V.S.B.ENGINEERING COLLEGE, KARUR

Department of Computer Science and Engineering

IBM NALAIYA THIRAN

LITERATURE SURVEY

TITLE : Fertilizers Recommendation System For Disease Prediction

DOMAIN NAME : Artificial Intelligence

LEADER NAME : Anupriya.A

TEAM MEMBER NAME : Bindu.S, Dhaarani.S, Devi Prabha. M

MENTOR NAME : Nandhini Devi. S

ABSTRACT : Agriculture is the main aspect of country development. Many people lead their life from agriculture field, which gives fully related to agricultural products. Plant disease, especially on leaves, is one of the major factors of reductions in both quality and quantity of the food crops. In agricultural aspects, if the plant is affected by leaf disease then it reduces the growth of the agricultural level. Finding the leaf disease is an important role of agriculture preservation. After pre-processing using a median filter, segmentation is done by Guided Active Contour method and finally, the leaf disease is identified by using Support Vector Machine. The disease-based similarity measure is used for fertilizer recommendation

INTRODUCTION : Detection and recognition of plant diseases using machine learning are very efficient in providing symptoms of identifying diseases at its earliest. Plant pathologists can analyze the digital images using digital image processing for diagnosis of plant diseases. Application of computer vision and image processing strategies simply assist farmers in all of the regions of agriculture. Generally, the plant diseases are caused by the abnormal physiological functionalities of plants. Therefore, the characteristic symptoms are generated based on the differentiation between normal physiological functionalities and abnormal physiological functionalities of the plants. Mostly, the plant leaf diseases are caused by Pathogens which are positioned on the stems of the plants. These different symptoms and diseases of leaves are predicted by different methods in image processing. These different methods include different fundamental processes like segmentation, feature extraction and classification and so on. Mostly, the prediction and diagnosis of leaf diseases are depending on the segmentation such as segmenting the healthy tissues from diseased tissues of leaves.

LITEREATURE SURVEY:

1. The author describes stability in fertilizer application[1], growth, and root growth rate increases crop fertility and crop production. To predict the suitable nutrients for different crops and provide nutrients recommendations by analyzing the crop fertility and yield production, this paper proposes nutrient recommendations through [1] an improved genetic algorithm (IGA) that uses time-series sensor data and recommends various crop settings. A neighborhood-based strategy is then presented to handle exploration and exploitation for optimizing the parameters to obtain the maximum yield. The method can expand knowledge by using the population exploration strategy.

2. The author aims to recommend the most suitable crop [2] based on input parameters like Nitrogen (N), Phosphorous (P), Potassium (K), PH value of soil, Humidity, Temperature, and Rainfall. This paper predicts the accuracy of the future production of eleven different crops such as rice, maize, chickpea, kidney beans, pigeon peas, moth beans, mungbean, black gram, lentil, pomegranate, banana, mango, grapes, watermelon, muskmelon, apple, orange, papaya, coconut, cotton, jute, and coffee crops using various supervised machine learning approaches in of India and recommends the most suitable crop.

3. Precision agriculture focuses on identifying these parameters in a site-specific way to identify issues. Not all the results given by precision agriculture are accurate to result but in agriculture, it is significant to have accurate and precise recommendations because in case of errors it may lead to heavy material and capital loss. Many research works are being carried out, to attain an accurate and more efficient model for crop prediction [11].

4. For the successful application pre-processing is required. The data which is acquired from different resources are sometime in raw form. It may contain some incomplete, redundant, inconsistent data. Therefore in this step such redundant data should be filtered. Data should be normalized[5]. This step is focus on identifying and using most relevant attribute from the dataset. Through this process irrelevant and redundant information is removed for the application of classifiers [5].

5. Farmers are unaware of the pest that destroy the crops and use excessive insecticides, which makes the crop toxic to human health. Also, farmers are unaware of the fertility of the soil and add fertilizers according to their will. Hence, there is a need to control the excessive use of insecticide on crops and the addition of particular fertilizer quantities to the soil. To overcome these main problems in farming, an intelligent system is developed, which includes pest identification and insecticide recommendation along with soil NPK monitoring and fertilizer recommendation.

REFERENCES:

1.Pawar, M., & Chillarge, G. (2018, April). Soil toxicity prediction and recommendation system using data mining in precision agriculture. In *2018 3rd international conference for convergence in technology (I2CT)* (pp. 1-5). IEEE. Pawar, M., & Chillarge, G. (2018, April). Soil toxicity prediction and recommendation system using data mining in precision agriculture. In *2018 3rd international conference for convergence in technology (I2CT)* (pp. 1-5). IEEE.

2. Gosai, D., Raval, C., Nayak, R., Jayswal, H., & Patel, A. (2021). Crop Recommendation System using Machine Learning.

3. Pudumalar, S., E. Ramanujam, R. Harine Rajashree, C. Kavya, T. Kiruthika, and J. Nisha. "Crop recommendation system for precision agriculture." In 2016 Eighth International Conference on Advanced Computing (ICoAC), pp. 32-36. IEEE, 2017

4. Gandge, Yogesh. "A study on various data mining techniques for crop yield prediction." In 2017 International Conference on Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), pp. 420-423. IEEE, 2017.

5. Thorat, T., Patle, B. K., & Kashyap, S. K. (2022). Intelligent Insecticide and Fertilizer Recommendation System based on TPF-CNN for Smart Farming. *Smart Agricultural Technology*, 100114.