

Team Id: PNT2022TMID38677

Team Leader:E.L vincy rashitha

Team Title: fertilizers recommendation system for disease prediction

Members List: 4

INTRODUCTION		SURVEY BODY OF REVIEW					CONCLUSION		
Year	Title	Keywords	Problem Definition	Methodology (Algorithm, Protocol...Etc)	Input Parameters	Result	Advantages	Disadvantages/ Drawbacks	Research Gap/Research Question
1. 2022	soil - based,field -specific fertilizer recommendation are a pipe-dream	1.soil analysis 2.laboratory 3. errors, quefts, 4.soil nutrients agronomic efficiency	For soil disease prediction by using Quantitative evaluation of fertility of tropical soil	chemical analysis and sampling error two components soil ph,soil organic carbon	To implement Single soil sample needed	overall average cv values for samples for ph	1.avoid risk 2.long term historical	1.It cover limit environment	Requirement of best indicator of local soil
2. 2022	application of ammonium fertilizers recovered by an	1.circular economy 2.sustainability 3.ammonia 4.re-using nutrients	For nitrogen is essential for crop growth	Electrochemical Used to reject first ammonium And remove Water	the nitrogen into waste water have been broken	separation of acid ordered according total	1.crop growth 2.reduce nitrogen growth	1.most cost associated	To research growth of cultivation underlying this work is available cooperation

	electrochemical system	5.nitrogen recovery				nitrogen concentration			
3. 2022	nutrient management may reduce global warming potential of rice cultivation in subtropical india	1.global warming potential 2.greenhouse gas,crop modeling, 3.food security	For indicated better nutrient management practice in rice cultivation	crop models, cultivation and validation gas sampling	rice production	land use of ecosystem	1.better nutrient 2.rice cultivation	1.rising contraction	To find the atmospheric methane,co2 productivity
4. 2022	soil health and its relationship with food security and human health to meet the sustainable development goals in india	1.soil function 2.sustainable 3.development goals 3.soil quality 4.critical zone 5.soil education	For abilities to contribute global food security	soil nutrient status organic carbon health	basic soil properties	soil research	1.clean water 2.secure food 3.livehoods	1.shift of cultivation 2.poor soil quality	To targeted nutrients available in soil
5. 2021	impacts of soil fertility	1.rice based intercropping system,	optimum conditions	soils fertility status	fertility parameters	soil groups in	1.reduce toxicity	1.stimulate soil 2.biological activity	this research did not receive

	managem nt on product and economics of rice and folder intercroppi ng systems under rainfed conditions in odisha,indi a	2.fodder cultivation, 3.nutrient manageme nt, 4.rice and cowpea fodder 5.intercropi ng system	for plants growth		across soils groups	differe nt tombel area			any specific grant from funding agencies
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Ms. Dhatchayani .S									
Year	Title	Keywords	Problem Definition	Methodology (Algorithm, Protocol...Etc.)	Input Parameters	Result	Advantages	Disadvantages/ Drawbacks	Research Gap/Research Question
	A smartphon e based plant	1.Smartpho ne 2. Plant diseases	Plant disease identified by current	capture the image then classified the image	Image, API CNN, ANN+CNN,	Smartp hone base plant	1.Using smartphone taking the image select	1.Already fixed treatment for particular diseases only	Recommend the treatment for the classified disease using content base

6. 2022	disease detection and treatment recommendation system using machine learning technique	3.Recommender system 4.Treatment 5.Machine learning 6.Classification	technology by implemented user's friendly smartphone based plant disease treatment recommender by using machine learning techniques	recommended treatment for the plant disease	classified the image, recommended system model	diseases treatment recommended using ML techniques	particular part of image identify the disease and recommended the treatment	can recommended	filtering recommender system technique
7. 2022	An Artificial intelligence solution for crop recommendation	1.Deep learning 2.Deep neural network 3.Machine learning 4.classifiers NPK Predictions	It To predicting the fertility of the soil and also to predict the right crops to be grown in soil	classifying multiple crop AI prediction module to predict the best crop	classifier crop, collect the data set, fertilizer data set, predict the right crop for the disease	Minimum level of accuracy will predict base on the soil properties	1.Self learning 2.Ability 3.Robustness 4.Flexibility And many more things	1.It Show the maximum level of crop yield	predicting the right crops and help out the farmers to choose the most appropriate crop for his land based on the soil properties.
8. 2021	Soil Analysis and crop fertility prediction using	1.fertility 2.crop yield prediction 3.soil chemical feature	They are different type of soil properties know the characterist	1. Soil dataset 2. Crop dataset 3. Yield dataset	collection of dataset, known properties at characteristi	Predicting the soil fertility@crop yield	1.This completes the one epoch multiple epoch are	1.Predicting the Crop sow certain soil type	Providing fertilizer and also data from another region will be addedto make this model more reliable

	machine learning	4.ANN 5.machine learning	ics @properties for various soil type understand it which crop sow in certain soil type using machine learning	4. Training dataset 5. testing dataset	cs of soil type, identity crop sow in certain soil type	with type of the crop can grown on fertile soil	running accuracy reached the optimal value		and more efficient usage
9. 2019	Crop suitability /fertilizers recommendation using data mining technique	1.NPK 2.K-Means Clustering 3.Fertilizer Recommendation 4.Random Forest Algorithm 5.Ontology	Predict the suitable crop for the field under the base on the regions and climate	Crop recommendation Fertilizer recommendation	farmer, Server, Fertilizer recommendation system, ontology	Recommendations of suitable crop in the field for crops to data stored in ontology	1.Changes of climate base on disease will occur recommend treatment by using two data mining technique for it and store the data in ontology	1.Approximate fertilizer quantity and type of crop will grown or planted	Android application will be developed in regional language
10. 2019	Fertilizer Recommendation system for disease prediction	1.Disease Prediction 2.Graph Cut Algorithm 3.Guided Active	For Testing the leave issues for quality and quantity of the food crops using	The digital camera(or) are take image of different types & identify the	Segment of leaf boundary,	Base on SVM to classify tree leave	1.It gives better result when compared to existing	1.It takes more time consumption	To identify the disease that affect the various plant

	in tree leave	Contour method, 4. Leaf segmentation 5. Leaf Feature Identification.	SVM approach	affected area in leaves especially need to predict both quality & quantity of leaf model	classification affected part, image acquisition testing diseases suggested the fertilizer	identify the disease and suggest the fertilizer	CNN yield more productivity		organs such as stems & fruits
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Ms.Saraswathi.K									
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11. 2022	Intelligent insecticide and fertilizer recommen dation system	1. Artificial Intelligence 2.Mathemati cal model3.Preci sion Farming	To enhance agricultura l production and productivit	Temporal Pos Feature-Convetional Neural Network (TPF-CNN) model,	Plant leaf Image, Soil nutrients	Based on soil nutrients level, fertilizer recomme ndation	1.Gain maximum farm yield. 2.Nutrient-rich soil.	1.It does not save any data on the system or cloud database. So we will not do any on	In this work, they have not consider pH, temperature, humidity, and moisture for open and indoor farming

	based on TPF-CNN for smart farming	4.Sensor technology	y by offering smart technology which will recommend insecticides and fertilizers for crops and in the soil using TPF CNN dual operator approach	Support Vector Machine(SVM), Artificial Neural Network(ANN) and , K-Nearest Neighbour (KNN)		would be done	3. It does not require an internet connection	demand fertilizer recommendation system.	
12. 2022	Comparison of Artificial Intelligence algorithm in plant disease prediction	1.Artificial Intelligence 2.Machine learning 3.Deep learning	To predict plant disease in a specific area based on the forecasting model of weather.	Conventional Neural Network (CNN), Artificial Neural Network (ANN), Support Vector Machine(SVM)	Type of Climate, Specific crop, disease, Training data, Test data,	Identifying of pathogens causing disease & recommending fertilizer	1.Accurate prediction 2. It Minimizes the loss of crop due to disease attacks. 3.This Grows crop in desert regions	1. Plant disease prediction is based on weather condition.	It does not consider the Ph parameters and it can use other algorithms.

),K-Nearest Neighbour(KN N)			4. The amount of spraying time of fungicide sprays avoid the growth of disease.		
13. 2021	Soil based Fertilizer recommendation system for crop disease prediction system	1.Soil nutrients 2.Fertilizer3. Sensors	The type soil nutrient and of leaf disease occurring the crop	Long or short term memory algorithm	Soil type, soil analysis report	Analyzing soil nutrient type for crop yield	1.Highly Efficient	1.Alogrithm requires a lot of resource and time	Does'not use any valid parameter regarding soil type and it does't recommend fertilizer to diversified crops.
14. 2021	Anutrient recommendation system for soil fertilization based on evolutionary computation	1.Sensor data 2.Evolutionary computation 3.Soil nutrients 4,Agriculture	The exploration of nutrients to develop a knowledge-based system for the ICT environment.	Improved Genetic Algorithm (IGA)	Sensor, Threshold values , Extract patterns from the time-series data of Nitrogen, Phosphorus and Potassium(NPK)	Reduce the computation resources and improve the recommendation to maintain crops for	1.This method performs better against the standard recommendation. 2. It optimizes the crop yield and maintain the soil nutrient.	1.Its does not uses the multi-objective optimization models to solve optimization issue for more efficiently.	The optimization search strategy and individual repair methods to extract valuable parameters will reduce the computation resources and improve the recommendation to maintain crops for soil fertilization.

						soil fertilizati on.			
15. 2019	Prediction of crop yield and fertilizer recommen dation using Machine Learning Algorithm	1.Agricultur 2.Yield Prediction3. Machine learning4.Ra ndom Forest 5.Soil Nutrients.	To detect Crop diseases and recommen d pesticides for disease based on Support Vector Machine(S VM).	SupportVector Machine (SVM), Crop Image.	Soil nutrients, Location data, Plant image.	The predictio n of crop yield based on location and the higher crop yield is achieved	1.There is a higher crop yield of productivity	1.Takes a more time to predict the disease in the crop.	In this work, they have not consider pH, humidity, and moisture for disease prediction.

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Ms.Divya.K									
16. 2021	Crop yield prediction and fertilizer recommendation using voting based Ensemble classifier	Crop,SVM, KNN,random forest , nitrogen ,phosphorus,CNN	The proposed can be used to determine the ideal planting season ,plant development , and plant harvesting	Random forest is a supervised learning algorithm	Nitrogen ,ph , potassium etc	The information they need to earn a high return and as a result increase benefits lowering self destruction rates	Predicting the better crop is the ultimate aim of the project	Problem is to have the better crop yield	Base on the voting prediction the fertilizer recommendation is possible?
17. 2021	Machine Learning Strategy for Soil Nutrients Prediction Using Spectroscopic Method	machine learning; nutrients prediction; soil spectra; soil analysis; soil	Based on UV-VIS and VIS - NIR spectra without selection of spectral variable	RF for OC, LS-VM for N, P and K, GRNN for nutrients	Soil,Joined fiber optic,lightbox ,spectrometer .	The presented results confirm our initial hypothesis that the Machine Learning signifi-	Low computation time Performs well with large datasets Reduce data	Do not deal with nonlinear problems over-fitting may occur	What Chemical characterization of the samples was performed in a certified laboratory ?

		category; precision farming	selection, provided the ability to distinguish between high and low values			cantly improves the accuracy of soil property prediction.	dimension ality Provide a feature selection Easy to implement		
18. 2021	Optimized fertilizer recommen dation method for nitrate residue control in a wheat– maize double cropping system in dryland framing.	Nitrogen Phosphate Nitrogen requiremen t Nitrate nitrogen Fertilizer recommen dation.	Nitrogen Phosphate Nitrogen requiremen t Nitrate nitrogen Fertilizer recommen dation.	Winter wheat– summer maize is the major local cropping system in this area.	The local production level limits the target yield, and if the relationship between the amount of fertilizer applied and grain yield is established by collecting field data for a specific re- gion, the estimation of this parameter will be accurate.	The yields were further improved by 81.9 %, 79.8 %, and 75.7 % at P rates of P1, P2, and P3, respectively, compared with P0.	These results indicate that the crop yields were increased by N applicatio n and they increased further when combined with P fertilizer.	Thus, insufficient or excessive N and P fertilizer decreased HI, which was not conducive to enhancing the crop yield.	Developed a convenient method to optimize the fertilizer recommendation method for the winter wheat– summer maize cropping system.

19. 2020	Review on application of drones for crop health monitoring and spraying pesticides and fertilizer	Unmanned aerial vehicle, camera, GPS, crop monitoring, spraying system ESC,	To measure the speed of wind the indicator is used to measure the moisture in the air	Digital temperature , humidity indicator ,water sensitive sensors, anemometer, filter papers.	Training process,RGB, HSV,YUV, accuracy	performance of this method will increase by quadcopter	Implementation of the agriculture technique to enhance the productivity	Sometime show the different color in the training process	How to find the color of the plant?
20. 2018	Variable Fertilizer Recommendation by Image-based Grass Growth Status	Precision, Sensors, Image processing, Variability, Automatic control.	production fields and calibration relationships were obtained between the sensor measurements and grass growth levels.	1.Sensing grass growth information 2.Image acquisition 3.Processing of the images *VRF Recommendation *Prescription *Variable rate applicator	Sodium,Potassium, phosphorous,nitrogen	Variations in the growth levels of the zoysiagrass were found for the same field, therefore, different levels of fertilizations were recommended.	1.Simple methodology 2.Easy to predict	1.More resources needed	This study would contribute greatly to increase fertilizer use efficiency and reduce environmental contamination, if the recommended fertilizers were variably applied.

