurial intention, with evidence of a complementary effect when both variables interact. These results confirm the existence of a dual pathway through affective and cognitive factors in shaping entrepreneurial intention. Theoretically, this study contributes to the entrepreneurship literature by providing an integrative perspective on the role of emotional and cognitive capacities in fostering entrepreneurial aspirations. Practically, the findings suggest that entrepreneurship education should not only focus on enhancing business knowledge but also emphasize the development of passion and creativity to strengthen entrepreneurial intention.

Keywords: entrepreneurial passion, creativity, entrepreneurial intention

Economic Valuation of Polyethylene Terephthalate , Paper, and Cans Recycling in Purbalingga, Central Java

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Abstract

This study examined about waste circular economic value of certain inorganic waste categories, emphasizing the significance of waste separation and local recycle centre (hereinafter referred to as PDU) in fostering community-based waste management, used secondary data gathered from local PDU in a descriptive quantitative method. Compositional waste analysis between years and waste types (polyethylene terephthalate-PET, scrap papers, and cans) are examples of analytical techniques. PET continuously showed the greatest percentage across waste types during 2021–2024, indicating a considerable variation in the economic worth of garbage. Commonly, the expected revenue from commercial stakeholder at least three kilograms of recyclable garbage, which emphasizes the importance of community involvement in putting the local circular economy into practice. The study comes to the conclusion that in addition to generating additional household income, supporting waste storage facilities and encouraging less than 20% of the Purbalingga total population to participate in PET separation might drastically reduce the volume of garbage generated overall. Estimating the circular economic potential worth of household inorganic trash through the combination of compositional waste data and local pricing systems provides a data-driven basis for local planning and policy in sustainable waste management.

Keywords: inorganic waste, sustainable waste management, recycle centre, PET, circular economy

Community-Based Waste Management Strategy Through the Garbage Charity Movement: An Effort to Empower Community Welfare at Teluk Penyu Beach, Cilacap

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Abstract

The volume of waste at Teluk Penyu Beach, Cilacap, continues to increase, especially during the NATARU holidays, reaching 2.0 tons -2.5 tons per day. The volume of waste has an impact on environmental pollution, but if managed well, through community empowerment based on the waste charity movement, it will be beneficial economically, environmentally and socially. This movement is an effort to increase social solidarity and community welfare. For this reason, community empowerment in the waste charity movement is needed. The objectives of the study (1) To examine the understanding, awareness, response in the waste charity movement. (2) To examine community empowerment in the waste charity movement as an effort to improve the welfare of the community, (3) To build a community-based waste management strategy through the waste charity movement as an effort to improve the welfare of the community. The research method uses descriptive qualitative methods, and action research. Informants were taken by purposive sampling, analyzed with interactive analysis. The results show that the informants' understanding of waste charity is generally still low, but they are aware that waste causes environmental pollution and there needs to be a solution, a positive community response to the waste charity movement. Empowerment in building a waste charity movement has never been done before, and the public generally lacks understanding of its goals and benefits. The results of socialization about the waste charity movement showed that the community was very enthusiastic about implementing the waste charity movement. The strategy for building a waste charity movement requires an intensive social approach with waste-conscious communities, community leaders, mosque administrators, neighborhood association (RW) administrators, village heads (dasa wisma) and the Family Welfare Movement (PKK). A pilot model is needed so that the community believes in the benefits of the waste charity movement. This is crucial in efforts to strengthen social solidarity and improve community welfare.

Keywords: Garbage charity, Solidarity and Welfare

Molecular Identification of Sparidae Members Collected from North Coast of West Java

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Abstract

This study aimed to evaluate species diversity of economically important fish from the Sparidae family landed in several fishing ports on the North Coast of Java Island through morphological identification and DNA barcoding. The study was conducted using a survey method with incidental sampling. Fish samples were collected from fishing ports in Tangerang, Jakarta, Karawang, Indramayu, and Cirebon. Twentynine individuals were obtained during the field trips. Fin clips of each individual were used for molecular identification. Morphological identification placed the samples into two morphotypes, namely *Acanthopagrus* and *Argyrops*. Molecular identification put samples into three different genetic species, i.e. *Acanthopagrus pacificus*, *Argyrops spinifer*, and *Argyrops bleekeri*. This result was different to previous study in the south coast of Java where four species of Sparidae were reported i.e. *A. pacificus*, *A. bleekeri*, *Evynnis tumifrons*, and *Pagrus major*. Three species of Sparidae were identified during the sampling in the North Coast of West Java.

Keywords: homologi, jarak genetik, kemiripan, monofili, Sparidae

Utilization of Water Hyacinth for The Production of Humic Acid Powder (An Effort to Control Eutrophication of "Embung Lereng" Waters of Grabag Purworejo)

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Abstract

One solution to overcome the problem of water eutrophication is to utilize water hyacinth for humic acid production. In this process, the additional materials are needed as a carbon source and microorganism activator. The objectives of this study were (1) to determine the interaction between plant parts and molasses to produce the highest humic acid. This study used Completely Randomized Design (CRD) with two factors; plant parts (roots, stems, leaves) and concentration of molasses (50, 100, 150, 200 mLkg⁻¹) for 3 times replication. The parameter measured was the production of dry weight of humic acid powder. Data analysis used ANOVA and continued with the DMRT test. The results showed that there was a significant effect on the provision of molasses concentration on the fermentation of the different plant parts. This study can be concluded that a different concentrations of molasses and plant parts showed differences in the resulting humic acid production. The conclusion showed that the addition of 150 mL.kg⁻¹ molasses to the fermentation of water hyacinth roots (AM3 treatment) produced the highest humic acid content up to 98.5 g.kg⁻¹ or 9.5%.

Keywords: Eutrophication, Fermentation, Humic Acid, Molasses, Water Hyacinth

Preparation of Photoelectrochemical BiVO₄/rGO Sensor From Pet Waste for H₂O₂ Detection as a Biomarker of Chronic Obstructive Pulmonary Disease

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Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a progressive respiratory disorder with rising global prevalence and limited early diagnostic tools. Hydrogen peroxide (H₂O₂) in exhaled breath condensate is a key biomarker of oxidative stress and disease severity, but current detection methods such as spirometry suffer from low sensitivity and invasiveness. This study proposes a low-cost, photoelectrochemical (PEC) sensor based on a bismuth vanadate (BiVO₄) photoanode modified with reduced graphene oxide (rGO) synthesized from polyethylene terephthalate (PET) waste. PET, a carbon-rich plastic, was converted to rGO via catalytic pyrolysis, providing a sustainable route to high-conductivity nanomaterials while addressing environmental plastic pollution. BiVO₄/rGO composites were hydrothermally prepared with controlled mass ratios, characterized by X-ray diffraction, electron microscopy, infrared spectroscopy, and UV-Visible spectroscopy to confirm crystal structure, morphology, and band-gap tuning. The fabricated sensor demonstrated photo-current density, charge separation, and selectivity toward H₂O₂. This research introduces an eco-innovative PEC platform that simultaneously supports early COPD diagnosis and PET waste valorization, offering strong potential for clinical application and scalable green technology.

Keywords: BiVO₄/rGO, photoelectrochemical sensor, hydrogen peroxide detection, PET waste recycling, chronic obstructive pulmonary disease

Barcoding of Fish Collected in The Downstream of Ijo River During Dry Season

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Abstract

This study aimed to assess fish diversity in the downstream of Ijo Rivers Kebumen, Central Java during dry season identified using barcoding technique. Fish samples were collected randomly in the downstream of Ijo River using cast nets with the help of fishermen. Fish was sorted based on their general morphology and identified as morphotypes. A fin clip of each morphotype was shipped to company for barcoding processes. The cytochrome c oxidase 1 was used as barcode marker. The obtained sequences were edited manually in BioEdit software version 7.1. Species status of each morphotype was determined based on a minimum genetic identity of 99%. The results showed that 15 morphotypes were obtained from the downstream of Ijo River during dry season. All the morphotypes were successfully barcoded with the genetic identities of the samples were ranged between 99.67% and 100% to the reference species in BOLDsystems. The values indicated that the samples were belonged to the same species as the reference species. In one hand, barcoding results supported morphological identification. In other hand, barcoding results were different from morphological identification. Fifteen fish species were collected from downstream of Ijo River during dry season and successfully barcoded.

Keywords: fish, genetic species, Kebumen, morphotype, river

Achieving Sustainable Development Goals through Halal Micro Small Medium Enterprises: Evidence from Digital Marketing, Product Innovation, and Islamic Economic Practices

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Abstract

The halal economy has become one of the fastest-growing segments of global trade, with micro, small, and medium enterprises (MSMEs) serving as critical drivers of economic inclusivity and resilience. This study aims to investigate how halal MSMEs can contribute to the achievement of Sustainable Development Goals (SDGs) by examining the roles of digital marketing strategies, halal product innovation, and Islamic economic practices. A quantitative survey was conducted with 200 halal MSMEs in Indonesia, and the data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The findings reveal that both digital marketing and halal product innovation positively influence MSME sustainability. Furthermore, Islamic economic practices—emphasizing fairness, transparency, and Shariah compliance—emerge as significant mediators that strengthen the relationship between business strategies and sustainability outcomes. The study also finds that MSMEs aligning their operations with SDG principles achieve greater legitimacy, consumer trust, and long-term growth compared to those focusing only on market performance. This research contributes theoretically by integrating digitalization, innovation, and Shariah-based economic values into a comprehensive framework of halal MSME sustainability. Practically, it provides insights for entrepreneurs, policymakers, and regulators to design strategies that empower halal MSMEs as both economic actors and agents of global sustainable development.

Keywords: halal MSMEs, digital marketing, product innovation, islamic economics, SDGs

Instrument Development to Predict Preventive Behaviors of Non-Communicable Diseases among Adolescents Using the Theory of Planned Behavior Model

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Abstract

Background: Non-communicable diseases (NCDs) are increasingly prevalent among adolescents, highlighting the need for valid and reliable instruments to assess predictors of preventive behaviors.

Objective: This study aimed to develop and validate an instrument based on the Theory of Planned Behavior (TPB) to measure predictors of NCD prevention behaviors among adolescents.

Methods: A cross-sectional study was conducted among 296 adolescents. Instrument development followed Ajzen's TPB framework, encompassing four constructs: attitude, subjective norms, perceived behavioral control, and intention. Content validity was established through expert judgment (CVI > 0.80). Construct validity was examined using item-total correlations ($r > 0.113$, $p < 0.05$), while internal consistency was tested with Cronbach's Alpha.

Results: All items demonstrated acceptable construct validity ($r = 0.20\text{--}0.70$). Reliability coefficients indicated strong internal consistency across constructs: attitude ($\alpha = 0.829$), subjective norms ($\alpha = 0.815$), perceived behavioral control ($\alpha = 0.756$), and intention ($\alpha = 0.719$).

Conclusion: The TPB-based instrument showed robust validity and reliability, making it a useful tool for predicting preventive behaviors toward NCDs among adolescents. Its application may support future research and the design of health promotion interventions in adolescent populations.

Keywords: adolescents; health behavior instrument development; Non-communicable disease prevention theory of planned behavior

Enhancing Rural Economic Development Through Collaboration Between MSMEs and Village-Owned Enterprises: Evidences from Sunyalangu Village, Banyumas, Indonesia

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) and Village-Owned Enterprises (BUMDes) play a crucial role in promoting inclusive rural economic development in Indonesia. However, empirical studies on how their cooperation supports sustainable local growth remain limited. This study aims to analyze the impacts of collaboration between MSMEs and BUMDes in Sunyalangu Village, Banyumas Regency, with a focus on economic empowerment, institutional strengthening, and community participation. Using a case study approach, data were collected through interviews, focus group discussions, and secondary sources involving BUMDes managers, MSME actors, and village officials. The findings reveal that collaboration has facilitated market access for local products, enhanced the financial capacity of MSMEs, and created new job opportunities. At the same time, BUMDes has strengthened its institutional role as a hub for village economic development. Nevertheless, challenges such as limited capital, managerial capacity, and access to broader markets remain significant barriers. This study highlights that effective collaboration between MSMEs and BUMDes contributes to achieving Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth) and Goal 11 (Sustainable Cities and Communities). Policy support, capacity building, and digital innovation are recommended to enhance the sustainability of such collaborations.

Keywords: MSMEs, BUMDes, Rural Development, Collaboration

Women's Empowerment Through Religious-Based Community Organizations: A Case Study of Salimah and Muslimat in Banyumas Regency

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Abstract

This study examines the effectiveness of women's empowerment through the Salimah organization as a religious-based community organization in Banyumas Regency. Employing a qualitative approach with in-depth interviews and Focus Group Discussions (FGD) conducted with Salimah members in August 2025, data were analyzed thematically to identify the impact of empowerment programs. The findings indicate that the Salimah organization plays a significant role in women's economic empowerment. Culinary skills training programs have proven effective in increasing income and expanding members' marketing networks. The religious community-based empowerment model creates strong social networks with organic recruitment patterns through Islamic values. Transformative impacts are evident in members' ability to establish businesses as primary income sources, supported by Muslim community solidarity. However, the study identifies challenges in program sustainability, particularly financial aspects including a 5% profit-sharing system and regular membership fees that burden members. Organizational communication issues and management responsiveness constitute implementation obstacles. The Salimah organization has proven effective as a women's empowerment platform through the combination of Islamic values and practical economic programs. Improvements in financial structure and communication are recommended for optimizing sustainable empowerment.

Keywords: women's empowerment, Salimah organization, religious-based organization, Banyumas Regency, economic empowerment

Communication Strategy for Stunting Prevention and Management in Sokaraja Subdistrict, Banyumas

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Abstract

Stunting remains a significant public health challenge in Indonesia, with a national prevalence of 21.6% in 2022. Despite various government interventions, behavioral change for stunting prevention faces complex communication challenges. This qualitative study explored the characteristics, barriers, and effectiveness of behavior change communication (BCC) strategies for stunting management in Sokaraja Sub-district, Banyumas Regency, Central Java, to develop a context-specific communication model. We conducted a qualitative study using a pragmatic approach in Sokaraja Sub-district. Data collection included in-depth interviews with 15 key informants (health workers, village officials, community health volunteers, family planning field officers), 3 focus group discussions with 24 participants (parents and community members), and participant observation of stunting intervention activities. Participants were purposively sampled to ensure diverse perspectives. Data were analyzed using narrative analysis to identify patterns and develop a comprehensive communication model. Four major themes emerged: (1) Dominance of face-to-face communication, with health workers confirming direct interaction as most effective; (2) Social stigma as primary barrier, with families across all socioeconomic levels rejecting stunting diagnosis; (3) Limited capacity of community health volunteers handling 5-7 simultaneous programs with minimal training; and (4) Fragmented multi-sector coordination despite convergence policies. Successful innovations included "health marketing" techniques using religious analogies and peer education approaches. Pamijen Village achieved significant stunting reduction through comprehensive leadership commitment and community engagement.

Keywords: communication strategy, stunting, sokaraja, banyumas

Reformulation of Legal Policy Regulating Regional-Owned Enterprises (BUMD) Within the Framework of Regional Autonomy Implementation in Indonesia

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Abstract

The establishment of Regional State-Owned Enterprises (BUMD), as regulated in Article 331 of Law No. 23 of 2014, aims to strengthen Regional Original Revenue (PAD) and boost the regional economy. However, there are issues related to regulatory gaps, poor governance, and political influence that affect the effectiveness of BUMDs. This research aims to analyze the direction of legal policy for regulating Regional State-Owned Enterprises (BUMD) in the context of regional autonomy in Indonesia. The research method used is empirical legal research conducted through observation of policy implementation practices in the field, interviews with relevant parties, and case studies in several regions. The research results indicate that the legal policy regulating BUMD is heavily influenced by the vision and mission of regional heads, which change every period, leading to policy inconsistencies and political interference in BUMD governance. In conclusion, there is a need for a reformulation of legal policies that are more stable and independent of changes in regional leadership to ensure the effectiveness and sustainability of BUMD's role in supporting regional autonomy.

Keywords: Reformulation of Legal Policy, Regional State-Owned Enterprises, Regional Autonomy

Conditional Sentences in Indonesia: Normative Developments and Their Relevance to Offender Rehabilitation and Community Protection

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Abstract

Prison overcrowding in Indonesia, coupled with rising crime rates, reveals the limits of imprisonment as the dominant sanction. Conditional sentencing (suspended sentence) is introduced as an alternative aimed at minimizing the negative effects of short-term imprisonment while supporting rehabilitation and social reintegration. This study examines the normative development of conditional sentencing in Indonesia and evaluates its effectiveness in achieving offender rehabilitation and community protection. Using a qualitative method through literature study, the research analyzes statutory regulations, court decisions, and correctional statistics. Data were categorized thematically and interpreted through descriptive content analysis. The findings indicate that the new Penal Code (KUHP 2023), to be enforced in 2026, significantly modifies the scope and conditions of conditional sentencing. While these reforms expand sentencing options and strengthen probation mechanisms, challenges remain in supervision, institutional coordination, and public acceptance, especially in serious crimes. The study concludes that conditional sentencing can reduce prison overcrowding and enhance rehabilitation, but its success relies on systematic monitoring and societal trust. Without effective oversight, it risks being perceived as a privilege rather than a tool of justice. Strengthening regulations, empowering probation officers, and fostering community involvement are recommended to ensure conditional sentencing functions as a restorative and rehabilitative mechanism.

Keywords: community protection, conditional sentence, rehabilitation of offenders

Key Determinants of Crop Production in Indonesia: Empirical Evidence of The Application of Cointegration Regression

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Abstract

This study investigates the effects of agricultural and energy resource utilization, credit and inflation, and climate change on crop production in Indonesia. The relationship between crop production and its determinants is analyzed using cointegration regression. The regression analysis uses annual data from 1970 to 2022. The study results reveal that fertilizer consumption, renewable energy use, and climate change are key determinants of crop production. Furthermore, there is weak evidence of inflation's impact on production. Crop dependence on fertilizers, particularly chemical fertilizers, has created a cycle in which farmers rely heavily on fertilizers to achieve optimal productivity, but this dependence has negative long-term environmental impacts. Despite the challenges, implementing sustainable agriculture, emphasizing the use of organic fertilizers and renewable energy, is urgently needed to support sustainable crop production. To anticipate the negative impacts of rising temperatures on crops, farmers can implement agricultural adaptation strategies such as the use of climate-resistant varieties to address drought and salinity, adjusting cropping patterns and planting calendars, implementing efficient water management, utilizing cover crop technology, and developing weather early warning systems.

Keywords: climate change, cointegration regression, energy resource, fertilizer consumption, sustainable crop production

Neuroscience Approaches to Enhancing Instagram Engagement for Sexual Violence Prevention

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Abstract

Instagram has become a key medium for spreading messages on the prevention of sexual violence, particularly in universities. However, public engagement with such content remains low. This study, conducted in collaboration with the Mind Research and Imaging Center at National Cheng Kung University, Taiwan, explores how neuroscience can inform the production of Instagram content to improve engagement. An experimental method was employed with participants from Taiwan and Indonesia. Using eye-tracking and electroencephalogram (EEG) devices, participants observed selected content from the Unsoed PPKS Task Force Instagram account. Results indicated similar reactions across participants from both countries, though female participants showed slightly higher interest in sexual violence issues than males. Eye-tracking data revealed that larger fonts and images captured more attention than text, with content placed in the middle and upper-left areas drawing the strongest responses. EEG findings showed greater engagement with activity-based content rather than static text or ceremonial messages. The study suggests that Instagram content for sexual violence prevention should combine varied formats, such as infographics and activity highlights, while maintaining simple designs with focused elements positioned strategically to maximize audience attention.

Keywords: neuroscience, sexual violence prevention, instagram, design content, media digital engagement

Inclusive Communication in The Digital Era: Media Challenges in Empowering Persons with Disabilities Against Sexual Violence

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Abstract

Sexual violence is a pressing issue, including among persons with disabilities, and has become more pronounced with the growing use of digital media. This study, conducted in Yogyakarta using a participatory action research approach, aims to provide a comprehensive understanding of how people with disabilities access digital media, their self-protection strategies against sexual violence online, and the role of media in delivering accessible information and education on prevention. Data were collected through focus group discussions, interviews, and observations involving participants with diverse disabilities, including deaf, blind, physical, mental, and intellectual impairments. Findings show that persons with disabilities are generally familiar with digital technologies. All participants reported owning and operating devices such as smartphones, laptops, and smartwatches. They also demonstrated the ability to overcome barriers to media access and content, for example, using applications like *Be My Eyes* for the blind. Regarding prevention strategies, most participants block suspicious accounts or ignore harmful content. However, they acknowledged that education and training on self-protection against sexual violence in digital spaces remain very limited. The study highlights the urgent need for inclusive digital literacy initiatives to empower people with disabilities and ensure safer participation in online environments.

Keywords: Inclusive Communication, Digital Literacy, Disabilities, Sexual Violence, Media Empowerment

The Effects of Various Types of Sleep Deprivation on Blood Levels of Low-Density Lipoprotein (LDL), Nitric oxide (NO), and The Histomorphological Features of Thoracic Aortic Endothelium in Male Wistar Rats

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Abstract

Sleep deprivation can lead to dyslipidemia, resulting in increased levels of low-density lipoprotein (LDL) in the blood that contribute the oxidative stress mechanisms, lead to a decrease in nitric oxide (NO) levels in the blood and causes endothelial dysfunction. This study aimed to investigate the effects of various types of sleep deprivation (PSD followed by sleep recovery [SR], TSD followed by SR, PSD, and TSD) on blood levels of LDL and NO, and histomorphological features of the thoracic aortic endothelium in male Wistar rats. This was an experimental study using a post-test only with control group design. A total of 25 rats were divided into five treatment groups, A (control), B (PSD + SR), C (TSD + SR), D (PSD), and E (TSD). LDL and NO levels were measured using the ELISA method. The thoracic aorta histomorphological features of the endothelium were observed under a light microscope. Data were analyzed using a One-Way ANOVA test followed by a Tukey Post Hoc test. Significant differences were found in LDL and NO levels in the blood ($p < 0.05$). Various types of sleep deprivation triggered changes in the histomorphological features of the thoracic aortic endothelium in male Wistar rats.

Keywords: sleep deprivation, LDL levels, NO levels, aorta thoracalis.

A Study of Heavy Metal Bioconcentration Factor (BCF) for The Safety of Several Horticultural Commodities in The Dieng Andisols Soil of Central Java

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Abstract

The input for horticultural crops/planting season in Dieng, Central Java, is an average of 20 tons of chicken manure/ha, 1 ton of phonska/ha, 250 kgs of ZA/ha, and several types of pesticides. The accumulation of active ingredients in these agricultural inputs includes heavy metals. Plants accumulate elements, including heavy metals, which can be assessed by the BCF. The BCF value is important as an illustration of whether the horticultural commodity grown for consumption is classified as an accumulator ($BCF > 1$) or not ($BCF < 1$). Bioaccumulator commodities should be consumed with caution, because they have a negative impact on the health of consumers. The purpose of this study was to determine the BCF of potato, carrot, cabbage, and leek plants planted in monoculture and intercropping in Andisols Dieng, Central Java, using organic (chicken manure), biological (bacteria *Pseudomonas* spp. and fungi *Dark Septate Hypae/DSE*), and plants (lemongrass) remediators. The results showed that the BCF values of each horticultural commodity differed, but all were non-heavy metal accumulators ($BCF < 1$). Intercropping was more effective in reducing heavy metal uptake in horticultural commodities. The use of remediators reduced the heavy metal content of Andisols and the BCF of plants.

Keywords: Andisols health, bioconcentration factor, Dieng Central Java, Horticulture health, remediators

Validation of Circulating miR-4435, miR-566, miR-219a, and miR-485-5p Dysregulation in Thalassemia: Evidence from an Independent Cohort

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Abstract

Previous profiling identified consistent upregulation of miR-4435, miR-566, and miR-219a, alongside downregulation of miR-485-5p, in both transfusion-dependent (TD) thalassemia and thalassemia trait (TT) patients compared to healthy controls. To establish their reliability as candidate biomarkers, further validation in a larger, independent cohort is essential. Serum samples were obtained from newly recruited TD patients and matched healthy controls. RNA was isolated and reverse-transcribed using stem-loop RT primers. Quantitative real-time PCR (qRT-PCR) with TaqMan probes was performed to validate expression levels of the four candidate miRNAs. Relative quantification was calculated using the $2^{-\Delta\Delta C_t}$ method, with U6 snRNA as an internal reference. Statistical analysis employed one-way ANOVA with Bonferroni correction, and receiver operating characteristic (ROC) curves were constructed to assess diagnostic performance. qRT-PCR validation confirmed significant upregulation of miR-4435, miR-566, and miR-219a, and downregulation of miR-485-5p, in both TD to controls ($p < 0.01$). Expression trends were consistent with the initial NanoString profiling study. ROC curve analysis demonstrated that individual miRNAs, particularly miR-4435 and miR-485-5p, achieved strong discriminative ability ($AUC > 0.80$), while the combined four-miRNA panel improved sensitivity and specificity in distinguishing thalassemia patients from controls. The study showed that validation using qRT-PCR supports the reproducibility of miR-4435, miR-566, miR-219a, and miR-485-5p dysregulation in thalassemia.

Keywords: thalassemia, circulating microRNA, qRT-PCR validation, miR-4435, miR-566, miR-219a, miR-485-5p

Socio-Economic Analysis and Profitability Assesment of Commercial Layer Farming: Evaluating Production Costs, Revenue, BEP, R/C Ration, and ROI

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Abstract

Egg production supports food security while improving livelihoods in farming communities. This study analyzes the socioeconomic aspects and profitability of commercial layer farming by calculating production costs, revenue, break-even point (BEP), revenue-to-cost (R/C) ratio, and return on investment (ROI). Primary data were collected through surveys and direct observations at several commercial layer farms in Banyumas, Central Java, Indonesia. Commercial layer farming demonstrates financial feasibility, with an average R/C ratio of 1.65 and ROI exceeding 22% per production cycle. The calculated BEP shows that farms reach cost recovery at approximately 329 eggs per hen per cycle, ensuring stable profitability. Layer farming contributes to local employment, household income, and protein availability extending its financial returns, promoting social equity and community resilience. Commercial egg production delivers profitability alongside meaningful social impact. Strengthening farmer support programs and improving access to resources will enhance sustainability and promote food justice.

Keywords: socio-economic analysis, commercial layer farming, profitability, R/C ratio, ROI

Ocean Governance in the BBNJ Era: Indonesia's Policies for the Conservation of Marine Biodiversity Beyond National Jurisdiction"

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Abstract

The BBNJ Agreement represents a significant advancement in ocean governance and is crucial for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ). However, creating MPAs in ABNJ presents several challenges, because there isn't a governing body for these areas. As an archipelagic state that has ratified the agreement, Indonesia has a responsibility to implement it. This article explores the Indonesian policies to govern BBNJ and examine the models for establishing MPAs in ABNJ, particularly near Indonesia's waters. The method of the research is juridical normative and use secondary and primary data. Based on the research, Indonesia has designed marine spatial planning to establish MPA in ABNJ. There are four models for implementing MPAs: first the RFMO-based model, second the Coral Triangle-based model, third the Ecological or Biologically Significant Marine Area-based model, and the BBNJ agreement-based model.

Keywords: Ocean governance, BBNJ, Conservation, Marine Protected Areas

Ab Initio Calculation Method Selection for Polyethylene

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Abstract

Computational chemistry is an important tool in supporting the theoretical understanding of molecular structure and properties. The selection of appropriate calculation methods and basis sets is a crucial element in obtaining accurate molecular simulation results through an ab initio approach based on quantum mechanics principles. This study aims to evaluate the influence of basis set variations on the simulation results of polyethylene tetramer molecules. The six basis sets used were 6-31G*, 6-31G**, 6-31++G**, 6-311+G*, 6-311++G** and cc-pVDZ. Modeling was performed in the gas phase using HyperChem software and included analysis of four main parameters: total energy, dipole moment, geometric parameters such as bond length and bond angle, infrared (IR) spectrum, and nuclear magnetic resonance (NMR) spectrum. Validation was performed by calculating the Predicted Residual of Sum Squares (PRESS) between theoretical and experimental data. The results of the study indicated that the 6-311++G** basis set was the most suitable (best) basis set to use based on the smallest total PRESS value obtained. The PRESS value for bond lengths was 0.0007861 and bond angles was 6.0471, the PRESS value for infrared spectra was 76110.2513, and the PRESS value for NMR spectra was 1.546474.

Keywords: Ab Initio, Polyethylene, IR spectrum, NMR spectrum, 6-311++G**

CFD Analysis of The Effect of Blade Number and PSA on Savonius Wind Turbines for Aerodynamic Performance Optimisation and Energu Sustainability Support

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Abstract

Electricity in Indonesia is supplied by coal through power plants by 50% and from renewable energy sources by no more than 14%. This is not in line with the goals of SDGs point 7, so there is a need to increase the transition to clean energy and renewable energy, one of which is by utilizing the potential of wind energy. The potential of wind energy in Indonesia to be converted into electrical energy is relatively large, namely 970 MW. In the process of converting kinetic energy from fluid to electrical energy, the main component that plays a role in it is the rotor of the wind turbine. Savonius is a type of rotor that is easy to apply, because it is simple and can operate at low wind speeds. This study was conducted on the variation of the rotation angle on the rotor Savonius multilevel with the number of Blades 2 and 3. Modeling was done in 3 dimensions using Ansys Student version software. The boundary condition used is steady state, with wind speed based on statistical data of Central Java location 4-6 m / s. The type of turbulence used in modeling is SST. The purpose of this study to obtain optimal design Savonius wind turbine, as a design consideration in the management of local scale wind energy. Based on the results obtained optimal design rotor savonius with 2-blade and PSA 30 which produces C_p of 0.32.

Keywords: CFD, renewable energy, savonius, SDGs, wind-energy

**SUSTAINABLE DIGITAL TRANSFORMATION
INTEGRATING LOCAL VALUES IN DOWNSTREAM DEVELOPMENT**

Fundamental Study of Potential Natural Resources for Economic Development and Empowerment of Pageraji Village

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Abstract

This research was conducted to determine the potential resources in Pageraji Village for development and how to manage them. Specifically, the first year of the research was aimed at exploring the potential of natural resources that in the future could be managed by the community to increase the potential for economic development and community empowerment in Pageraji Village. The results of the research, conducted through surveys and interviews with community leaders and village officials, indicated that Pageraji Village has natural resources that have the potential for development. The natural resources of Pageraji Village consist of water sources, fertile soil, diverse vegetation dominated by coconuts, wildlife dominated by chickens and goats, and the presence of falcons, which are included in the protected species of the Indonesian government. Based on an analysis of the informants' responses, it was concluded that Pageraji Village would thrive if infrastructure and facilities were expanded, along with community collaboration in maintaining and advancing the village, in line with government policies.

Keywords: natural resources, potential resources, economic development, community empowerment, government policies

Discretion Beyond Authority Unlawful Acts by The Government in Issuing Mining Permits

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Abstract

This study analyses the phenomenon of unlawful acts by the government (PMH) that occur through the abuse of discretion in the issuance of mining permits in Indonesia. Although discretion is a legitimate authority, practices in the field show that this authority is often abused beyond its limits (*ultra vires*), resulting in environmental damage, land overlap, and losses to the state and society. Using a normative juridical approach with analysis of laws, court decisions, and administrative law theory, this study identifies that forms of abuse of discretion include the issuance of permits in prohibited areas, without proper procedures, and based on motives of corruption. For these actions, the government has multiple layers of legal responsibility, including administrative (cancellation of permits), civil (compensation), and criminal (corruption charges for officials). This study concludes that strengthening the monitoring system, transparency, and public participation is crucial to prevent future PMH and improve mining governance.

Keywords: Discretion, Illegal Act of Government, Mining Governance

Strengthening Social Capital for Empowerment: A Model for Undocumented Indonesian Migrant Workers in Malaysia

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Abstract

Undocumented Indonesian Migrant Workers are a vulnerable group whose socioeconomic well-being is affected by unstable legal status, limited access to education and health services, and persistent social stigma. This study develops an empowerment model for PMI through strengthening social capital, recognizing that trust, cooperation, and institutional collaboration are vital resources for survival and productivity. Using a mixed-methods Research and Development design, data were collected from undocumented migrants in Sarawak and Kuala Lumpur through focus group discussions, in-depth interviews, participant observation, and surveys. Additional insights were gained from Indonesian Embassy officials, community educators, and local partners. The study findings reveal that undocumented migrants rely heavily on informal networks and learning centers to compensate for structural exclusion. High work permit fees, frequent extortion during police raids, and limited recognition of community schools exacerbate their vulnerability. However, networks of trust, community cooperation, and supportive diplomatic institutions provide opportunities for resilience. The proposed empowerment model integrates legal advocacy, institutional support, and skills development programs to strengthen migrants' social capital and improve their socioeconomic conditions. The primary recommendation is to empower undocumented workers by enhancing their social capital, which in turn improves their livelihoods and supports sustainable migration governance.

Keywords: Social capital; migrant workers; empowerment; undocumented, model

Supporting Characters in Seri Antologi Fabel Nusantara: How Animal Supporting Characters Contribute in Promoting Indonesian Values

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Abstract

This study investigates kinds of supporting characters in stories from *Seri Antologi Fabel Nusantara*. Using a qualitative descriptive method, the study analyzes stories through the lens of character and anthropomorphism theory. The findings show that there are three types of the supporting characters. Those supporting protagonist characters, supporting antagonist characters, and supporting informant characters. Supporting protagonist characters are figures who strengthen the main character's position, either by assisting directly or by highlighting the protagonist's qualities through their presence. While, supporting antagonist characters are those who assist or strengthen the antagonist's role. Then, supporting informant characters may not directly help or oppose the protagonist, but their voices, commentary, or actions give readers guidance or situate the story. Finally, the study concludes that supporting characters are essential to enrich stories, both structurally and thematically. The significance of this research lies in demonstrating how supporting characters, through anthropomorphic portrayal, enrich the structure of fables while simultaneously serving as cultural agents that convey Indonesian values.

Keywords: supporting characters, supporting protagonist characters, supporting antagonist characters, and supporting informant characters, Seri Antologi Fabel Nusantara

AI-Driven Management and its Psychological Impact: Petty Tyranny, Toxic Workplaces, and Emotional Exhaustion in e-Commerce Platforms

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Abstract

Artificial Intelligence-driven management (AI-Driven Management) is becoming an increasingly essential component in human resource management within the digital sector. While AI is employed to enhance efficiency and performance, its algorithmic application in employee monitoring can also intensify pressure and deteriorate workers' psychological well-being. This study aims to analyze the relationship between petty tyranny, toxic workplace, and emotional exhaustion among employees working on e-commerce platforms in Indonesia, using the Conservation of Resources (COR) Theory as the theoretical framework. Petty tyranny behaviors and toxic work environments are identified as key factors contributing to the depletion of psychological resources. These results highlight that digital work environments, characterized by performance pressure and algorithmic surveillance, can exacerbate employees' psychological distress. The study offers practical implications for digital companies and startups to design future policies that prioritize employee well-being.

Keywords: AI-Driven Management, e-Commerce, Toxic Workplaces.

**Structural Equation Modeling to Capture Digital Technology Needs in Construction
Project Time Control Through a Comparison of the Perceptions of Supervision
Consultants and Construction Management Consultants**

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Abstract

The execution of a construction project in a development must be well-organized and requires effective management processes, including efficient time management. Therefore, in controlling construction projects, tools and methods are needed that can support the success of time control in construction projects. This study specifically focuses on identifying the perceptions of construction management consultants and/or supervisory consultants regarding the use of digital technology in construction project time control. In addition, this study also identifies factors that influence the application of digital technology, including differences in perception between construction management consultants and supervisory consultants. Using a questionnaire as a data collection tool, this study involved 47 respondents from construction management consultants and 46 respondents from supervisory consultants. Questionnaire data analysis was performed using Smart-PLS and Microsoft Excel software. The results showed that 16 of the 21 indicators were valid and reliable in measuring exogenous and endogenous variables. The combination of all existing variables had an effect of 57.8% on the Urgency of Digital Technology Application in Construction Project Time Control. Path Coefficients analysis showed that the factors of Benefits, Barriers, and Understanding showed a positive relationship. However, the Experience factor showed a negative relationship with endogenous variables. Based on this study, it can be seen that there is no significant difference between the perceptions of construction management consultants and supervisory consultants regarding the application of digital technology as a tool for controlling construction project time. These results illustrate that supervisory consultants and construction management consultants share the same enthusiasm for utilizing digital technology in project control.

Keywords: construction management consultants, digital technology, structural equation modeling, supervisory consultants, time control instruments

Building SME Marketing Performance through Entrepreneurship Orientation, Product Innovation, and Social Media: The Role of Competitive Advantage as an Intervening Variable

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Abstract

This study investigates the role of entrepreneurial orientation, product innovation, and social media in enhancing the marketing performance of Small and Medium Enterprises (SMEs) in Central Java, with competitive advantage as an intervening variable. Using a purposive sampling method, data were collected from 110 SME owners and analyzed with Partial Least Square (PLS) and Sobel test to examine both direct and indirect effects. The results reveal that entrepreneurial orientation significantly influences marketing performance but does not affect competitive advantage. In contrast, product innovation and social media have significant effects on both competitive advantage and marketing performance. Furthermore, competitive advantage is found to mediate the relationship between product innovation and marketing performance, as well as between social media and marketing performance, but not between entrepreneurial orientation and marketing performance. These findings highlight the importance of innovation and social media utilization in building competitive advantage and improving SME marketing performance. Practical implications suggest that SMEs should prioritize product innovation and social media engagement, supported by government training and academic research expansion to sustain competitiveness in dynamic markets.

Keywords: Entrepreneurial Orientation, Product Innovation, Social Media, Competitive Advantage, Marketing Performance, SMEs, Central Java

Legal Reconstruction of Executive Power Relations to Redefine the Role of Deputy Regional Heads in Indonesia's Decentralized Government System

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Abstract

Indonesia's post-1999 decentralization reforms expanded regional autonomy, yet the relationship between regional heads and deputy regional heads remains legally ambiguous. The unclear division of authority has weakened the effectiveness of local governance, as deputies often serve symbolic rather than substantive roles. The absence of a clear legal framework has generated political frictions, particularly in budget management and administrative coordination. This research applies a legal method combining statute, conceptual, and comparative approaches, supported by in-depth interviews in four regencies. The findings show that Article 63 of Law No. 9/2015 fails to clarify the functional authority of deputy regional heads, resulting in overlapping roles and recurring conflicts. Empirical evidence indicates that tensions between regional heads and deputies are frequent but rarely institutionalized in official procedures or standard operating practices. To overcome these shortcomings, the study integrates New Institutionalism, Delegation Theory, and Good Governance Principles to propose a reconstructed institutional framework. It recommends revising the Local Government Law and issuing a Presidential Regulation on the division of executive tasks. Such reforms would strengthen accountability, transparency, and effectiveness in Indonesia's decentralized governance system, ensuring that deputy regional heads can contribute substantively to local administration.

Keywords: Decentralization, Executive Power Relations, Deputy Regional Head, Institutional Design, Local Governance Reform

Increasing Farmers' Adaptive Capacity to Face Climate Change through Strengthening Farmer Groups

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Abstract

Climate change is a natural phenomenon that negatively impacts the agricultural sector, including reduced harvests, decreased production quality, and even crop failures. Addressing these challenges requires increased adaptive capacity. Adaptive capacity can be built by strengthening farmer groups; however, these groups have not yet played their optimal role. To help enhance farmer groups, the first step is to reactivate their role. This method involves collaborating with the Banyumas Regional Pest and Disease Observation Laboratory on environmentally friendly pest control using biological control agents. Extension services are essential for enhancing farmers' knowledge and skills in managing the various pests that emerge due to climate change. Farmers' pest control practices have traditionally been carried out individually and often involve the use of chemicals, which can be expensive. Farmers' knowledge of environmentally friendly pest control is still limited. Therefore, it is necessary to increase awareness of environmentally friendly pest control methods through hands-on training and collaborative work within farmer groups. Farmer groups and their members conducted hands-on practice in creating pest control agents using inexpensive and readily available materials, making them easier for farmers to implement.

Keywords: Climate change, adaptive capacity, farmer groups, extension services

Analyzing the Impact of Corn Import Ban Policy on Production Cost Fluctuations and Feed Prices in the Indonesian Feedmill Industry

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Abstract

Indonesia's corn import restriction policy, aimed at achieving self-sufficiency and protecting domestic farmers, presents a significant challenge for the feedmill industry. This industry relies heavily on domestic corn as a primary raw material (40-55%), yet domestic production is constrained by seasonality and geographical disparities between production centers and feedmill clusters. This study aims to: 1) Calculate the price elasticity of finished feed to changes in domestic corn prices, and 2) Identify and analyze risk mitigation strategies employed by feedmill companies to cope with supply instability. This non-experimental research employs a quantitative and descriptive analysis of secondary data from government sources, the Indonesian Feedmill Association (GPMT), and industry players for the period of July 2024 to July 2025. The analysis reveals a highly inelastic relationship between corn and feed prices. A 22.9% increase in corn price (from IDR 4,688 to IDR 5,762/kg) resulted in an estimated feed production cost increase of 5.2-7.5%. The calculated price elasticity of feed to corn is approximately 0.23-0.33, indicating that a 1% increase in corn price leads to a 0.23-0.33% increase in feed price. Feedmills adopt multi-faceted strategies including strategic corn inventory management, formula flexibility, backward integration through farmer partnerships, and diversification of alternative raw materials. The import ban policy exacerbates cost volatility for downstream industries. While feedmills demonstrate adaptive resilience, a more stable and integrated policy framework is recommended to ensure the long-term sustainability of the animal protein supply chain.

Keywords: Import Policy, Price Elasticity, Supply Chain Risk, Poultry Feed, Indonesia

Differences in Morphometric Characteristics and their Correlations between Three Local Chicken Lines

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Abstract

Genetic diversity of local chickens plays a significant role in the sustainability and food security of livestock, providing genetic resources for the development of superior local chicken lines. The objective of this study was to identify quantitative phenotypic and genetic differences based on the morphometric characteristics of three local chicken lines (Kedu Merah, Kampung, and Sentul). The study was conducted experimentally with 120 36-week-old chickens, consisting of 40 each of Kedu Merah, Kampung, and Sentul. The morphometric characteristics measured were body weight, beak length, wattle length, breast width, breast circumference, wing length, femur length, tibia length, shank length, shank circumference, and 3rd toe length. Morphometric data were analyzed using ANOVA in SPSS v30 software. A Pearson correlation test was performed to see the relationship between parameters. The results showed more similarities in morphometric characteristics between Kedu merah chickens and Kampung chickens. In addition to body weight, similarities between Kedu merah chickens and Kampung chickens were also found in the characteristics of beak length, breast width, wing length, femur length, tibia length, shank length, and 3rd toe ($r = 0.416$) and femur length ($r = 0.463$). In addition, body weight also had a weak positive correlation ($0.20 \leq r < 0.399$) with breast width ($r = 0.374$), tibia length ($r = 0.333$), and shank length ($r = 0.322$). The correlation analysis in Kampung chickens showed a strong positive correlation ($r = 0.604$) between beak length and body weight. The breast width parameter had a moderate correlation coefficient value ($r = 0.339$) with body weight. The study concluded that Kedu merah chicken was a local strain that morphometrically had the greatest potential to be developed into a superior meat strain. Breast circumference and width can be predictors for weight gain in Kedu merah chickens. Beak length can be used as a predictor of weight gain in Kampung chickens, and breast width can be used as a predictor of weight gain in Sentul chickens.

Keywords: Kampung chicken, Kedu merah chicken, Sentul chicken, morphometrics, body weight

Kinetic Evaluation of Methylene Blue Adsorption on Ni-Alginate Beads

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Abstract

The study investigated the effectiveness of Ni-alginate beads as an eco-friendly adsorbent for removing methylene blue dye from aqueous solutions using a batch adsorption method. Ni-Alginate beads were characterized using FTIR and SEM instruments. The optimum adsorption conditions were found at contact time: 90 minutes and pH of methylene blue solution: 6. The adsorption yield of methylene blue on Ni-Alginate was found to be 90% under these conditions. The experimental results were evaluated by zero-order, pseudo-first-order, and pseudo-second-order kinetic models used to calculate the kinetic parameters and determine the ideal mechanism of the adsorption process. It was found that the pseudo-second-order model could be used to explain the experimental data. The adsorption process was indicated by a chemisorption mechanism. These results showed a strong interaction between the dye molecules and the Ni-alginate surface, confirming the material's potential for targeted dye removal. Therefore, Ni-alginate beads presented a promising solution for wastewater treatment applications, particularly in the removal of synthetic dyes from industrial effluents.

Keywords: adsorption, methylene blue, Ni-Alginate beads, FTIR-SEM, kinetic evaluation

Modified Alginate Beads with Nickel Cross-Linking to Reduce Methylene Blue Contamination

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Abstract

In this study, Ni-modified alginate beads (Ni-ABs) were prepared to enhance the adsorption capacity of the Ni-ABs for methylene blue. The adsorbent was characterized using FTIR and SEM instruments. The adsorption process of Ni-ABs for methylene blue were presented in a batch adsorption study. The adsorption conditions for Ni-ABs for methylene blue were optimized, including the pH of the methylene blue solution and contact time. The adsorption capacity of Ni-ABs for methylene blue reached 90% at pH 6 with a contact time of 90 minutes. The experimental results were evaluated by applying the Langmuir and Freundlich isotherm models. The adsorption behavior followed the Freundlich model, suggesting the presence of multilayer adsorption in the adsorption process. The process was controlled by a physical adsorption mechanism. Regeneration of Ni-ABs was successfully performed using 0.5 M HCl solution. The Ni-ABs exhibited good stability, with adsorption efficiencies ranging from 76–90% and desorption rates between 64–85% over five cycles. These results indicated that Ni-ABs were effective and reusable adsorbents for the selective removal of methylene blue from aqueous solutions.

Keywords: nickel modified sodium alginate beads, FTIR-SEM, adsorption, methylene blue, regeneration

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Conclusion: This study suggests that inadequate access to safe and sufficient drinking water in Kawunganten District may pose potential health risks.

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Accessibility of The Criminal Justice System for The Community in Pangandaran Regency in Fulfilling Access to Justice

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Abstract

Every citizen has the right to access justice as a manifestation of freedom and equality before the law. In the criminal justice system, accessibility is a fundamental principle linked to the protection of basic rights. Pangandaran Regency, although established as an autonomous region in 2012, still does not have key criminal justice institutions such as a prosecutor's office, court, and correctional facility. This situation creates barriers to justice for local communities. The purpose of this study is to examine the factors behind the absence of such institutions, assess the accessibility of justice in Pangandaran, and propose a model of access to justice suited to regional conditions. Using a socio-legal approach with qualitative methods, this research draws on primary and secondary data analyzed through content and comparative analysis. The findings reveal that juridical, philosophical, and sociological factors contribute to the absence of institutions, forcing legal processes to be redirected to Ciamis Regency. This increases costs, limits access, and disadvantages marginalized groups. As a result, disputes are often resolved non-litigiously, raising concerns about accountability. Strengthening access to justice requires strategies such as digitalization of legal services, the role of accredited legal aid, and stronger collaboration between legal institutions and communities.

Keywords: Access to Justice; Pangandaran; Accessibility; Criminal Justice System

Design of a Smart Automated Switching Multi-Channel, Multi-Configuration Resistivity Meter

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Abstract

The resistivity method in geophysics utilizes a resistivity meter to measure subsurface resistivity values through current injection and voltage measurement. Conventional data acquisition processes rely on manual electrode displacement, which is time-consuming and prone to operator errors. This research aims to design an Internet of Things (IoT)-based smart multichannel resistivity meter that can enhance data acquisition efficiency through automatic electrode switching systems for Schlumberger, Wenner, and Dipole-dipole configurations. The system designed in this work involves a current sensor based on a shunt resistor and a voltage sensor using voltage divider circuits. It is integrated with ESP32 and Arduino Uno microcontrollers to control 8 electrodes through relay switching. Data is automatically stored in cloud storage and can be controlled through a mobile application based on MIT App Inventor. Test results demonstrate that the system can operate with a voltage reading error of 3% and current error of 2%, voltage measure precision of 92% and current measure precision of 96%, with measurement ranges of 0-100V and 0-100mA. The system successfully performs automatic electrode switching according to the selected configuration and uploads real-time data to cloud storage. System power consumption is 4.23 watts with 8-electrode multi-channel capability. The research conclusion indicates that the smart multi-channel resistivity meter successfully improves geoelectric data acquisition efficiency with automatic switching features, cloud storage, and user-friendly mobile application control for three main resistivity survey configurations.

Keywords: Smart resistivity meter, IoT, electrode switching, cloud storage, geoelectric

Heterojunction Formation of BiVO₄/g-C₃N₄ Composite: Photocatalyst For Visible Light-Driven Degradation of Dye Waste

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Abstract

Dye waste, especially methylene blue, is a significant environmental problem and requires effective solutions for its degradation. This study aims to synthesize BiVO₄/g-C₃N₄ by examining the effect of g-C₃N₄ composite concentration on material characteristics and its photocatalytic activity for degrading methylene blue. BiVO₄ and g-C₃N₄ were synthesized separately using hydrothermal and thermal condensation methods, respectively. The composite was then prepared by a modified method involving ultrasonic stirring and calcination. The material was characterized using XRD, SEM, and UV-Vis DRS to analyze its crystal structure, morphology, and band gap energi. The results indicated that the BiVO₄/g-C₃N₄ composite has a heterojunction structure with a reduced band gap energy, ranging from 2.16 eV to 2.24 eV, which is lower than that of the pure BiVO₄ (2.28 eV) and g-C₃N₄ (2.52 eV) materials. The optimal mass ratio for methylene blue degradation was found to be 1:3 (BiVO₄ : g-C₃N₄), achieving a total degradation of 80.76%. The study concludes that the BiVO₄/g-C₃N₄ composite is an effective photocatalyst for degrading methylene blue under visible light irradiation.

Keywords: Photocatalyst, BiVO₄, g-C₃N₄, Methylene Blue, Degradation.

Fish Farmers' Awareness and Perspectives on Disease Control in Gourami (*Osphronemus gouramy*) Aquaculture: A Mixed-Methods Study in Banjarnegara Regency, Central Java

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Abstract

Since 2017, disease outbreaks have significantly reduced the productivity of gourami (*Osphronemus gouramy*) aquaculture in Indonesia, including in Banjarnegara Regency, where production declined from 7,326 tons in 2019 to just 3,128 tons in 2023. This study aimed to assess fish farmers' awareness and perspectives on disease control in gourami cultivation within the region. A total of 46 fish farmers from ten districts were selected, and a mixed-method approach combining surveys and focus group discussions was employed. Nearly all respondents (93.5%) reported experiencing disease outbreaks, with external lesions (76.1%) and sudden mortality (54.3%) as the most frequently observed symptoms. Farmers noted that outbreaks predominantly occurred during the seasonal transition from the wet to the dry season and perceived that disease emergence was influenced not only by pathogenic infections but also by deteriorating water quality and fluctuating water temperatures. Disease control strategies were prioritized using the Analytic Hierarchy Process (AHP), which identified water quality improvement as the top priority (weight: 0.306), followed by broodstock genetic improvement, application of vaccines, drugs, or herbal treatments, biosecurity measures, farmer education, and feed quality management. These findings underscore the need for a holistic approach that integrates both preventive and curative measures, emphasizing environmental management as a foundation for sustainable gourami aquaculture.

Keywords: Fish farmer, fish disease, disease control, Banjarnegara

Molecular Identification of Bacterial Isolates from Diseased Tilapia (*Oreochromis niloticus*) Cultured in Banjarnegara Regency Using 16S rDNA Gene Sequencing

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Abstract

Tilapia (*Oreochromis niloticus*), one of the primary freshwater aquaculture commodities in Indonesia, frequently faces production challenges due to pathogenic bacterial infections. This study aimed to identify bacterial isolates from diseased tilapia cultured in Banjarnegara Regency using 16S rDNA gene sequencing. Fish exhibiting clinical signs of bacterial infection—such as fin erosion, scale loss, cloudy eyes, and greenish spleen—were collected from two districts: Banjarnegara and Purwanegara. Bacteria were isolated from liver and kidney tissues and confirmed as pathogenic based on reinfection assay results. Genomic DNA was extracted from the isolates, amplified via PCR targeting the 16S rDNA gene, and sequenced for identification using BLAST and phylogenetic analysis. Two pathogenic isolates from Banjarnegara showed high sequence similarity to *Aeromonas* sp. (99.87%) and *Enterobacter* sp. (99.41%). From Purwanegara, three isolates were identified as *Citrobacter freundii* (99.35%), *Acinetobacter* sp. (99.60%), and *Escherichia coli* (99.57%). These findings indicate the presence of multi-pathogenic bacterial infections in cultured tilapia, underscoring the need for improved diagnostic and management strategies in aquaculture health systems.

Keywords: tilapia, pathogenic bacteria, 16S rDNA gene, Banjarnegara Regency, molecular identification

Therapeutic Potential of *Artocarpus altilis* Leaf Extract in Modulating Insulin, DPP-4, GLP-1, IL-1 β , and CRP in Obesity: An Experimental Study in Rats

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Abstract

Background: Obesity is a pathological condition characterized by excessive fat accumulation, which significantly increases the risk of developing metabolic disorders like insulin resistance and chronic inflammation. **Aim:** This study aimed to investigate the effects of *A. altilis* leaf extract on insulin, DPP4, GLP-1, IL-1 β , and CRP levels in obese rats. **Methods:** We employed a quasi-experimental design using 25 male Sprague Dawley rats, all induced with obesity via a high-fat diet for 10-12 weeks. The rats were divided into five groups: a negative control (NC), a positive control treated with metformin (PC), and three groups treated with *A. altilis* extract at doses of 200 mg/kg (EA1), 300 mg/kg (EA2), and 400 mg/kg (EA3). Biomarker levels were measured using the ELISA method. Statistical analysis included a one-way ANOVA and Tukey HSD post hoc test, with significance set at $p < 0.05$. **Results:** The ANOVA test showed significant differences among groups for all biomarkers ($p < 0.001$). The extract had a dose-dependent effect, progressively increasing insulin and GLP-1 levels while reducing DPP4, IL-1 β , and CRP levels. The highest dose (EA3) produced effects on insulin, GLP-1, and CRP that were comparable to metformin. Notably, the EA3 group demonstrated a stronger DPP4-inhibitory effect than metformin. The anti-inflammatory effect on IL-1 β and CRP was most pronounced at the highest dose, suggesting a therapeutic threshold. **Conclusion:** *A. altilis* extract effectively modulates key biomarkers of obesity and metabolic dysfunction, with the highest dose showing efficacy comparable to or exceeding the standard drug, metformin. These findings position *A. altilis* extract as a promising natural therapeutic agent for managing obesity-related metabolic complications.

Keywords: Obesity, *Artocarpus altilis*, Insulin, DPP4, GLP-1, IL-1 β , CRP

Clusterisation of Electricity Power Supply in Central Java by Productivity Using Fuzzy and Crisp Mean-based Clustering

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Abstract

PT PLN Indonesia Power UBP Semarang is a business unit of PT PLN Indonesia Power that operates several electricity power supplies in Central Java Province. The amount of electricity produced is measured daily, but the power supplies' overall productivity is not adequately measured. This research investigates the productivity using two mean-based clustering methods, k-means clustering and fuzzy c-means clustering. There are 11 power supplies measured, whose productivity indicators are net and gross of electricity produced, the number of days in which electricity is generated, and the ratio of net to gross. The clustering process is started by data pre-processing, including data imputation and dimension reduction. The cleaned data are first clustered by k-means clustering, and the result is used for implementing more targeted fuzzy c-means clustering. The result shows that there are three clusters of electricity power supplies with the following categories: highly efficient, moderately efficient, and not efficient. This categorisation can be used for more targeted policy implementation such that electricity is effectively utilised for people's prosperity, including industry downstreaming.

Keywords: PT PLN Indonesia Power, mean-based clustering, electricity power supply, productivity

Toward Youth-Driven Sustainable Digital Futures: Embeddedness of Local Wisdom in Rural Transformation

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Abstract

Studies on rural digital transformation rarely highlight the relationship between youth, local wisdom, and the vision for a sustainable future community. This study examines how cultural values and the role of youth can be embedded in rural digitalization. This research was conducted in Karangtengah Village, Cilacap Regency using qualitative methods and Manuel Castells' theory of modernization, which emphasizes modernization as a transformation towards an information technology-based network society. Karangtengah Village is an agricultural village that produces rice and sticky rice, with a spirit of cooperation that supports food security, MSMEs, and local culture. This study found that rural digital transformation can be synergized with local wisdom and youth as catalysts. Local values, youth, and digitalization are strengths offered as a new conceptual framework in village development. These three elements have the potential to produce what is known as digital cultural preservation, digital entrepreneurship, cultural resilience, and digital participation and governance. This study concludes that to carry out digital transformation, there needs to be a shift in focus from mere digital inclusion to youth-driven digital sustainability integrated with local wisdom.

Keywords: digital sustainability, local wisdom, modernization theory, rural digital transformation, youth agency

Design and Performance of a Coagulation–Flocculation Wastewater Treatment System for Electroplating Effluent

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Abstract

The electroplating industry produces wastewater that is high in harmful heavy metals, making effective treatment crucial for protecting both ecosystems and public health. This study aimed to design a wastewater treatment system utilizing the coagulation-flocculation method specifically for electroplating effluent. After identifying the core problem and developing a process scheme, pilot-scale trials were conducted to validate the findings. The key performance indicators included total dissolved solids (TDS), turbidity, zinc (Zn) concentration, and pH levels. The results demonstrated significant improvements: TDS levels decreased from 4030 ppm to 1650 ppm, turbidity dropped from 178.1 NTU to 8.5 NTU, and Zn concentration reduced from 9.8 ppm to 0.3 ppm. All indicators complied with water quality standards (pH 6-9, TDS <2000 ppm, turbidity 6-25 NTU, and Zn <5 ppm), confirming that coagulation-flocculation is a highly effective approach for removing heavy metal pollutants from electroplating wastewater.

Keywords: Electroplating, coagulation–flocculation, wastewater, zinc removal

Public Use for Private Interest: The Paradigm Shift on Land Acquisition for National Strategic Projects in Indonesia

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Abstract

Despite their fundamental aim to accelerate national development, Indonesia's National Strategic Projects (NSPs) have nonetheless presented a complex landscape characterized by inherent conflicts and persistent challenges, particularly concerning land acquisition processes. The enactment of the Job Creation Law became a catalyst for the statutorization of NSPs through the amendment of several laws, one of which is Law Number 2 of 2012 on Land Acquisition for Public Use. This research therefore aims to analyze how NPSs regulation affects the regulatory paradigm on land acquisition post-Job Creation Law. This research is normative in nature and employs statutory and conceptual approaches. Major findings reveal a significant paradigm shift where the broad definition and urgent implementation mandates of NSPs often facilitate accelerated land acquisition processes, potentially marginalizing community rights in favor of private investment and infrastructure development. This shift has profound implications, including an increased susceptibility to expropriation claims, diminished public participation, and a re-prioritization of economic growth over social equity in land-related disputes. The research concludes that while NSPs are crucial for national development, their current framework warrants re-evaluation to ensure genuine public interest remains paramount, mitigating the risk of disproportionate private benefit at the expense of communal welfare and legal certainty.

Keywords: Land Acquisition, Public Use, Private Interest, National Strategic Projects

Stakeholder Synergy in the Management of Banteran Tourism Village, Sumbang Subdistrict

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Abstract

This study examines the dynamics of village-based tourism management through a case study of Embung Tanggul Asih Swargaloka in Banteran Village, Banyumas. Although the initiative was designed to improve community welfare, in practice it encounters challenges related to sustainability and inclusivity in management. The purpose of this research is to evaluate the contribution of stakeholder collaboration in the management of Banteran tourism reservoir. This research employs a descriptive qualitative approach aimed at exploring in depth the perceptions, experiences, and forms of collaboration among stakeholders in tourism management. The study was conducted at Embung Tanggul Asih Swargaloka, located in Banteran Village, Sumbang Sub-district, Banyumas Regency. Data were collected through observation and in-depth interviews. Data analysis followed Miles and Huberman's (2014) interactive model, consisting of data reduction, data display, and conclusion drawing. The findings reveal that the failure of Banteran Reservoir to function effectively as a tourist village is not merely caused by the decline in visitor numbers or physical damage to facilities, but more fundamentally by communication gaps among stakeholders, the limited participation of local residents, and the absence of effective collaborative governance synergy. Therefore, the study suggests that synergy among stakeholders needs to be strengthened through the establishment of clear cooperation agreements that define the division of roles, authority, and benefits.

Keywords: Stakeholder Empowerment, Community Empowerment, Tourist Village, Stakeholder Synergy

Tsunami Evacuation Route Optimization in Pangandaran: A Dijkstra's Algorithm Approach to Disaster Mitigation

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Abstract

The southern coastal region of West Java, particularly Pangandaran, is highly vulnerable to tsunami hazards induced by potential megathrust earthquakes. As part of disaster mitigation, the government has established evacuation route maps around the Pangandaran coastal area. Nevertheless, these designated routes are not necessarily optimal, as they do not adequately account for the shortest distance, the fastest travel time, and overall safety considerations. To address this gap, the present study focuses on modeling optimal tsunami evacuation routes for the Pangandaran coastal region under a potential future megathrust earthquake scenario. In our models, the starting point was located at the eastern and western area of Pangandaran Beach, and the endpoint is selected at the TES (Temporary Evacuation Site) Building located at the coordinates Latitude $7^{\circ}41'30.37''$ and Longitude $108^{\circ}39'13.85''$. Based on Dijkstra's algorithm, the total tsunami evacuation distance from the eastern area of Pangandaran beach to TES is 1.093 km, with a travel time of 26.23 minutes. Meanwhile, the total evacuation distance from the western area of Pangandaran beach to TES is 0.533 km, with a travel time of 12.79 minutes. These findings highlight the importance of evacuation route optimization in enhancing community preparedness and provide valuable insights for policymakers to improve disaster risk reduction strategies in tsunami-prone coastal areas.

Keywords: Dijkstra's algorithm, disaster mitigation, tsunami, Pangandaran

The Education Models of Public Policy and Legal Education to Foster Competence for the Young Generation: Empirical Evidence from Indonesia

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Abstract

Fostering young generation engagement in public policy and legal processes as a democratic imperative is the core element to provide their existence with competency, capabilities, experiences, and recognition of the special issues in the community. Still, their comprehension and participation are low, revealing a significant gap between recognition and engagement. Next, through a mixed-methods approach and the data collected by a survey, the research findings indicate that although 96.3% of youth are aware of policy participation, only 43.7% comprehend how policies are made. In addition, only 19.2% have ever directly participated. This gap stresses a structural glitch in education, access, and participatory platforms. Moreover, despite being in formal educational settings, the youth generation demonstrates lower policy comprehension than the general population, indicating a systemic pedagogical failure. On the other hand, the study proposes an amalgamated model to harmonize legal and public policy education, proactive competencies, and real-conditions participatory platforms. In addition, the implications for educational systems are that they must move beyond abstract instruction to offer experiential, contextual, and community-based learning to cultivate informed and empowered young leaders. Lastly, the study contributes new insights by reframing young generation education as a whole ecosystem, to reform aligned with democratic values and practical engagement.

Keywords: Young Generation, Public Policy, Legal Education, Leadership, Public Participation

Glycemic Index, Glycemic Load, and Satiety Level of Jack Bean Sprout Milk with Stevia and Palm Sugar Sweeteners

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Abstract

Individuals with diabetes mellitus (DM) must regulate their blood glucose levels, which can be achieved by consuming foods with a low glycemic index (GI) and glycemic load (GL). Jack beans may exhibit a low GI due to their elevated fiber content. Jack bean sprouts, lemongrass, and ginger are potentially suitable for making plant-based milk as an antidiabetic food alternative. This beverage uses palm sugar and stevia as sweeteners. This study was to analyze the differences in GI, GL, and Satiety Level (SL) values between jack bean sprout milk with palm sugar (milk-A) and with stevia (milk-S). The GI was assessed by collecting blood samples from 10 subjects through the finger-prick capillary blood sampling method, utilizing an EasyTouch glucometer, while the SL measurement used the Visual Analogue Scale. Data normality was tested using Saphiro Wilk, followed by a paired t-test. The GI values of milk-A and milk-S were 53.05 ± 46.47 and 38.21 ± 32.20 , respectively. The GL values of milk-A and milk-S were 15.91 ± 13.94 and 11.46 ± 9.67 , respectively. The Satiety Level (SL) values of milk-A and milk-S were 105.24 ± 62.93 and 170.16 ± 91.40 , respectively. The GI and GL values for both milk-S and milk-A are categorized as low, whereas the SL values are categorized as high.

Keywords: Jack bean, plant-based milk, glycemic index, glycemic load, satiety level

Effect of Intensive and Semi Intensive Management System on the Incidence of Coccidiosis in Ongole Crossbred Cattle

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Abstract

Coccidiosis in Ongole Crossbred Cattle (PO) is a detrimental disease for livestock and farmers as it can reduce livestock productivity. This study aims to determine the prevalence of coccidiosis and the influence of intensive and semi-intensive systems on coccidiosis in Ongole Crossbred Cattle. The research method employed was a survey or questionnaire distributed to farmers, using a non-invasive sampling technique. A total of 166 faecal samples from PO cattle were collected from 36 farmers. The study was conducted in two different locations: Sumbang District, Banyumas Regency (intensive system) and Banyuputih District, Situbondo Regency (semi-intensive system). The analysis included descriptive analysis, Chi-Square tests, and Odds Ratio. Coccidiosis prevalence data were obtained through faecal examination using the flotation method. The results showed that the prevalence of coccidiosis in PO cattle raised under an intensive system was 37.14%, while under a semi-intensive system, it was 6.25%. The level of coccidiosis infection in Banyuputih District was categorized as low, whereas in Sumbang District, there were 2 samples categorized as moderate and 24 samples as mild. Statistical analysis indicated a significant influence of the intensive and semi-intensive rearing systems on the incidence of coccidiosis in PO cattle ($P < 0.05$), with $\chi^2 = 22.882$ and an Odds Ratio (OR) of 8.86. This means that PO cattle raised intensively in Sumbang District are 8 times more at risk of contracting coccidiosis compared to those raised semi-intensively in Banyuputih District. The results indicate that the prevalence of coccidiosis is higher in cattle raised under an intensive system compared to a semi-intensive system. This study recommends that farmers improve sanitation management and biosecurity measures in intensive rearing systems to reduce the risk of coccidiosis.

Keywords: coccidiosis, management system, Ongole Crossbred cattle, prevalence

Indonesian Ministry of Health's Regulatory Sandbox Policy on Digital Health Innovation

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Abstract

The collaborative approach to regulatory development is known as the Regulatory Sandbox, which is an approach to regulatory development that encourages rules that are more adaptive to digital innovation. The Regulatory Sandbox is designed to test digital innovation products or business models in a limited environment (sandbox) under direct government supervision. However, since the implementation of the regulatory sandbox for digital health innovation in 2023 until now, no specific regulations have been formed for digital health innovation. The purpose of this study is to inventory the legal basis for digital health innovation in health legislation and analyze its synchronization. This study uses a normative juridical method with legal inventory and legal synchronization specifications. The results of this study indicate that the Minister of Health Decree Number HK.01.07/MENKES/1280/2023 concerning the Development of a Digital Health Innovation Ecosystem through Regulatory Sandbox is not synchronized with Government Regulation No. 28 of 2024 concerning the Implementation Regulations of Law No. 17 of 2023 on Health, so it is necessary to immediately draft a regulation in the form of a Minister of Health Regulation governing the regulatory sandbox for digital health innovation with a new term, namely health technology innovation.

Keywords: Digital Health Innovation, Policy, Indonesian Ministry of Health, Regulatory Sandbox, Synchronization

Examining The Effect of Price Volatility and Foreign Currency Exchange on Trading Liquidity: Cross-Country Analysis Using Panel ARDL Approach

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Abstract

This study aims to examine the effect of stock price volatility on trading liquidity by involving the domestic currency exchange rate against the United States dollar (USD). The observation period was conducted from January 2014 to March 2025 with weekly data frequency. The markets selected as research subjects came from three countries: Indonesia, Turkey, and Saudi Arabia. The data collected consisted of individual stock prices in these three capital markets, which have large capitalization and high liquidity. Other data included trading volume and the domestic exchange rate of the three countries against the USD, namely IDR, TRY, and SAR. The technique used to analyze the association between these variables was the ARDL Panel approach. The analysis results indicate that stock liquidity is negatively affected by price volatility during the same period and positively affected by the exchange rate during the same period. In addition, the interaction variable of volatility and exchange rate shows a positive sign on stock liquidity. Based on these results, investors should choose stocks with low volatility and seek momentum when the domestic currency weakens so that their shares can be easily and quickly transacted.

Keywords: Exchange Rate, Panel ARDL, Price Volatility, Trading Liquidity

The Role of Digital Supply Chain Agility in Enhancing MSME Performance in The Digital Era

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Abstract

The urgency of this study arises from inefficiencies in MSME supply chain systems and the research gap indicated by inconsistent findings regarding the impact of digital adoption on organizational performance. Moreover, only a limited number of studies have examined the relationship between digital adoption and supply chain agility, particularly within the MSME context. The purpose of this research is to identify the causes of supply chain inefficiencies, clarify inconsistencies in prior findings, and investigate the relationship between digital adoption and organizational performance by introducing digital supply chain agility as a mediating variable. Specifically, the objectives are: (a) to analyze inefficiencies in MSME supply chains, (b) to develop and validate the construct of digital supply chain agility, (c) to examine its mediating role between digital adoption and organizational performance, and (d) to assess the moderating effects of digital literacy and digital infrastructure. This study employs a survey method targeting MSME entrepreneurs in Banyumas who have adopted digital technologies. Data are collected through questionnaires, focus group discussions, and in-depth interviews. Structural Equation Modeling (SEM) is used as the analytical tool. The findings are expected to provide theoretical contributions and practical implications for strengthening MSME performance in the digital era.

Keywords: Digital Supply Chain Agility; Efficiency; Performance; MSMEs; Digital Era

Implementation of Arabica Coffee Roasting Technology to Build Economic Independence in Sridadi Village, Sirampog Distric

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Abstract

Sridadi Village, located in Sirampog District, Brebes Regency, is classified as one of the underdeveloped villages in the region. Nevertheless, the village has substantial potential in coffee cultivation, with community-owned plantations covering about 118.47 hectares. To harness this opportunity, the Sirampog Estate Coffee Group was established with a focus on coffee processing. Despite its progressive vision, the group still faces significant challenges, particularly the lack of facilities and production equipment for producing value-added coffee products. To address these challenges, the Village Empowerment Team (PDB) from Universitas Peradaban and Universitas Jenderal Soedirman, with funding support from the Directorate of Research and Community Service (DPPM) in its second year (2025), carried out a series of community service programs. These activities included training, workshops, and the provision of appropriate technology. As part of the intervention, a roasting machine with a capacity of 5 kg per batch was donated, which increased production capacity by at least fivefold. In addition, a continuous grinding machine with a capacity of 50 kg per batch was provided, resulting in a tenfold production increase. These initiatives highlight the effectiveness of targeted technological support in enhancing rural economic potential through coffee-based enterprises.

Keywords: Economic Independence, Coffee, Coffee Machine, Arabica Coffee, Roasted Bean

Human Resource Dynamics and Profitability in Village Owned Enterprises: An Empirical Study from Indonesia

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Abstract

Village Owned Enterprises (BUMDes) play a strategic role in reinforcing rural economic structures and leveraging local resources to improve community welfare and generate village revenue. However, their development is often constrained by inadequate professional management and risks spanning from inception to operational activities. This study investigates the impact of leadership style on employee motivation and performance in BUMDes located in Banyumas, Central Java, while also assessing the mediating role of motivation and analyzing financial performance through profitability ratios. Using a descriptive quantitative design with a saturated sampling method, data were analyzed through Structural Equation Modeling (SEM) with AMOS 22. The results indicate that leadership style exerts a significant positive influence on both motivation and performance, with motivation also positively affecting performance. Moreover, motivation mediates the relationship between leadership style and performance. Financial analysis further reveals that Banyumas BUMDes achieves a favorable and sustainable level of profitability.

Keywords: Village Owned Enterprises (BUMDes); Leadership Style; Employee Motivation; Organizational Performance; Financial Performance;

Corporate Governance, Socially Oriented Investments, and Firm Value: Evidence from Forestry Sustainability Practices in Central Java

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Abstract

This study investigates the linkage between corporate governance mechanisms, socially oriented investments, corporate reputation, and firm value in the context of forestry-based enterprises in Central Java, Indonesia. Data were collected through purposive sampling of households in Sunyalangu Village using structured questionnaires, and analyzed with structural equation modeling (SEM). The results indicate that board role intensity and ownership concentration strengthen the effectiveness of socially oriented investments, while managerial ownership negatively affects firm value. In turn, socially oriented investments enhance both corporate reputation and firm value, mediating the relationship between governance mechanisms and firm performance. These findings support the instrumental stakeholder theory and good management theory, underscoring the critical role of governance quality and social commitment in sustainable value creation. The study contributes by integrating governance structures with community-based sustainability practices in an emerging market, providing insights for policymakers and practitioners to reinforce governance frameworks and corporate responsibility strategies.

Keywords: Corporate Governance; Socially Oriented Investments; Firm Value; Corporate Reputation; Sustainability; Forestry Enterprises; Emerging Markets

Financial Reporting as a Social Contract: A Phenomenological Study of Local Government Apparatus in Purbalingga Regency, Indonesia

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Abstract

This study explores the lived experience of local government official in Purbalingga Regency, Indonesia, in constructing, validating, and interpreting financial reports. Employing a phenomenological approach, data were collected from 27 officials across different Organizational Units (OPDs) through in-depth interviews. Colaizzi's seven-step analysis was applied to reveal the essential meanings based their experiences. Findings indicate five thematic essences: (1) financial reports are perceived as a social contract and source of public legitimacy; (2) accounting knowledge is understood as an existential foundation for professional identity; (3) internal auditors are regarded as moral guardians of governance; (4) staff competence is seen as an adaptive foundation for facing regulatory and technological complexities; and (5) internal control systems are conceptualized as the infrastructure of trust. The study enriches Agency Theory by reframing financial reporting not only as a tool for extends the Resource-Based View (RBV) by positioning human resource competence, internal auditors, and control systems as strategic assets for public accountability. Practical implications highlight the urgency of continuous capacity building, integration of technology, and repositioning internal auditors as a strategic partners in governance.

Keywords: Keywords: phenomenology, public sector auditing, financial reporting quality, internal auditors, internal control, Indonesia.

PeerHealth: A Digital Health Screening and Education Tool for Islamic Boarding School Students

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Abstract

Health promotion and disease prevention among Islamic boarding school students (santri) are often constrained by limited access to structured health services. This study developed a digital health screening application for students at Pondok Pesantren An Najah. The development process consisted of four stages: (1) situational analysis of students' health, (2) training and technical assistance for pesantren health cadres, (3) digital application development, and (4) user tutorials. The resulting application is open access and freely available at <https://peerhealth.id/>. Key features include: (a) self-screening, either individually by students or collectively by school administrators during mass screening activities, (b) a health education menu that allows students and administrators to contribute educational content, and (c) individual health screening records. In addition, the application generates comprehensive health reports that can guide evidence-based decision-making for pesantren health policies. This innovation demonstrates the potential of digital health tools to strengthen preventive health strategies, empower local health cadres, and promote sustainable health management in Islamic boarding school settings.

Keywords: digital health, health screening, pesantren, sustainable health

Mapping Complex Situations in Agribusiness Cooperatives Using Systems Thinking

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Abstract

Relentless efforts to enhance the performance of the Cooperative have been made by multiple stakeholders in Indonesia. Recognizing the complexity of the problem faced by the Cooperative, systems thinking could be applied to answer the challenges effectively. This paper implements Soft System Methodology combined with Critical System Heuristics to reach out to multiple perspectives, which include the tea farmer and the tea picker's views on how the system should be improved. A set of qualitative engagements—including interviews and participatory focus group discussions—has been conducted among Cooperative members and administrators of Paninggaran Berdikari Makmur Cooperative in Pekalongan, Central Java, Indonesia. These methods combine successfully in structuring the problem that is produced by embracing the less powerful stakeholders' opinions, the tea farmers and the tea pickers. Therefore, the result could have been used by stakeholders to create more effective and efficient interventions.

Keywords: Systems Thinking, Soft System Methodology, Critical System Heuristics, Agribusiness Cooperative

A Socio-Technical Framework for Evaluating Public Employee Performance in Digital Government Environments

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Abstract

This study analyzes the influence of Digital Competence and Digital Communication Empathy on Employee Performance in the public sector, as well as the moderating role of Organizational Support in these relationships. The research was conducted at the Ministry of Religious Affairs in Brebes Regency, Indonesia, and involved 120 Civil Servants. Structural Equation Modeling (PLS-SEM) was used to test the hypotheses. The results show that Digital Competence and Digital Communication Empathy have a significant and positive influence on employee performance. Organizational Support further optimizes the influence of Digital Communication Empathy on performance, although it is not significant in the relationship with Digital Competence. The study underscores the importance of technological mastery, communication skills, and strong organizational support in delivering more effective, responsive, and human-centric public services in the era of digital transformation. It is crucial to regularly conduct training and workshops to enhance civil servants' digital competencies, provide appropriate technology and applications, maximize the use of digital communication channels, implement cybersecurity measures to safeguard data integrity, and employ technology-assisted performance reports to identify issues and areas for improvement.

Keywords: Digital Competence, Digital Communication Empathy, Organizational Support, Performance.

Local or imported coffee? A Study of Consumer Preferences in Coffee Shops and Restaurants

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Abstract

End-user or consumer-based strategies and policies are necessary to assist the strengthening of Indonesia's local food system. Nonetheless, understanding consumer attitudes and preferences about diverse local food products remains little investigated. Few studies have examined the rise in coffee shops selling local coffee as one of their main offerings in comparison to processed goods made with imported coffee. This study aims to 1) identify the characteristics of consumers who buy coffee from imported coffee shop chains and local coffee shops, and 2) assess the preferences of these consumers through conjoint analysis. The ultimate goal is to effectively and precisely communicate policies to support Indonesian cuisine by comprehending customer attitudes and preferences. This study employs conjoint analysis to identify the attributes and types of coffee favored by consumers in two categories of coffee shops. The primary tier comprises local coffee shop chains utilizing domestic coffee, including Fore, Tuku Kopi, and Kopi Kenangan, while the secondary tier consists of foreign coffee shop chains employing imported coffee, such as Starbucks, Dunkin', and Houston. The total number of responses was 200 from each stratum, resulting in an aggregate of 400 from two rapidly expanding coffee shop cities: Purwokerto, a medium-sized city, and Yogyakarta, a large city. The research findings indicated that the attributes deemed significant by both consumer groups were price, taste, and aroma. The price level for local coffee was comparatively lower. In contrast, consumers of international café chains favored a light, acidic flavor profile accompanied by a robust aroma. Local coffee shop patrons exhibited a preference for a balanced flavor profile and moderate aroma.

Keywords: attribute, arabica, conjoint, attitude, robusta

Broiler Feed Market Share Enhancement Strategy Based on Farmers' Needs Analysis Through Market Survey in The Jabodetabek Region

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Abstract

This research aims to formulate a market share enhancement strategy for PT New Hope Indonesia (NHI) based on farmer needs analysis and to measure the effectiveness of its implementation on sales turnover. Conducted in the competitive Jabodetabek region, this non-experimental study utilized an Importance-Performance Analysis (IPA) survey of 68 NHI customers. The IPA results identified key attributes in the high-priority quadrant: 1) Competitive Price, 2) Availability and Ease of Distribution, 3) After-Sales Service, and 4) Varied Feed Types. These findings directly informed the company's new strategic policies focused on pricing adjustments, logistics optimization, and service intensification. The strategy's impact was measured by comparing the average monthly sales turnover of 3,170 tons in 2024 (pre-implementation) with the turnover in the third quarter of 2025 (post-implementation). The results showed a remarkable increase to 4,393 tons (June), 5,867 tons (July), and 5,586 tons (August), with a Q3-2025 average of 5,282 tons. A one-way ANOVA test confirmed that the increase in total sales turnover was statistically significant ($p\text{-value} < 0.05$), leading to the rejection of the null hypothesis. This study concludes that a customer-centric strategy, rigorously derived from IPA and precisely targeting performance gaps, is highly effective in significantly boosting market share and sales performance in a competitive market.

Keywords: Market Share, Sales Turnover, Importance-Performance Analysis, Strategy Formulation, ANOVA, Broiler Feed

The Effect of Vitamin E Supplementation on Blood Cholesterol and Triglyceride Levels of Laying Ducks Under Village Farming

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Abstract

An on-farm research has been done to study the effect of vitamin E supplementation on blood cholesterol and triglyceride levels of laying ducks under village farming. The research method used was an experiment with a completely randomized design. The treatment was the control group (E0), and the levels of vitamin E administration consisted of E1 = 400 IU, E2 = 500 IU, and E3 = 600 IU. Thus, there were 4 treatment units, which were replicated 5 times; therefore there were 20 cages containing 20 ducks each. In total, four hundred laying ducks at 12±0.4 months old were used. The treatment was administered for 3 months. The data collected were total cholesterol and blood triglyceride levels. Blood samples for hematological observations were taken at the end of the study. Four ducks were taken from each experimental unit for blood sampling. The data obtained were analyzed using analysis of variance. The results showed that the average cholesterol content at E0, E1, E2, and E3 were 200.10, 201.85, 196.30, and 183.33 mg/dl, respectively; whereas the triglycerides were 235.72, 214.29, 178.57, and 161.91 mg/dl, respectively. Statistical analyses indicated that the cholesterol level between E0 and E1 was not significantly different ($P>0.05$), but significantly different from E2 and E3 ($P<0.05$). In terms of triglyceride level, the control group was significantly different ($P<0.05$) from the supplementation. Among the supplementation treatments, E2 was significantly different ($P<0.05$) from E2 and E3. It was concluded that vitamin E supplementation decreased the blood cholesterol and triglyceride levels of laying ducks.

Keywords: laying ducks, cholesterol, triglyceride, rural farming.

Microplastic Pollution In Kranji River and Its Public Health Potential Risks

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Abstract

The presence of microplastics in various water bodies, including rivers and oceans, has been a subject of considerable concern. The potential health implications of microplastics are a subject of ongoing research. While there is currently a paucity of data, research to date suggests the possibility of health problems such as oxidative stress, immune responses and other metabolic disorders (Bhuyan, 2022; Li *et al.*, 2023). Samples were collected from both upstream and downstream areas of the Kranji River, with the objective of monitoring microplastic pollution levels in both densely populated and sparsely populated regions. The samples utilised in this study were surface water from the Kranji River. The samples were analysed to determine the abundance, size, and shape of microplastics using a stereo microscope, and the microplastic polymers contained in the samples were identified using FTIR/ μ -FTIR spectroscopy. Subsequently, the results were interpreted in conjunction with the findings of a literature review on potential health risks to the community. The presence of microplastics has been detected in river waters in Indonesia including in Central Java (Utami *et al.*, 2021). The present study is still in progress, and involves the testing of water samples in order to determine the abundance, shape, and size of microplastics, as well as their polymer types. The utilisation of surface water for domestic purposes has the potential to be the most significant route of exposure, thereby increasing the likelihood of human exposure to microplastics. The potential for microplastics to increase the risk of developing dementia in humans has been demonstrated by research findings that indicate exposure to microplastics, whether through ingestion or other means, may be associated with an elevated risk of dementia (Pathway *et al.*, 2023; Nihart *et al.*, 2025). The presence of microplastic particles in surface waters is typically attributable to inadequate waste management practices within the community. Consequently, it is imperative to enhance public awareness regarding proper waste management to mitigate microplastic pollution in river waters. In addition, it is imperative to monitor microplastic pollution in river waters and to provide communal wastewater treatment plants with the capacity to treat household wastewater before its discharge into the environment.

Keywords: Microplastics, Surface Water, River, Potential Health Risk

Non-Pharmacological Interventions for Psychological Outcomes in Invasive Cardiac Procedures: A Systematic Review of Randomized Controlled Trials

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Abstract

Background:

Patients undergoing invasive cardiac procedures often experience high levels of anxiety, stress, pain, and depression, which may affect recovery and clinical outcomes. Although various non-pharmacological interventions have been investigated, the evidence remains fragmented and inconsistent.

Objective:

This review synthesizes randomized controlled trials (RCTs) to evaluate the effectiveness and timing of non-pharmacological interventions on psychological outcomes in patients undergoing invasive cardiac procedures.

Methods:

Following PRISMA guidelines, a systematic search of PubMed, Scopus, and Cochrane databases was conducted up to January 2025. Eligible studies were RCTs investigating non-pharmacological interventions before, during, or after invasive cardiac procedures, with outcomes including anxiety, stress, pain, or depression.

Results:

A total of 11 RCTs involving 1,600 patients were included. Interventions included music therapy (4 trials), virtual reality (2 trials), Quran recitation (1 trial), reflexology (1 trial), structured education/mobile apps (2 trials), checklist-based nursing (1 trial), and hypnosis (1 trial). Music therapy significantly reduced anxiety and pain across multiple trials ($p < 0.001$). Virtual reality decreased preoperative anxiety ($p < 0.05$). Quran recitation improved depression scores ($p < 0.01$). Reflexology enhanced psychological well-being ($p < 0.001$). Educational and checklist-based interventions lowered anxiety and stress ($p < 0.05$). Hypnosis showed no significant effects. Despite positive findings, heterogeneity in study designs and limited sample sizes restricted generalizability.

Conclusion:

Non-pharmacological interventions demonstrate promising benefits for reducing psychological distress and improving recovery in invasive cardiac procedures. These approaches may serve as feasible adjuncts to routine care; however, further multicenter RCTs with standardized protocols are required to strengthen clinical recommendations.

Keywords: non-pharmacological intervention, music therapy, virtual reality, reflexology, faith-based care, cardiac procedures, systematic review

Characteristics of Chronic Kidney Disease Patients at RSUD Prof. Dr. Margono Soekarjo

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Abstract

Chronic kidney disease (CKD) is a progressive condition and a major health burden worldwide. This study aimed to describe the characteristics of CKD patients at RSUD Prof. Dr. Margono Soekarjo. A descriptive cross-sectional study was conducted using structured interviews and medical record review. Data included age, sex, occupation, and etiology. The mean age of patients was in the fifth decade of life, ranging from young adults to elderly. Most patients were male (57%), while females accounted for 43%. The most common occupation was housewives (36%), followed by private employees (13%), unemployed (11%), self-employed (10%), followed by other occupations such as daily laborers, farmers, civil servants, teachers and retired individuals. All patients were in stage 5 CKD. Hypertensive nephrosclerosis was the leading etiology (56%), followed by the combination of hypertension with diabetes mellitus (23%), diabetic nephropathy alone (4%), obstructive nephropathy due to kidney stones or cysts (5%) and glomerulonephritis (3%). This findings indicate that CKD patients in this hospital are predominantly in advanced stages, with hypertension and diabetes as the major contributors. Early detection and control of blood pressure and glycemic levels are crucial to reducing the CKD burden.

Keywords: Chronic kidney disease, characteristics, risk factors, etiology, diabetes mellitus, hypertension

Flavonoid and Vitamin C Antioxidants Content of Sprouted Edamame Yoghurt with Turmeric and Aromatic Ginger: A Functional Drink for Dyslipidemia Patients

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Abstract

This study aimed to obtain the best formulation of sprouted edamame (*Glycine max* (L.) yoghurt enriched with turmeric (*Curcuma longa*) and aromatic ginger (*Kaempferia galanga*), based on its flavonoid antioxidant and vitamin C content.

A factorial completely randomized design was employed, consisting of three factors with three replications. Factor 1: proportion of sprouted edamame milk and skim milk (P1 = 90:10, P2 = 80:20, P3 = 70:30); Factor 2: lactic acid bacteria (LAB) concentration (B1 = 0.3%, B2 = 0.5%); Factor 3: percentage of turmeric and aromatic ginger extract (A1 = 5%, A2 = 10%). The mixture of sprouted edamame milk, skim milk, turmeric–aromatic ginger extract, and 5% sucrose was stirred and heated to boiling. The solution was cooled to 40–45 °C, followed by inoculation with LAB starter. Fermentation was carried out at room temperature (27–35 °C) for 20–24 hours. The resulting yoghurt, named *Yo-Glytagin*, was then stored under refrigerator.

Flavonoid content was determined using the colorimetric method, while vitamin C was analyzed by iodometric titration. The data were subjected to ANOVA, followed by DMRT at $\alpha = 5\%$ when significant differences occurred. The best formula was determined using the effectiveness index method (De Garmo et al., 1984).

The results showed that the best formula of *Yo-Glytagin* consisted of 90% sprouted edamame milk and 10% skim milk, supplemented with 10% turmeric–aromatic ginger extract, and 0.3% LAB. This formula yielded a flavonoid content of 867.97 mg QE/g and vitamin C content of 48.36 mg/100 g.

It is expected that antioxidant-rich *Yo-Glytagin* may provide beneficial effects for individuals with dyslipidemia.

Keywords: Sprouted edamame yoghurt, turmeric and aromatic ginger, flavonoid, vitamin C, dyslipidemia

Implementation of the Critical Path Method-Cuckoo Search (CPM-CS) in Project Scheduling Optimization with Term Cost Balancing

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Abstract

Effective and realistic project scheduling is an integrated and systematic scheduling between the aspects of time, resources, and project costs. Various studies have developed realistic project scheduling models by considering cost balancing. In reality, project costs are designed and disbursed periodically (per term), where the disbursement of each term is based on the progress of project implementation. The purpose of this study is to apply a combination of the Critical Path Method and Cuckoo Search (CPM-CS) algorithm to solve project scheduling problems with term cost balancing. This method has previously been developed by researchers and its effectiveness tested for project scheduling problems with daily cost balancing. CPM plays a role in determining the critical paths of project scheduling while CS utilizes time slack and makes the fastest (latest) time as the upper (lower) limit of project completion. The CPM-CS calculation compared with the deterministic CPM (earliest) and CPM (latest) calculations. The results of the study indicate that CPM-CS can provide optimal and realistic results for project scheduling problems with term cost balancing.

Keywords: Project Scheduling, Term Cost Balancing, Critical Path Method, Cuckoo Search

Financial Management Practices Based-Fintech Literacy on the Influence of Funding Access and Entrepreneurial Ability on SME Financial Performance

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Abstract

This study investigates the mediating role of financial management practices-based fintech literacy in the relationship between funding access, entrepreneurial ability, and the financial performance of small and medium enterprises (SMEs). Conducted from 2024 to 2025, the research utilized a sample of 57 furniture SMEs in Banyumas, Purbalingga, Cilacap and Surakarta area of Central Java, Indonesia. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed hypotheses of dependent variable financial performance, independent variables of funding access and entrepreneurial ability and mediating variable of financial management practices-based fintech literacy. The findings indicate that while funding access has a significant direct effect on financial performance, its influence is also significantly and positively mediated by the implementation of financial management practices-based fintech literacy. Furthermore, the relationship between entrepreneurial ability and financial performance was found to be mediated by financial management practices-based fintech literacy. This research shows the importance of financial management practices-based literacy through which financial access resources and entrepreneurial skills are effectively to produce financial outcomes for SMEs in the furniture industry sector.

Keywords: financial management practices-based fintech literacy, funding access, entrepreneurial ability, financial performance, SMEs

An Analysis Study of Three-Level Common-Emitter CSI Equipped with Low Frequency Transformer for Grid Connected Photovoltaics

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Abstract

Research on electric power generation by using renewable energy sources such as solar energy is very important to support the development and application of renewable energy in Indonesia. In case of photovoltaic system, power electronic converters especially power inverter is a crucial technology to proceed the energy generated by a photovoltaic system as in stand-alone or in grid connected operation. The power inverter converts the DC power of PV system into AC power to meet the voltage requirement of AC power load and power grid. This paper proposed and discussed an application of three-level common emitter CSI for grid connected photovoltaic system. In the proposed system, a low frequency transformer was employed at inverter output terminal to meet the voltage level of 50 Hz 220 Vrms AC grid voltage. The inverter circuit was connected to ten PV modules with total capacity 3200 WP which were constructed as two string PV modules. A simplified DC current generation utilizing a single magnetic core of inverter circuit was implemented. Some computer simulation test was conducted to investigate the inverter-power grid performance for different AC output current operation. The test results showed that the power inverter was able to inject a sinusoidal AC current with magnitudes of harmonic components were less than 1%. Moreover, a high power factor operation of inverter was achieved. These findings emphasize the potential of the proposed inverter as an effective interface for integrating renewable energy sources into sustainable power systems.

Keywords: inverter, photovoltaic, common-voltage, power factor, harmonics

Utilization Of Magnetic Anomaly Data for Identification of Fractured Groundwater Aquifers; a Case Study from Sumbang District, Banyumas Regency, Indonesia

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Abstract

This study aims to interpret the distribution of fractured groundwater aquifers in volcanic rock complexes based on local magnetic field anomaly data in Sumbang District, Banyumas Regency, Central Java, Indonesia. Geologically, the study area is dominated by lahar and lava deposits originating from Slamet Volcano. The target of the study is to obtain the potential of groundwater resources for irrigation water supply, thereby contributing to food security and agro-tourism development. Magnetic field data acquisition was carried out at measurement points with a spatial resolution of 100 m, and produced 256 magnetic intensity data points throughout the study area. The magnetic data were processed through a series of corrections and reductions, resulting in local magnetic anomaly values ranging from $-3,089.49 - 1,502.98$ nT. Next, reduction-to-equator (RTE) was applied to the local anomaly data to minimize dipole effects that can complicate interpretation. This procedure resulted in RTE local magnetic anomaly values ranging from $-2,056.54 - 2,264.55$ nT. Furthermore, horizontal gradient analysis was applied to the RTE local magnetic anomaly data to delineate the distribution pattern of fractured groundwater aquifers in the volcanic rock complexes. The calculated horizontal gradient values ranged from $0.24 - 22.72$ nT/m. Maximum horizontal gradient values formed ridge-like patterns associated with suddenly changes in magnetization, that indicate lithological boundaries that may represent fractured aquifers. The interpretation is further supported by inversion modeling, which reveals near-surface andesite lava layers characterized by numerous fractures and cracks.

Keywords: magnetic anomaly data, fractured groundwater aquifer, reduction-to-equator, horizontal gradient, Sumbang District

Smart Waste Sorting through Advanced Computer Vision: Optimizing YOLOv11 for High-Accuracy Waste Classification

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Abstract

This research develops an innovative waste classification system powered by the YOLOv11 architecture, utilizing transfer learning and optimized through Stochastic Gradient Descent (SGD). Employing the TrashNet dataset, which encompasses 2527 images across five waste categories—cardboard, glass, metal, paper, and plastic—the system was subjected to extensive hyperparameter tuning and optimizer comparisons. Optimal performance was achieved with SGD at a learning rate of 0.00075, yielding a training accuracy of 96.17%, an F1-score of 0.95, and minimal validation loss, surpassing AdamW in stability and generalization on a limited dataset. By seamlessly integrating real-time object detection with high-precision image classification, this system offers a scalable, informatics-driven solution for smart waste management. It enhances sorting efficiency in urban settings, supporting sustainable environmental practices and advancing the application of computer vision in waste processing. This work underscores the potential of AI-driven informatics to address global waste challenges, paving the way for scalable, eco-friendly waste management systems.

Keywords: YOLOv11, Garbage Classification, Computer Vision, Smart Waste Management, Transfer Learning, Environmental Sustainability

Analytical Design of a Three-Phase Permanent Magnet Synchronous Generator for Pico-Hydro Power Generation

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Abstract

This paper presents the analytical design of a three-phase permanent magnet synchronous generator (PMSG) intended for pico-hydro power applications. The proposed generator employs an inner-rotor, radial-flux, surface-mounted configuration with 10 poles, 30 slots, and a pole-arc ratio of 0.9, designed to operate at 600 rpm with a rated output of 900 W. The design methodology focuses on deriving key dimensional, magnetic, and electrical parameters—including air-gap flux density, back-EMF, winding resistance, leakage inductance, and terminal voltage—based on established analytical equations. Special attention is given to the inclusion of leakage inductance components (air-gap, slot, tooth tip, and end-winding) to improve voltage estimation under load conditions. The analytical results provide a consistent and accurate framework for predicting generator performance, confirming the feasibility of this design approach for low-speed, small-scale renewable energy systems such as pico-hydro installations.

Keywords: Analytical design, permanent magnet synchronous generator, pico-hydro, leakage inductance, radial flux

The Characteristics of Lecturers, Their Engagement and Contributions within Higher Education Institutions, and The Strategies for Developing Competencies in Relation to The Pedagogical Competence Model

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Abstract

Pedagogical competence is a vital attribute for lecturers in meeting the challenges of 21st-century learning. The stronger a lecturer's pedagogical competence, the more professional and effective their role as a lecturer becomes. A pedagogical competence model provides a foundation for enhancing teaching capacity and instructional skills, serving as a strategic response to the persistent issues of limited teaching quality and weak classroom interactions. This study investigates the strategic influence of lecturer characteristics, their academic engagement and contributions, and the development strategies of pedagogical competence on the pedagogical competence model in improving learning quality. The research involved 32 non-education lecturers from four universities in Banyumas Regency, employing a mixed-method approach through interviews and surveys, with data analyzed using SmartPLS.

The results indicate that lecturer characteristics positively affect both their engagement and contributions in higher education, as well as strategies for developing pedagogical competence. Furthermore, lecturer engagement and contributions positively shape these development strategies, which subsequently strengthen pedagogical competence itself. These findings underscore the importance of integrating lecturer attributes, active participation, and institutional strategies to foster teaching excellence and enhance the overall quality of higher education learning.

Keywords: lecturers, characteristics, engagement, contribution, development strategies, pedagogical competence

Surface Macronutrient Variability along the Indonesian Throughflow (ITF) Pathways: Insights from the Bali-Lombok Region

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Abstract

The Indonesian Throughflow (ITF) is a strategic oceanic pathway that transports heat, salt, and nutrients from the Pacific to the Indian Ocean, playing a critical role in regulating climate and sustaining regional marine productivity. Despite its importance, the distributions of surface macronutrients along its main routes remain insufficiently understood. In June 2025, a research expedition aboard the R/V *Geomarin III* was conducted in the Bali Strait, Bali Sea, Lombok Strait, and Alas Strait to examine the distribution of phosphate, nitrate, and silicate. The results revealed marked spatial contrasts, with the highest concentrations recorded at Station 3 in the Bali Sea basin and the lowest averages observed at Station 8 in the Bali Sea. These patterns reflect the combined influence of terrestrial inputs, seasonal upwelling processes, and ITF water mass transport. Nitrate emerged as the dominant driver of spatial variability, while phosphate and silicate showed greater fluctuations. The findings highlight that surface nutrient distribution along the ITF is shaped not only by large-scale circulation but also by complex local interactions. This study provides a valuable basis for understanding the biogeochemical connectivity between the Pacific and Indian Oceans and its implications for tropical marine ecosystem productivity.

Keywords: Macronutrient, Indonesian Throughflow (ITF), Bali-Lombok, Biogeochemistry

Kinetic and Isotherm Analysis of Rhodamine B Adsorption onto Humic Acid

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Abstract

Removing synthetic dyes from wastewater remains a critical environmental challenge due to their toxicity and persistence. To address this issue, this study focuses on the kinetic and isotherm analysis of Rhodamine B (RhB) adsorption onto humic acid extracted from peat soil in Rawa Pening, using alkaline extraction. The humic acid was characterized by FTIR and SEM, and quantitative analysis of functional groups. FTIR confirmed the presence of hydroxyl and carbonyl groups, while SEM showed an amorphous surface morphology. The total acidity and –COOH and –OH group contents were measured at 630, 160, and 460 cmol/kg, respectively. Adsorption performance was evaluated under varying contact time and pH conditions, achieving a 99.96% decrease in RhB concentration at pH 3 within 30 minutes. Adsorption followed pseudo-second-order kinetics and Langmuir isotherm models with a maximum adsorption capacity of 57.47 mg/g. These results contribute important knowledge about the adsorption process of humic acid derived from peat soil for the removal of RhB from aqueous solutions

Keywords: Rhodamine B, humic acid, peat soil, adsorption kinetics, isotherm

Comparative Analysis of Production Cost Efficiency Between Modern Automated Technology Housing Systems and Conventional Systems in Broiler Farming Businesses

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Abstract

This study aims to analyze the differences in technical performance and production cost efficiency between modern housing systems (closed house) and conventional systems (semi closed and opened house) in broiler farming. This non-experimental research used secondary data from partner farms of PT New Hope Indonesia for the period January-May 2025. Data were analyzed descriptively and comparatively. The results showed that closed houses produced superior technical performance: lower mortality (2.75%), more efficient FCR (1.40), and higher Performance Index (PI) (468) compared to semi closed houses (mortality 3.36%, FCR 1.51, PI 361) and opened houses (mortality 5.80%, FCR 1.50, PI 312). Financially, although feed and operational costs per bird were higher, closed houses yielded the lowest Cost of Production (HPP) per kilogram, which was IDR 15,920/kg, compared to semi closed houses (IDR 17,495/kg) and opened houses (IDR 18,060/kg). This is due to technical efficiency translating into higher harvest weight. The conclusion of this study is that investment in modern technology-based housing systems not only improves the biological performance of chickens but also significantly enhances economic efficiency by reducing the cost of production per kilogram of live weight.

Keywords: Broiler Chicken, Closed House, Cost Efficiency, Cost of Production, Technical Performance

The Bonokeling Community in Maintaining Inclusive Values

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Abstract

The objectives of this study are: a) to reveal the customs and values found in the Bonokeling community in maintaining diversity; b) to identify the teachings that form the basis of the attitudes and behaviors of the Bonokeling community; and c) to reveal the interpretations of people in the community who are not of Bonokeling descent regarding the customs and values that guide their way of life. This research design uses a qualitative descriptive approach, in which the researcher aims to describe and analyze the values found in the customs of the Bonokeling community. Informants were selected from traditional leaders and members, as well as non-Bonokeling members of the community. Data collection techniques included participatory observation, interviews, and text analysis. Research findings: 1) The Bonokeling community has strong traditional values that preserve diversity; 2) The teachings that form the basis of attitudes and behavior always refer back to the teachings of the Bonokeling grandfather, as the central figure; and 3) The Bonokeling community is interpreted as an inclusive community because they constantly strive to harmonize their customs and values so as not to conflict with the community outside their community.

Keywords: customs, attitudes, behavior, Bonokeling community, inclusive

Prima Panembangan: Smart Government Integration through Instagram for Sustainable Community Development in Rural Indonesia

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Abstract

In line with the conference theme of Sustainable Digital Transformation: Integrating Local Value in Downstream Development and the sub-theme of Sustainable Communities, this community engagement program introduces PRIMA PANEMBANGAN: Smart Government Integration for Modern Public Services in Panembangan Village, Banyumas Regency, Indonesia. Rooted in local participation, the program aimed to improve accessibility, transparency, and responsiveness of village governance by optimizing Instagram (@pemdes.panembangan) as a digital service platform. A community-based approach combined socialization of smart government concepts, development of a Standard Operating Procedure (SOP) for social media, digital literacy workshops, and capacity building for village officials and youth. Instagram was redesigned to provide real-time information, complaint services via direct messages, and integrated access to administrative forms through linktree. Results showed substantial engagement: followers rose from 650 to 1,600 (+146%) and average likes from 30 to 380 within three months. Service requests were handled within a 24-hour standard, while local potentials such as the Mina Padi smart fisheries program integrating agriculture and aquaculture, together with natural and educational tourism gained broader visibility. This initiative demonstrates that smart government frameworks can be effectively localized in rural contexts, contributing practical and theoretical insights to the discourse on digital governance in developing communities.

Keywords: smart government, sustainable communities, digital transformation, local participation, digital governance

Evaluation of Drinking Water Quality on Broiler Production Performance: A Case Study at CV. Berkah Putra Chicken

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Abstract

Water quality is a critical but often overlooked factor in broiler production. This case study evaluates the impact of microbiological water quality on the performance of broilers at CV. Berkah Putra Chicken. A non-experimental comparative design was used, analyzing secondary data from production records and laboratory reports before (June 2025) and after (August 2025) a water quality improvement intervention (cleaning, disinfection, filtration). Before the intervention, water was heavily contaminated with Total Bacteria, *E. coli*, and *Salmonella* spp., exceeding safety standards at all points (source, tank, nipple). This period recorded poor performance: mortality 24.4%, body weight 1.47 kg, FCR 1.72, performance index (PI) 208. After the intervention, water quality met all microbiological standards. Performance improved dramatically: mortality 3.9%, body weight 2.85 kg, FCR 1.47, PI 479. Improving the microbiological quality of drinking water through a rigorous management program significantly enhances broiler health, growth, feed efficiency, and overall farm profitability. Water quality management must be a top priority in broiler production protocols.

Keywords: Water Quality, Broiler, Performance, Mortality, Feed Conversion Ratio (FCR)

Analysis of Extreme Flood Districts Modeling in Demak, Kudus, Pati and Rembang Districts Using SNAP and HEC-RAS 2D Software

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Abstract

Flooding is a natural disaster that occurs when river water overflows beyond the riverbanks or due to water inundation in low-lying areas that cannot be properly drained. The major flood event that struck the regions of Demak, Kudus, Pati, and Rembang Regencies in March 15, 2024 had significant impacts, including infrastructure damage, disruption of transportation access, and substantial economic losses. These areas are highly vulnerable to flooding due to their geographic characteristics, which are dominated by lowland and coastal zones, combined with extreme rainfall and tidal events. This study aims to map the distribution of flood inundation and evaluate the effectiveness of flood analysis and modeling methods. Two main approaches were employed is analysis of Sentinel-1 Synthetic Aperture Radar (SAR) satellite imagery using the Change Detection Approach (CDA) with SNAP software, and hydrodynamic numerical modeling using HEC-RAS 2D. The CDA method compares satellite images from before and after the flood event to detect land cover changes based on pixel values, while HEC-RAS 2D simulates water flow using topographic, hydrological, and tidal data. The results show that both methods are capable of accurately depicting the extent of flood inundation. The CDA analysis is considered more precise in representing the actual flood conditions, especially across the 63 affected villages in the Demak and Kudus areas. In contrast, the HEC-RAS 2D model represented flood distribution in 54 of these villages but provided additional information on flood depth, which is not available through the CDA method. In Pati and Rembang, the largest flood inundations were identified in Gabus, Tambakromo, and Juwana Districts (Pati), as well as Sluke and Lasem Districts (Rembang). The integration of remote sensing and numerical simulation provides comprehensive and validated information, which can be used as a reference for designing efficient and sustainable flood disaster mitigation strategies, as well as for planning the development of flood-prone areas in the future.

Keywords: Extreme Flood, SNAP, HEC-RAS 2D, Change Detection Aproach, and Flood Modeling

Ethnolinguistic Study on the Cultural Heritage of the Kasepuhan Kalitanjung Tambaknegara Banyumas Community

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Abstract

The cultural heritage of the Kasepuhan Kalitanjung Tambaknegara Banyumas indigenous people is a rich and diverse heritage, reflecting the harmonious relationship between humans and nature. This culture is manifested in various aspects of life. The Tambaknegara indigenous people, predominantly Kejawen, are a community that firmly upholds Javanese cultural heritage and traditional values. The Kejawen indigenous people are an ethnic group in Banyumas that adheres closely to ancestral traditions and distinctive spiritual beliefs. Kejawen, as a belief system and philosophy of life, emphasizes harmony between humans, nature, and the spiritual world. Kejawen is not simply a religion, but a way of life that integrates Javanese cultural values with ancient spiritual practices, in which nature plays a central role. The Tambaknegara people revere nature and ancestors as integral parts of their lives, and traditional rituals often involve offerings to spirits and deities. Traditions such as slametan (traditional Javanese slametan), wayang kulit (shadow puppet show), and gamelan (gamelan) are an essential part of daily life, serving to maintain a balance between the physical and spiritual worlds. Despite the challenges of modernization, the Kejawen people strive to maintain their cultural identity by teaching their values and practices to the younger generation. The lives of indigenous communities are often grounded in traditional values passed down from generation to generation, creating a strong identity rooted in their long history. The cultural legacy of the Tambaknegara indigenous people is also reflected in their meaningful ceremonies, each ritual carrying profound spiritual and social messages. The Tambaknegara indigenous people, with their local wisdom, offer valuable perspectives on sustainability and environmental preservation, providing important lessons for the modern world.

Keywords: Ethnolinguistics, Tambaknegara Indigenous Community, Tradition, Javanese Culture, Cultural Preservation

A Conformable Model of Viscoelastic Material Deformation

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Abstract

A viscoelastic material is a material that exhibits both elastic and viscous characteristics. A viscolastic material in the form of slime is given a vertical force from above. Then the deformation of the viscoelastic material under the influence of the force is modeled using conformable fractional derivative. The numerical simulation of the solution to the mathematical model shows that the mathematical model with conformable fractional derivative is very good to model the deformation of the viscoelastic material.

Keywords: viscoelastic, deformation, conformable fractional derivative

Single Candidacy from the Perspective of Local Online Media: Democracy and the SDGs Issues

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Abstract

The phenomenon of uncontested candidacies in local elections creates a democratic dilemma: it limits citizens' choices and risks reducing political participation to mere formality. Ideally, democracy should ensure healthy competition among candidates; however, the dominance of uncontested races reflects the weakness of political party cadre formation and the lack of willingness to promote alternative leaders. The occurrence of elections with only one candidate pair or an "empty box" option, therefore, warrants serious concern. This study analyzes the factors contributing to the emergence of uncontested candidacies and their implications for the quality of democracy in Indonesia. It employs a qualitative content analysis of online local media coverage alongside a literature review of electoral regulations and political dynamics. The findings reveal that uncontested candidacies are driven by the pragmatism of political parties in forming oversized coalitions, the prohibitive costs of campaigning, and the lack of sustained cadre regeneration. These dynamics erode the substance of democracy, heightening the risk of voter apathy as political choices lose their meaning. This study contributes to the discourse on Indonesia's procedural democracy and underscores the urgency of reforming party cadre development and political financing regulations to ensure more competitive electoral contests.

Keywords: cadre development, local democracy, political costs, political participation, political parties, single candidate.

Video-Based Shadowing In A CLIL Framework: Enhancing Japanese Language Proficiency And Cultural Literacy

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Abstract

This study investigates Japanese language learners' perceptions of the shadowing technique using YouTube videos within a Content and Language Integrated Learning (CLIL) framework. The research aims to explore how video-based shadowing supports both linguistic proficiency and cross-cultural understanding. Shadowing, which involves imitating native speech in real-time, was applied using authentic Japanese videos containing culturally rich content. A qualitative descriptive method was employed, involving intermediate to advanced learners from several Indonesian Universities. Data were collected through questionnaires, interviews, and reflective journals after several shadowing sessions. The findings show that learners experienced improvements in listening comprehension, pronunciation, and vocabulary, while also gaining insights into Japanese cultural norms, speech styles, and non-verbal communication. These outcomes demonstrate the effectiveness of integrating language and cultural content as promoted in the CLIL approach. Furthermore, YouTube proved to be a practical and engaging platform for immersive learning, particularly in remote or under-resourced contexts. This study highlights the pedagogical potential of combining shadowing with CLIL to enhance communicative competence and intercultural literacy in Japanese language education.

Keywords: shadowing; Japanese language learning; CLIL; YouTube; cross-cultural understanding

Effect of Particle Fineness of Ceramic Roof-Tile Waste Powder as Cementitious Material on Mortar Performance

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Abstract

The annual production of defective ceramic roof tile waste is approximately $\pm 26,162$ tons, which remains largely unexploited. Previous studies using ceramic roof tile powder with fineness levels lower than cement showed no improvement in mortar compressive strength. This study investigates ceramic tile powder with a higher fineness than cement. Experimental parameters include fineness analysis, mortar flow, setting time, and compressive strength test. The instruments used are the Blaine tools for fineness testing, the flow table for mortar flow testing, the Vicat tools for setting time testing, and the Mortar Compression Machine for compressive strength testing. Mortar specimens ($5 \times 5 \times 5$ cm) were prepared by partially replacing cement with roof-tile powder at different substitution levels. The results indicate that the addition of finely ground ceramic roof tile waste increases mortar flow, extends setting time, and enhances compressive strength, suggesting its potential as a supplementary cementitious material in mortar applications.

Keywords: ceramic roof tile waste, fineness, mortar, cement substitution, compressive strength

Effect of Ceramic Roof Tile Waste Powder Substitution on The Setting Time and Compressive Strength of Concrete

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Abstract

Annually, defective ceramic roof tile waste reaches approximately 26,162 tons, which has not yet been optimally utilized. Previous studies reported that substituting cement with ceramic roof tile powder of lower fineness than cement did not improve the compressive strength of mortar. This study examines the substitution of cement with ceramic roof tile powder of higher fineness in concrete. The test parameters include fineness value, concrete setting time, and compressive strength. A Blaine apparatus was used for fineness testing, a penetrometer for setting time, and a Concrete Compression Machine for compressive strength testing. Cylindrical specimens with a diameter of 15 cm and a height of 30 cm were prepared for the compressive strength test. The results show that substituting cement with finer ceramic roof tile waste powder increases the setting time. Furthermore, higher substitution levels reduce compressive strength at early ages, although a higher rate of strength development is observed at later ages.

Keywords: ceramic roof tile waste powder, concrete, cement substitution, compressive strength

The Role of Virtual Reality in Enhancing Teachers' Professional Competence: Systematic Literature Review

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Abstract

The rapid advancement of digital technology has profoundly influenced the educational landscape, compelling teachers to develop competencies that align with 21st-century learning paradigms. This study systematically reviews the role of Virtual Reality (VR) in enhancing teacher professional competence by analyzing 21 scholarly articles published between 2020 and 2025. Employing the PRISMA 2020 framework, the study identifies key implementation factors that influence the effectiveness of VR-based training programs, including technological infrastructure, pedagogical design quality, teacher readiness, usability, institutional support, and feedback integration. Results indicate that VR facilitates immersive learning experiences that strengthen classroom management, reflective observation, communication, and emotional regulation. However, effective integration of VR remains contingent upon adequate infrastructure, adaptive instructional design, and comprehensive institutional support to mitigate challenges such as cognitive overload and VR-induced discomfort. This study underscores the need for targeted strategies to foster teacher readiness and leverage AI-powered feedback systems, ultimately promoting VR as a viable tool for teacher training in developing nations.

Keywords: Virtual Reality; Teacher Training; Professional Competence; Implementation Factors.

Meteoric Water Isotope Analysis: A Comparative Study Between LMWL and GMWL in Purwokerto-Purbalingga Basin

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Abstract

This study examines the stable isotope characteristics in the hydrogeological system of western Purwokerto-Purbalingga Groundwater Basin and surrounding areas to understand groundwater origin and flow patterns. The research aims to analyze the distribution of stable isotopes $\delta^2\text{H}$ and $\delta^{18}\text{O}$ in meteoric water, identify factors affecting isotopic composition such as elevation, latitude, and distance from coastline, and evaluate implications for groundwater management in the study area. The research methods include compilation of isotope data from previous publications, plotting data on $\delta^2\text{H}$ vs $\delta^{18}\text{O}$ diagrams, and comparative analysis with Global Meteoric Water Line (GMWL) and Local Meteoric Water Line (LMWL). Results show that meteoric water isotopic composition ranges from -65‰ to -35‰ for $\delta^2\text{H}$ and -10‰ to -6‰ for $\delta^{18}\text{O}$. Distribution pattern analysis confirms significant influences of elevation, latitude, and distance from coast reflecting continental effects. Deviations from GMWL and LMWL indicate isotopic modification processes due to evaporation and water-rock interactions during meteoric water transport. These findings contribute to understanding the regional hydrogeological system and provide scientific basis for determining recharge zones and groundwater protection strategies.

Keywords: stable isotopes, meteoric water, hydrogeology, western Purwokerto-Purbalingga Groundwater Basin

Optimizing Multi-Stakeholder Collaboration in Local Development: Lessons from Banyumas Regency's SDGI Implementation

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Abstract

This study examines multi-stakeholder collaboration dynamics in Sustainable Development Goals (SDGs) implementation at the local government level, specifically analyzing Banyumas Regency's experience as a recognized Smart Green ASEAN City with established partnerships involving UNDP, World Bank, and German development agencies. The research objectives were to analyze collaborative mechanisms between global, national, and local stakeholders in SDG localization, identify success factors and challenges in multi-stakeholder partnerships, and develop an optimization framework for collaborative governance in local development. A qualitative case study approach was employed, utilizing semi-structured interviews with key stakeholders from government, civil society, private sector, and international organizations, systematic analysis of policy documents and partnership agreements, and focus group discussions with development practitioners and experts. Data were analyzed using thematic analysis to identify collaboration patterns and partnership effectiveness. The study reveals that successful multi-stakeholder collaboration is characterized by strong institutional leadership facilitating cross-sectoral coordination, adaptive partnership frameworks accommodating diverse stakeholder interests, effective knowledge transfer mechanisms between international and local actors, and community-based participatory approaches ensuring local ownership. Key challenges identified include resource asymmetries among partners, coordination complexities, and implementation capacity gaps. The findings provide empirical evidence for optimizing collaborative governance models in SDG localization, offering practical insights for policymakers and development practitioners in similar decentralized development contexts.

Keywords: Banyumas regency, Multi-stake holder collaboration, SDG localization, International partnership

Governance Indicators in Public Institutions: Do they accurately reflect the quality of public institutions?

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Abstract

This study aims to investigate whether the indicators used by the Indonesian government accurately reflect the quality of public institutions. If governance indicators are valid measures of governance quality, then these indicators should demonstrate consistency and convergence. This study compares various indicators of governance from Indonesian national agencies and from international organizations, employing data from multiple years between 2020 and 2023. Our study found that an apparent convergence toward either a definitively positive or negative conclusion regarding the overall quality of governance indicators is not strongly evident. Recognizing that the indicators do not present a consistent picture. This study argues that the Indonesian governance indicators primarily focus on the administrative aspect of governance and do not sufficiently encompass other dimensions, such as the political and economic aspects.

Keywords: governance quality, public institution

Supply Chain of Urban Farming Products Based on Technological Innovation: Toward Achieving Local Food Security

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Abstract

The supply chain of food products such as vegetables and fruits is inseparable from staple food products like rice, cassava, and corn, which are essential for ensuring food availability, security, and self-sufficiency both locally and nationally. However, various challenges persist in achieving food security, including decreasing arable land, a declining farming generation, issues in marketing and distributing agricultural products, market price volatility, and uncertainties in demand forecasting and information management. This study employs a case study method with a systematic approach, involving an analysis of scientific publications and relevant case studies from the past decade. The findings demonstrate that innovative technologies such as blockchain and the Internet of Things (IoT) offer strategic solutions for addressing marketing, distribution, and market price certainty for agricultural commodities in a rapid, precise, and efficient manner. These technologies also enable information management within the supply chain for demand forecasting, quality control, and environmental monitoring. In the area of demand forecasting, these technologies can provide information with predictive accuracy of up to 25%, minimizing the risk of shortages or surpluses of food products. Furthermore, IoT-based information management ensures transparency and supports fact-based, up-to-date, and accurate decision-making grounded in real-time data. Blockchain technology guarantees transparent data recording and accountability through quality assurance (QA) and Total Quality Management (TQM) integrated with IoT, thereby maintaining the quality and quantity control of fresh produce. Environmental management is supported through Green Supply Chain Management (GSCM) strategies, which can reduce waste pollution by up to 30% through integrated reverse logistics, blockchain, and IoT technologies to identify, analyze, and expand broader market potentials, contributing to a more effective and efficient sustainable food supply chain strategy.

Keywords: Blockchain, Food Security, Supply Chain, Technological Innovation, Urban Farming

Empowering former migrant workers in the development of innovation-based cooperatives and MSMEs in Cilacap

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Abstract

The village government seems powerless to stem the tide of its people becoming migrant workers, so the potential and resources of the village are underutilized because the people have become migrant workers. The research method used a mixed methods sequential explanatory design by distributing questionnaires and analyzing them descriptively, followed by a qualitative case study method to deepen the research. The research location is in Cilacap Regency, Central Java Province. The research subjects are beneficiaries, namely former female migrant workers who mostly become administrators and members of cooperatives and MSMEs. Data collection was conducted through questionnaires, participatory observation, documentation analysis, interviews, Focus Group Discussions (FGD), and Participatory Decision Making (PDM). The research used quantitative descriptive analysis and analysis. Based on the results of the study, the profession of migrant worker is still the main priority of the Cilacap community in general, with the assumption that it is more promising and allows them to earn a large income quickly. Data shows that Cilacap Regency (2023) ranks first in sending migrant workers in Central Java Province with 11,344 people and third in Indonesia after Indramayu with 19,178 and East Lombok with 13,111 out of a total of 274,965 migrant workers. Other research findings show that many former migrant workers still lack the skills to become migrant workers, including difficulties in starting economic ventures in their hometowns upon returning home, depletion of capital, and a lack of sustainable empowerment programs for former migrant workers. Therefore, it is important to conduct research on the empowerment of female former migrant workers in the development of innovation-based cooperatives and micro, small, and medium enterprises (MSMEs) in Cilacap, which is relevant to the implementation of several Sustainable Development Goals (SDGs), particularly in the areas of poverty eradication, quality education, and gender equality, as well as decent work and economic growth.

Keywords: Cooperatives, Former migrant workers, Village government

Individual Challenges in Learning Speaking: A Review for a More Engaging Speaking Class

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Abstract

Speaking is a critical yet challenging skill for EFL learners due to its spontaneous nature, real-time processing, and high emotional demands. This study explores the individual challenges that students face in learning to speak English and how these affect their classroom participation and language development. Drawing on key theories from communicative competence, affective filter hypothesis, and pragmatic competence, this research adopts a qualitative descriptive design involving open-ended questionnaires and semi-structured interviews with 25 university students enrolled in a speaking class. Thematic analysis revealed five interrelated dimensions of difficulty: (1) linguistic challenges, especially vocabulary and grammar limitations; (2) psychological barriers, including anxiety, fear of negative evaluation, and lack of confidence; (3) the impact of classroom environment and activity design on comfort and performance; (4) learners' topic preferences, where familiar and casual themes are favored over abstract or technical subjects; and (5) the importance of pedagogical support, such as collaborative tasks, smaller group settings, and constructive feedback. The findings underscore that speaking difficulties are not merely linguistic but are deeply influenced by affective and contextual factors. Students benefit most from interactive and low-pressure environments that allow for gradual confidence-building. The study concludes by recommending a more student-centered approach to speaking instruction—one that acknowledges individual learner differences, promotes meaningful interaction, and fosters both communicative competence and psychological readiness. These insights can guide teachers in designing more inclusive and engaging speaking classes that empower learners to participate actively and confidently.

Keywords: EFL speaking challenges, communicative competence, affective filter, classroom interaction, learner confidence

Potential Adverse Effect of Oral Antidiabetic Drug in Outpatients at Puskesmas Cilongok 1 Banyumas

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Abstract

Diabetes mellitus (DM) is a chronic metabolic disease that requires long-term therapy. The use of oral antidiabetic drugs needs to be evaluated to minimize the risk of side effects. Puskesmas Cilongok 1 has the highest number of Diabetes mellitus patients in Banyumas Regency, making drug use evaluation necessary. This study was a descriptive prospective study conducted over two months using purposive sampling. Data were collected from medical records, patient prescriptions, and interviews using a questionnaire. Side effects were analyzed from patient interviews and categorized by organ system. A total of 72 patients were analyzed, with most receiving combination therapy (69.44%). Metformin was the most commonly used drug, either as monotherapy or combination. Potential adverse effects were reported by 59.72% of patients, most commonly affecting the nervous, gastrointestinal, and metabolic systems. The use of oral antidiabetic drugs in type 2 diabetes mellitus patients was dominated by combination therapy, particularly metformin and glimepiride. Potential adverse drug reactions were found in more than half of the patients, with the nervous system being the most frequently affected.

Keywords: Type 2 diabetes mellitus, oral antidiabetic, adverse drug effect

Legal Regulations and Activities of Griya Abhipraya in the Community Development System

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Abstract

Griya Abhipraya is a house of hope that serves as a place for guidance and counseling for prisoners and probationers, to foster new hope for lawbreakers so that they can improve themselves, develop their capacities, and be prepared to be accepted back into society, as well as to prevent the recurrence of criminal acts. This study aims to investigate two major questions, namely, the regulations and activities of Griya Abhipraya in the Correctional Guidance System. The method used in this study is normative juridical, and the data used is secondary data obtained from literature reviews, books, laws and regulations, and mass media. The results of this study show that the legal regulations regarding Griya Abhipraya are stipulated in Permenkumham Number M.HH-36.OT.02.02 of 2022 concerning Guidelines for the Establishment and Implementation of Griya Abhipraya, which explains the types of activities carried out by Griya Abhipraya in the context of rehabilitating prisoners and correctional clients. The conclusion of this study shows that Griya Abhipraya has a clear legal basis for its implementation and provides varied, adaptive, and humane guidance activities for prisoners and Correctional Clients.

Keywords: Legal Regulations, Type of Activity, Griya Abhipraya, Function, Guidance.

Regeneration of Young Farmers in Productive Entrepreneurship Based on Local Resources

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Abstract

The government has prioritized economic development, particularly in the areas of self-sufficiency and food security, through Presidential Regulation (Perpres) No. 81 of 2024 concerning the Acceleration of Food Diversity Based on Local Resource Potential with consideration for local wisdom. Therefore, the purpose of this study is to design a model for empowering young farmers in productive entrepreneurship based on local resources for self-sufficiency and food security. It uses descriptive methods and analysis of young farmers in Tasikmalaya Regency, West Java, who have been successful in the Youth Entrepreneur and Employment Support Services (YESS) program (2021 to 2024). The results show that this was followed up by the National Food Agency (2025), which stated that strengthening villages as the main base and spearhead and the Community Food Barn (LPM) is necessary to achieve sustainable food security and independence. However, the number of farmers in Indonesia continues to decline. Data from the Central Statistics Agency for 2023-2024 shows only 29.3 million farmers, a decrease of 7.45% from 2013, which reached 31 million farmers. Furthermore, the number of farmers in the last five years (2019 to 2023) shows that the largest category is those aged over 60 years, averaging 8.14 million people, while the younger generation or millennial farmers aged 19 to 39 years average 2.94 million people. In 2024, Survey data from CNBC Indonesia in 2023 shows that only 6 out of 100 Generation Z (aged 15-26) are willing to work in agriculture, citing reasons such as 36.6% stating that there are no promising career prospects, 33.3% stating that agricultural businesses involve many risks in the production process and harvest, 20% cited low income, 14.8% said the profession of farming is not prestigious and not valued, and 12.6% said the profession of farming is not promising

Keywords: Entrepreneurship, Local Resources, Young Farmers

Community Empowerment in Developing Family Medicinal Plants

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Abstract

Jamu as a traditional herbal medicine has become a local wisdom for the Indonesian people that needs to be preserved and developed in maintaining family and community health. This study aims to design empowerment program that supports the development of health clinics and herbal tourism based on local wisdom. The research employs a Participatory Learning and Action, with data collected through observation, interviews, discussions, and documentation. The research site is the herbal health clinic and herbal tourism area in Tegal Regency, Central Java Province. Informants were selected purposively, including herbal health tourism managers, family health empowerment groups, integrated service posts, farmer groups, small business groups, academics, and journalists. Data were analyzed qualitatively used reduction, triangulation, and verification techniques. Findings show that Jamu, a traditional herbal medicine, represents a form of local wisdom that has long been embedded in Indonesian society and should be preserved and developed to maintain family and community health. Local governments must initiate and facilitate the implementation of such empowerment in collaboration with social institutions, universities, and herbalists through awareness campaigns, counseling, training, and assistance on herbal plant cultivation. Empowerment programs as a medium of participatory communication are crucial to enhance community motivation, understanding, and skills in cultivating and medicinal plants, thereby improving socio-economic welfare and supporting the development of health clinics and herbal tourism

Keywords: community empowerment, green economy, local wisdom

The Impact of Commitment, Discipline and Job Satisfaction on Employee Performance

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Abstract

The paper objectives to explore of commitment, discipline, and job satisfaction on employee performance at Omdurman Islamic University. using a quantitative approach. This research is used employee performance theory perspective to explain research phenomena. The samples used were 119 respondents. Sampling is done by a purposive sampling technique. Data was processed and analysed by SPSS as analytical tools. This study shows that commitment, discipline, and job satisfaction are factors which effect on employee performance to achieve the goals of organization. The findings it can be concluded Islamic work ethics, motivation, discipline, commiment and job satisfaction have positive directly on employee performance.

Keywords: Employees Performance, Discipline, Job Satisfaction

Model of Community Participation in Cultural Preservation Within the Framework of Sustainable Development Goals (SDG): A Study of Museum Musik Indonesia

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Abstract

Music, as a cultural product, is a human right that must be respected and promoted. Preserving music history, however, requires significant resources and cannot be done by the state alone. Community involvement thus becomes essential. This research examines how Museum Musik Indonesia, a non-profit organization dedicated to preserving Indonesian music, contributes to this effort and collaborates with the state. Employing empirical legal research methods, which incorporate social science approaches, this study examines the role of Museum Musik Indonesia in preserving national music, its synergy with the state as the duty bearer of cultural rights, and the challenges encountered in this process. This study builds upon an earlier study within the same structure at a different institution; therefore, the findings aim to compare community participation and state-support models, inform broader efforts in fulfilling cultural rights related to other cultural expressions.

Keywords: Music Preservation, Community Participation, ECOSOC Rights Implementation, Museum Musik Indonesia

Participatory Communication in Coastal Community Empowerment for Ecotourism Development

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Abstract

This study employs a qualitative approach used a case study method to construct the phenomenon of ecotourism development at Sodong Beach, Cilacap of Indonesia. Research informants were selected through purposive sampling, comprising small business groups, livestock farmers, local government, and ecotourism managers. Data collection techniques included documentation, observation, interviews, and focus group discussions, analyzed through a Research and Development approach. The findings indicate that the challenges to developing ecotourism include shrinking productive areas for fisheries, livestock, and agriculture, as well as a declining interest among the younger generation in becoming entrepreneurs, as such fields are perceived as lacking in prospects and prestige. Nevertheless, coastal ecotourism possesses considerable potential in terms of natural beauty, coastal landscapes, and local wisdom, particularly mutual cooperation, solidarity in entrepreneurship, and distinctive culinary commodities. Hence, a community empowerment is required for ecotourism development based on local needs, issues, and potentials, while fostering motivation and inspiration among a creative, productive, and innovative younger generation through business institutional strengthening and extension activities involving training programs. The implementation of empowerment involves continuous capacity building in financial management, tourism, promotion, and marketing. Additionally, the execution of mentoring and partnership programs includes the establishment of a participatory communication forum involving all stakeholders.

Keywords: business groups, community empowerment, ecotourism, local wisdom, participatory communication

Neutron Scattering and X-ray Spectroscopy for Catalyst Characterization in Second-Generation Biofuels

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Abstract

Inelastic neutron scattering (INS) and x-ray absorption fine spectroscopy (XAFS) are essential for investigating catalysts in the hydrodeoxygenation (HDO) process, particularly for biomass conversion. INS is valuable for studying hydrogen dynamics and vibrational modes in catalytic systems, revealing interactions between hydrogen-rich molecules and catalyst surfaces. XAFS provides element-specific insights into the electronic and geometric structure of catalytic active sites, tracking changes in metal oxidation states during reactions and revealing bond distances and coordination numbers around active metal centers. This work demonstrates how combining material synthesis, neutron scattering, and computer simulation can explore interaction mechanisms of model compounds like guaiacol (GUA) and benzyl phenyl ether (BPE) adsorbed on nickel-molybdenum clay catalysts. Density functional theory (DFT) simulation helps calculate the vibrational modes of the adsorbed molecules on the catalyst surfaces and compare them to neutron vibrational spectra data. Additionally, DFT simulation is used to interpret in situ XAFS data, confirming the existence of ill-defined suboxides (MoOx, NiOx) and the well-known subsulfides (Mo₂S₉, Ni₃S₂) intermediates during catalyst activation and determining the final structures of the edges of freshly sulfided NiMoS₂ catalyst under sulfiding agents.

Keywords: Catalyst, biofuel, inelastic neutron scattering, x-ray absorption spectroscopy, density functional theory

Identification of Economic Potential in Sokaraja, Banyumas

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Abstract

This research aims to identify the economic potential in Sokaraja District and map the economic potential of Sokaraja District so that the MSMEs centers in Sokaraja District and the areas where these MSMEs are located can be identified. This research was conducted in Sokaraja District, Banyumas Regency. The location was selected based on the consideration that Sokaraja District has economic potential that can support the development of Banyumas Regency tourism. The research method used in this study was qualitative. This study used observation and interviews to obtain the necessary data and information. Overall, Sokaraja has strong economic potential, but a single regional development vision hasn't fully integrated it. Large-scale industry is strong, but it hasn't been matched by growth in medium-sized industries and cooperatives. Local trade is active but hasn't been directed toward the tourism sector. Despite its comprehensiveness, the creative sector hasn't fully utilized the financial infrastructure. Similarly, the tourism sector has enormous potential but hasn't been developed in a planned manner.

Keywords: Economic Potential, MSMEs, qualitative, financial infrastructure

GENDER EQUALITY AND SDGs: PERCEPTION OF THE MANAGEMENT OF PENGURUS JAM'IYYAH PEREMPUAN PENGASUH PESANTREN DAN MUBALIGHOH (JPPPM) IN PEMALANG REGENCY AS AN EFFORT TO PREVENT SEXUAL VIOLENCE IN THE ISLAMIC BOARDING SCHOOLS

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Abstract

This Study analyzes the perceptions of the administrators of the *Jami'iyah Perempuan Pengasuh Pesantren dan Mubalighoh* (JPPPM) in Pemalang regency regarding the phenomenon of sexual violence within Islamic boarding schools, also known as *Pesantren*. Pemalang regency was chosen due to its large number of Islamic boarding schools and the ongoing issue of sexual violence within them, necessitating preventive measures and interventions from the administrators. The urgency of this study is to identify an ideal model of female caregivers and female educators in Islamic boarding schools in Pemalang. This research, which aligns with the Sustainable Development Goals (SDGs), aims to support efforts to prevent sexual violence and promote gender equality. The qualitative method was used to analyze the perceptions and roles of the JPPPM administrators through in-depth interviews and focus group discussions with informants such as Bu Nyai (wives of Islamic Boarding School's administrators), female Islamic boarding school leaders, Preachers/Mubalighoh, female teachers/Ustadzah, and the extended family members of Islamic boarding school's owners.

The result of this study underscores the effectiveness and necessity of female parenting styles in preventing sexual violence within Islamic boarding schools. The JPPPM in Pemalang is considered adequate due to the social attributes attached to females, such as nurturing, caring, patience, and diligence in guiding the students. The majority of respondents believe that the instillation of values and character taught in Islamic boarding schools supports the prevention of sexual violence within the school environment.

Keywords: Perception, Gender Equality, Sustainable Development Goals/SDGs, JPPPM, Pemalang

Fog Catching: A Fog Harvesting Tool Design Using the Theory of Inventive Problem Solving (TRIZ)

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Abstract

The availability of clean water in highland regions is significantly impacted by geographic factors, seasonal rainfall, and distribution system constraints. Mountaineering, agriculture, household necessities, and environmental preservation are all directly impacted by these factors. Clean water is essential for mountain climbing in order to avoid hypothermia and dehydration, but its supply is frequently restricted because of irregular natural springs and decreased discharge during the dry season. However, fog, which is frequently found in mountainous areas, offers a lot of promise as a replacement water source. The goal of this project is to create a novel fog-harvesting tool that will help climbers become self-sufficient and offer a sustainable highland water supply. To come up with innovative and methodical answers to engineering problems, the design process uses the TRIZ (Theory of Inventive Problem Solving) methodology. The study generated a preliminary design concept that prioritized sustainability and functionality using the 40 Inventive Principles and the Contradiction Matrix. The study skips over material selection and production costs in favor of concentrating only on form exploration, visual design, and user interaction. Principles 10 (Preliminary Action), 34 (Discarding and Regeneration), 40 (Composite Materials), and 35 (Parameter Changes) were among the dominant principles found in the resulting TRIZ matrix (7×7). The finished design incorporates large reservoirs for increased capacity without undue complexity, protective side covers, tilted positioning for effective flow, vertical-horizontal nets for optimal fog capture, and filtration for water quality.

Keywords: Fog Harvesting, Mountain, Wather, TRIZ

Millennial-Driven Communication in Rural Sustainable Waste Management Through Village-Owned Enterprises

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Abstract

This study examines community empowerment communication strategies in plastic waste management through the establishment of Singa Barong Village-Owned Enterprise (BUM Desa) in Kebarongan village. The research aims to investigate how local governance structures facilitate environmental sustainability initiatives while promoting community economic development, particularly focusing on youth engagement in environmental conservation and plastic waste reduction efforts. The methodology employed qualitative data collection through in-depth interviews with key village stakeholders, primarily featuring discussions with Village Head Harun and other community leaders. The research utilized a participatory approach, conducting structured conversations to gather insights on village governance, economic development strategies, and community-based environmental management practices. The findings reveal that the Singa Barong BUM Desa represents an innovative model of community-driven environmental entrepreneurship, successfully integrating plastic waste management with local economic development. The study demonstrates how village leadership plays a crucial role in mobilizing community participation, particularly among young people, in environmental conservation initiatives. Results indicate that effective communication strategies between village officials and community members are essential for sustainable waste management programs. The research highlights the financial viability challenges of village leadership positions and their impact on program sustainability. Furthermore, the study shows that successful environmental initiatives require strong local governance, community engagement, and innovative business models that transform environmental challenges into economic opportunities. The Singa Barong model demonstrates potential for replication in similar rural contexts, offering insights into community-based approaches for addressing plastic waste while strengthening local economies through environmentally conscious enterprise development.

Keywords: Development communication, Plastic Waste Management, Village-owned enterprise (BUM Desa), Environmental entrepreneurship, Local Governance

Impact of Dietary Synbiotic Supplementation on Growth Performance, Hematological Indices, and Intestinal Health of Broiler Chickens Challenged with *Escherichia coli*

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Abstract

The experiment was conducted to investigate the impact of dietary synbiotic supplementation on the growth performance, hematological indices, and intestinal health of broiler chickens challenged with *E. coli*. One hundred 2-week-old Cobb 500 broiler chickens were randomly assigned and divided into four treatment groups, each with five replicates, containing five birds. The birds were housed for 35 days (before challenge) and 45 days (after challenge) with *E. coli*. The design for the dietary treatment supplementation is as follows: T1- basal diet, T2-2% *Bacillus licheniformis* in the basal diet, T3-2% *Saccharomyces cerevisiae* in the basal diet, and T4- 1% each of a combination of *Bacillus licheniformis* and *Saccharomyces cerevisiae* in the basal diet. The findings revealed that dietary synbiotic supplementation had no significant effect on feed intake, average weight gain, and feed conversion ratio in the treatment groups before and after broiler chickens were challenged with *E. coli* ($P > 0.05$). The results demonstrated a significant increase ($P < 0.05$) in total protein and albumin in the synbiotic group. The synbiotic supplementation group shows a significant effect ($P < 0.05$) on blood cell count, except basophils, which demonstrate no significant difference ($P > 0.05$) between the groups. Villus height and crypt depth significantly increased ($P < 0.05$) in the synbiotic group. Dietary synbiotic supplementation positively impacted growth performance, hematological indices, and intestinal health parameters before and after broiler chickens were challenged with *E. coli*.

Keywords: Broiler chickens, synbiotic, intestinal health, supplementation, hematological indices

Method and Model on Problem of Outlier Data

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Abstract

Inferences of population are always drawn from sample, and It could be improved using non-sample prior information (NSPI). A lot of research already used NSPI to improve population inference. However, for case of outlier problem, the population inference is approached using suitable model such as robust regression model. In this research, we then used robust regression on M estimation with Bisquare Tukey and Welsch weighting function to reduce the effect of outliers. For simulation, we used human development index (HDI) data on Central of Java from 2021-2023. Here, the predictor variables are economic growth, interest rates, and foreign exchange. In this result of the research, the selection of the best model is based on the comparison between the adjusted R-Squared values and the mean squared error of each model. Here, the research results show that the model with the Bisquare Tukey weighting function has an adjusted R-Squared value of 0.9948 and an MSE value of 0.097, while the model with the Welsch weighting function has an adjusted R-Squared value of 0.9949 and an MSE value of 0.095. Based on this comparison, we then recommended that the Welsch weighting function is an eligible choice.

Keywords: M-estimation, outlier, robust regression, Tukey bisquare function, Welsch weighting function

Enhancement of Mechanical Properties of Sodium Alginate-Based Bioplastics through the Incorporation of Silica, Bentonite, and Polyvinyl Alcohol Fillers

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Abstract

The issue of plastic waste has become a global concern that requires comprehensive solutions. Biodegradable plastics represent an alternative packaging material composed of environmentally friendly biopolymers. Natural resources derived from agricultural commodities and seaweed are commonly utilized in their production. Sodium alginate was selected in this study due to its safety, transparency, and biodegradability. In general, bioplastics tend to be fragile and less durable compared to conventional plastics. Therefore, the incorporation of fillers aims to enhance the mechanical properties of alginate-based bioplastics. The fillers employed in this research were bentonite, polyvinyl alcohol (PVA), and silica extracted from rice husks.

The experimental design applied in this study was a Completely Randomized Design (CRD) with a non-factorial arrangement, consisting of seven treatments: K = control; K1 = 2% silica; K2 = 2% bentonite; K3 = 2% PVA; K4 = 1% silica + 1% bentonite; K5 = 1% bentonite + 1% PVA; and K6 = 1% PVA + 1% silica. The parameters evaluated included moisture content, tensile strength, elongation at break, color attributes (L, a*, b*, and ΔE), and water vapor transmission rate (WVTR).

The results indicated that the addition of PVA as a filler improved the tensile strength of alginate bioplastics, reaching 1.30 MPa. Bentonite fillers, on the other hand, significantly influenced visual appearance and color. Specifically, the addition of bentonite reduced the lightness (L value) to 84.97, indicating a non-transparent or opaque appearance.

Keywords: Sodium Alginate, Bioplastics, Silica, Bentonite, Polyvinyl Alcohol

Vehicle Routing Problem in Blood Distribution Using a Hybrid Sweep Algorithm and Genetic Algorithm

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Abstract

The Blood Supply Chain (BSC) presents significant logistical challenges due to the perishable nature and varied shelf lives of blood products. Efficient delivery route planning is crucial for optimizing blood distribution and enhancing overall operational efficiency. This study addressed the complex problem of determining optimal delivery routes using variants of the Vehicle Routing Problem (VRP): the Capacitated Vehicle Routing Problem (CVRP) and the Vehicle Routing Problem with Pick-Up and Delivery (VRPPD). The solution of CVRP and VRPPD was done by using metaheuristic methods, namely hybrid sweep algorithm and genetic algorithm. In addition, a numerical comparison was made using this proposed hybrid algorithm with a genetic algorithm, both applied to the same mathematical model. The comparative analysis revealed that the proposed hybrid algorithm generated 2 clusters with a total vehicle mileage of 225.60 km, whereas the genetic algorithm yielded 3 clusters with a total vehicle mileage of 248.80 km. The genetic algorithm resulted in a 10.28% (23.2 km) increase in total mileage compared to the proposed hybrid algorithm, demonstrating the superior efficiency of the hybrid approach for optimizing blood delivery routes.

Keywords: Blood Supply Chain, Vehicle Routing Problem, Hybrid Metaheuristics, Sweep Algorithm, Genetic Algorithm

Teacher's Food and Nutrition Literacy in Primary School: Mixed Methods Study

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Abstract

Background: School children's nutrition problems are a public health concern in Indonesia, attributed to poor dietary practice and lacking nutrition education. Nutrition behavior of students is crucially contributed by teachers, but no report is available about their food and nutrition literacy (FNLIT).

Methods: A mixed-methods design assessed the FNLIT of 19 primary school teachers in Banyumas Regency using a validated Short Food Literacy Questionnaire (SFLQ) and focus group discussions (FGDs). Quantitative data were analyzed through descriptive statistics, while qualitative data were analyzed using thematic analysis.

Results: In the results, it was revealed that 84.2% of the teachers had inappropriate or limited food literacy. The majority of the participants were not aware of Indonesia's new standards of balanced nutrition and had poor knowledge of food labeling and food safety. While basic principles of nutrition were taught by some of the teachers in the classroom, they were outdated and rudimentary. Barriers to learning nutrition were heavy curriculum loads and poor teacher literacy in nutrition. Furthermore, the unhealthy eating behavior of the students was a result of environmental and family conditions rather than classroom teaching.

Keywords: Food and nutrition literacy, teachers, primary school, mix method study

Kisspeptin Elevates Estradiol and Up-regulates Reproductive Genes in Giant Gourami (*Osphronemus goramy*)

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Abstract

Kisspeptin is a key regulator of the hypothalamic–pituitary–gonadal (HPG) axis that stimulates gonadotropin-releasing hormone (GnRH) and downstream reproductive hormones. This study evaluated the short-term effects of dietary kisspeptin on kisspeptin receptor (kissr) and vitellogenin (vtg) gene expression, and the longer-term impacts on reproductive performance in giant gourami (*Osphronemus goramy*). A completely randomized design was used with three kisspeptin inclusion levels in the diet (0.0, 0.5, and 1.0 g kg⁻¹), applied for 8 weeks. Four aquaria were used; each aquarium held nine fish, and sampling was conducted bi-weekly. Kisspeptin supplementation significantly increased plasma estradiol (E2) concentrations in a dose-responsive manner ($p < 0.05$). Concomitantly, hepatic vtg and kissr mRNA levels were up-regulated in kisspeptin-fed fish, and indices of reproductive performance (e.g., spawning readiness and fry output) improved relative to controls. These findings indicate that dietary kisspeptin enhances endocrine and molecular markers of reproduction and can be used to improve broodstock performance in giant gourami.

Keywords: kisspeptin, estradiol, vitellogenin, kisspeptin receptor, HPG axis, *Osphronemus goramy*, broodstock nutrition

Effectiveness of Coating Materials in Nanoencapsulation of Hydrolyzed Tuna Fish Visceral Peptides

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Abstract

Nanoencapsulation of tuna visceral waste peptide hydrolysates is rich in bioactive amino acids, but its application is still hampered by low stability and bioavailability. This technology converts peptide hydrolysates into nano-sized particles in powder form. This study aims to determine the particle size, zeta potential, and morphology of nanoencapsulated peptide hydrolysates using different coatings. The coating materials used are maltodextrin (A) and a combination of maltodextrin and whey (B). The methods used included: preparation of peptide hydrolysate; nanoemulsion at a temperature of 40°C, speed of 2000 rpm and 700 rpm; spray drying with inlet-outlet temperatures of 110-120°C and 60-75°C. The testing parameters included determining particle size and zeta potential using a Particle Size Analyzer and the morphology of peptide hydrolysate nanoencapsulation using an Olympus CX33 microscope with 1000x magnification. Treatment A with maltodextrin coating material had a particle size and zeta potential of 219.6±157.1 nm and -16.6 mV. The combination of maltodextrin and whey coating materials (B) produced a particle size and zeta potential of 183.8±88.0 nm and -23.3 mV. The morphology of nanoencapsulation is smooth, perfectly round, with a clear colour difference between the coating material and the coated material. The coating material, a combination of maltodextrin and whey (B), provides the best zeta potential and particle size. This technology successfully reduces particle size to the nanoscale. Nanoencapsulation effectively preserves amino acids from peptide hydrolysates, thereby supporting growth and the immune system.

Keywords: Nanoencapsulation, hydrolysis; peptide, tuna fish