

## **LITERATURE SURVEY**

### **1) In Year 2022, "A Machine Learning Based New Recommendation System To The Farmer".**

**AUTHORS: D.N.V.S.L.S indra, M.Sobhana, A.H.L.Swaroop, V.PhaniKumar.**

Totally 54% of India's land area is deemed arable, making it the world's largest agrarian economy. Soil infertility owing to over fertilization, as well as a lack of access and awareness of contemporary agricultural practices, are the different factors that contribute to low agricultural production. The main purpose of this research work is to develop a machine learning-based recommendation system to increase agricultural productivity. A variety of datasets were used in this study to design and develop advanced models to estimate the crop, recommend fertiliser, and identify plant disease. An algorithm called MobileNet uses an image of a leaf to identify the disease present in a plant. The XGBoost model predicts a suitable crop based on the local soil nutrients and rainfall. Random Forest [RF] model was used to propose fertilizer and develop ideas for improving soil fertility depending on nutrients present in the soil. When compared to other approaches, the proposed model delivers a high level of accuracy.

### **2) In Year 2022, "Crop Prediction And Disease Detection System".**

**AUTHORS: Sambhav Bhansali, Punit Shah, Jinay Shah, Priyal Vyas, Poonam Thakre.**

Economy of India highly depends on agriculture. Still traditional ways of recommendations are used for agriculture. Currently, farmers use traditional ways of approximations for amount of fertilizer used and the type of crop to be sown. Agriculture extremely depends on the type of soil and climatic condition of the region. Therefore, it becomes vital to create advancement in this field. With the help of Machine Learning and Deep Learning Techniques we will create a Web-App which will be one-stop solutions for information regarding the agriculture. Crop and fertilizer recommendation system will help the farmers in increasing their yield production. We are going to take the soil parameters along with the weathers API to figure out the most suitable crop for that region. Using the decision tree and navies bayes algorithm we will make the recommendation model which will use the N-K-P, Ph. value. Basis on the crop and region of farming we will recommend the fertilizer and its uses to boost the yield productivity for farmers. Sometimes due to unwanted excess of rainfall or the pest attack can cause disease to crops. We will use the image classification technique where the user can upload the picture of the affected plant/crop and the system will figure out the type of disease which will be done using Support Vector Machine (SVM) or using the neural network techniques. And this disease detection will suggest that how that plant/crop can be cure or prevent. The aim is to make a common system for all the features and provide the results with the best accuracy for all the crops over most of the regions all over the India. Also, the price and news section will keep the farmers updated with daily market prices and government schemes and policies related to the agriculture and farming.

### **3) In Year 2022, "Agro-Farm-Crop, Fertilizer & Disease Prediction".**

**AUTHORS: SanidhyaPurohit, DeepSanghani, NamanSenjaliya, Prof. Anuradha Kapoor**

Data mining is a rising studies area in crop yield analysis. Yield prediction is a complete essential problem in agriculture. Any farmer is interested in knowing how much yield he is about to expect also, it will end-user-helpful to farmers for indicating which fertilizers to be used as well as knowing the crop diseases all at one place. The project comes with a model to be precise and accurate in predicting crop, fertilizers, Crop disease and deliver the end-user with proper recommendations about the required fertilizer ratio based on atmospheric and soil parameters of the land which enhance to increase the crop yield and increase farmer revenue.

### **4) In Year 2021, "Neural Network Based Fertilizers Recommendation System For Disorder Classification And Prediction In Petal Images".**

**AUTHORS: N.Valarmathi, M.Vengateshwaran, Kalaimani Shanmugam, R.Sudha.**

The point of farming isn't just to take care of the ever-developing populace but at the same time is a basic wellspring of vitality and an answer for the emergency of an Earth-wide temperature boost. Determination of plant ailment is basic for early finding and control of it. The unaided eye method is generally utilized for the conclusion of ailments. This methodology requires experts who can recognize varieties in leaf shading. Ordinarily a similar malady is characterized by a few specialists as a different sickness. This arrangement is exorbitant, in light of the fact that it requires nonstop expert management. Makers need to follow their yields and perceive the primary signs at modest costs so as to abstain from spreading even a plant malady and spare a lot of income. Recruiting qualified ranchers can't be reasonable especially in far off geologically detached zones. AI calculations in an image can give a substitute strategy to following plants and an expert can deal with such a way to deal with offer their types of assistance at a lower cost. It incorporates picture division which incorporates the dynamic shape strategy and the picture arrangement approach which incorporates a neural system calculation for foreseeing various kinds of ailments. Or on the other hand grow the way to deal with suggest the composts dependent on the examination of power with estimations.

### **5) In Year 2020,"Design and Implementation of Fertilizer Recommendation System for Farmer".**

**AUTHORS: Dr.S.UshaKiruthikika, Dr.S.Kanaga Suba Raja,S.R. Ronak,S.Rengarajen, P.Ravindran.**

India is an agrarian nation. But creating a profitable yield for the farmer in each crop cycle is becoming a major challenge on various factors. Picking the reasonable fertilizer for the land and yield is an important and basic part of agriculture. Deciding the supplement levels in soil utilizing lab hardware can be restrictively costly, particularly in developing nations. The current frameworks on deciding soil nutrient substance and proposal for fertilizer isn't sufficiently proficient efficient enough. This paper introduces a compelling technique for estimation of nutrient dimension in soil and suggestion for appropriate fertilizer. The proposed methodologies comprise of four stages: soil analysis, data pre-processing, data analysis and Recommendation. The soil sample is analyzed using an IoT based device utilizing NPK sensor with two electrodes are set to calculate collect the NPK ratio of the soil nutrient and for pre-processing, the data gathered from sensors are figured into correct dataset and machine learning algorithm is utilized to recognize the reasonable fertilizer. This venture is extremely valuable to farmer to pick the right fertilizer toward the start of product cycle and amplify the yield.

### **6) In Year 2019,"Fertilizers Recommendation System For Disease Prediction in Tree Leave".**

**AUTHORS: R.Neela , P.Nithya.**

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.

### **7) In Year 2018," Soil Toxicity Prediction and Recommendation System Using Data Mining in Precision Agriculture".**

**AUTHORS: Mayuri Pawar, Geetha Chillarage.**

India is agricultural land. India ranks second worldwide in agriculture output, but GDP share is declining. There are many factors contribute for declining agriculture GDP which are inadequate irrigation, inadequate power supply, changing environmental conditions, conventional agricultural method etc. In this paper, the proposed system can help farmers by making them aware about their soil conditions. Farmers can maximize crops yield by knowing proportion of nutrients present in the soil. Soil toxicity

affects the soil nutrients which indirectly affects crops health. The proposed system predicts the level of toxicity present in the soil and makes farmer aware about it. Many farmers are depending on rainfall which is the one of the factor for poor growth and decreases crops yield. Thus the proposed system recommends the farmer about the crop, fertility of soil, level of toxicity and water supply. For this recommendation system, sensor's accuracy is very important as well as classification algorithm. For classification, decision tree J48 algorithm is used which is simple to implement and having more accuracy as compared with other classification algorithms. Issue of power supply can be overcome by using solar panel system.

## **8) In Year 2016,"Crop Recommendation System for Precision Agriculture".**

**AUTHORS:S.Pudumalar,E.Ramanujam,R.HarineRajashree,C.Kavya, T.Kiruthika,J.Nisha.**

Data mining is the practice of examining and deriving purposeful information from the data. Data mining finds its application in various fields like finance, retail, medicine, agriculture etc. Data mining in agriculture is used for analyzing the various biotic and abiotic factors. Agriculture in India plays a predominant role in economy and employment. The common problem existing among the Indian farmers are they don't choose the right crop based on their soil requirements. Due to this they face a serious setback in productivity. This problem of the farmers has been addressed through precision agriculture. Precision agriculture is a modern farming technique that uses research data of soil characteristics, soil types, crop yield data collection and suggests the farmers the right crop based on their sitespecific parameters. This reduces the wrong choice on a crop and increase in productivity. In this paper, this problem is solved by proposing a recommendation system through an ensemble model with majority voting technique using random tree.