Bezayit Amare

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ABOUT ME

EDUCATION AND TRAINING

Master of Science (MSc) in Industrial and Environmental Biotechnology

Addis Ababa Science and Technology University — Feb 2021 – Aug 2023

City: Addis Ababa | **Country:** Ethiopia | **Website:** http://www.aastu.edu.et/ | **Final grade:** 3.95 / 4.00 – Graduated Top of Class (Rank: 1st) | **Thesis:** "Shotgun Metagenomic Insights into Secondary Metabolite Biosynthetic Gene Clusters in Natural Farmland Soil."

- Led shotgun metagenomic analysis on soil samples from two Ethiopian farmlands using Illumina sequencing and metaSPAdes assembler.
- Identified 274 biosynthetic gene clusters (BGCs) across 21 classes, including novel PKS, NRPS, RiPP, and terpene clusters.
- Revealed over 1,400 unique KEGG orthologs, highlighting extensive functional diversity within the microbial communities.
- Characterized biosynthetic pathways using InterProScan and KEGG Mapper, linking gene functions to metabolite production.
- Tools: Illumina, metaSPAdes, AntiSMASH, NaPDoS2, InterPro, KEGG, NCBI NR database.
- https://www.nature.com/articles/s41598-024-63254-x

Bachelor of Science in Biotechnology

Addis Ababa Science and Technology University — Sep 2016 – Jan 2021

City: Addis Ababa | **Country:** Ethiopia | **Website:** http://www.aastu.edu.et/ | **Final grade:** 3.84 / 4.00 – Ranked 2nd highest in class, | **Thesis:** Isolation of Cr (VI) Reducing Bacteria from Polluted River in Addis Ababa: Bioremediation Perspectives.

- Isolated and characterized *Klebsiella* spp. capable of reducing toxic hexavalent chromium (Cr VI) to its less harmful trivalent form (Cr III) from industrially polluted river water.
- Assessed chromium-reducing capacity across four concentrations (113.19, 150.92, 226.38, 452.77 mM), with one isolate exhibiting strong resistance under high-toxicity conditions.
- Quantified Cr (VI) reduction using spectrophotometry at 540 nm, achieving up to 97% reduction efficiency at lower concentrations.
- Performed Gram staining and biochemical assays (TSI, Catalase, Citrate, LIA, MacConkey) to classify the isolate as a Gram-negative, lactose-fermenting, rod-shaped bacterium.
- Tools & Techniques: LB agar, Cr(VI) serial dilution, Diphenylcarbazide assay, UV-Vis spectrometry, Gram staining, biochemical profiling.

WORK EXPERIENCE

Hilltops Academy, Addis Ababa — Dec 2023 – Present – Addis Ababa, Ethiopia

City: Addis Ababa | **Country:** Ethiopia

Environmental Science Teacher

[Current]

- Delivered high-engagement science instruction aligned with STEM frameworks for 1,000+ students.
- Designed and orchestrated hands-on experiments and environmental science projects, driving a 30% increase in class participation and retention based on teacher feedback and student performance.

- Implemented formative assessment strategies (quizzes, group evaluations, peer reviews) to track student progress and pinpoint learning gaps, resulting in a 10–15% improvement in average assessment scores.
- Achieved 95% positive student feedback on lesson clarity and engagement by integrating digital and physical teaching aids into the science curriculum.
- Cultivated an inclusive learning environment through behavior modeling and student-centered pedagogy, reducing incidents by 40%.

Ethiopian Public Health Institute, Addis Ababa — Jul 2019 – Aug 2019 – Addis Ababa, Ethiopia

City: Addis Ababa | **Country:** Ethiopia

Laboratory Technician Intern

- Prepared and quality-controlled 11 types of culture media (e.g., MAC, BAP, CHOC, TSI, LIA, SIM, MHA), following SOPs and sterility protocols.
- Assessed 60+ clinical samples through Gram staining, colony morphology, 7+ biochemical tests, and selective media to identify clinically relevant pathogens.
- Executed AST on 50+ isolates using the Kirby-Bauer method to assess resistance in pathogens like *E. coli*, *S. aureus*, and *N. gonorrhoeae.*
- Documented multi-drug resistance patterns, with isolates resistant to 6–9 antibiotics, including *E. coli* (Ampicillin, Cefazolin, Ciprofloxacin) and *S. aureus* (Penicillin, Clindamycin, Tetracycline).
- Assisted in processing and cataloging patient samples as part of Ethiopia's public health diagnostic initiative.

LANGUAGE SKILLS

Mother tongue(s): Amharic

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

. Microbial isolation and identification / . Bioinformatics: quality control and analysis of raw sequence data / . Tools: Unix command line, Python (basic), genomic databases & servers / . DNA extraction and purification from environmental samples

CERTIFICATIONS

Data Analysis Fundamentals – Udacity

Certificate of Innovative Pedagogy – Kotebe University of Education & NUF Africa Research and Training Institute