M.Kumarasamy College of Engineering
NAAC Accredited Autonomous Institution
Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 Certified Institution
Thalavapalayam, Karur, Tamilnadu.

FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASES PREDICTION

TEAM ID:

PNT2022TMID15849

TEAM MEMBERS:

1. MANOJ S (927619BEC4117)
2. JAGADHEESH R (927619BEC4077)
3. KAVIBHARATH S N (927619BEC4094)
4. KAVIMANI P (927619BEC4093)

INDUSTRY MENTORS NAME:

1. SOWJANYA
2. SANDEEP DOODIGANI

FACULTY MENTOR NAME:

1. Dr. KARTHIKEYAN K

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.

LITERATURE REVIEW:

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.

AUTHOR: Stepien et al., 2013

DESCRIPTION: The authors highlighted the possibility of subdividing the area into smaller sub-areas, called management zones, each of them with homogeneous characteristics and, therefore, internally expressing similarity regarding the limiting factors of production. The use of management zones for site-specific fertilizer application requires measuring the spatial variability of nutrients, usually performed by soil sampling.

AUTHOR: Shivnath Ghosh, et al. 2014

DESCRIPTION: In this paper machine learning system is divided into three steps, first sampling (Different soil with same number of properties with different parameters) second Back Propagation Algorithm and third Weight updating.

AUTHOR: P.Vinciya, et al. 2016

DESCRIPTION: This paper mainly focused on analyzing the agriculture analysis of organic farming and inorganic farming, time cultivation of the plant, profit and loss of the data and analyzes the real estate business land in a specific area. This work goes for finding reasonable information models that accomplish a high precision and a high consensus as far as yield expectation abilities.

AUTHOR: Zhihao Hong, et al. 2016

DESCRIPTION: This paper proposes an information driven approach on structure PA answers for gathering and information demonstrating frameworks. Soil dampness, a key factor in the yield development cycle, is chosen for instance to exhibit the viability of our information driven methodology.

On the accumulation side, a responsive remote sensor hub is built up that expects to catch the elements of soil dampness utilizing soil dampness sensor. The prototyped gadget is tried on field soil to show its usefulness and the responsiveness of the sensors. On the information examination side, a one of a kind, site-explicit soil dampness expectation system is based over models produced by the AI procedures Support Vector Machine and Relevance Vector Machine. The structure predicts soil dampness n days ahead dependent on a similar soil and natural characteristics that can be gathered by our sensor web.

AUTHOR: Sabri Arik, et al.2016

DESCRIPTION: In this paper, we propose a method for predicting functional properties of soil samples from a number of measurable spatial and spectral features of those samples. The method used is based on SavitzkyGolay filter for pre-processing and a relatively recent evolution of single hidden-layer feed-forward network (SLFN) learning technique called extreme learning machine (ELM) for prediction.

AUTHOR: Vaneesbeer Singh, et al. 2017

DESCRIPTION: This work presents an approach which uses different Machine Learning techniques in order to predict the category of the yield based on macro-nutrients and micro- nutrients status in dataset. The dataset considered for the crop yield prediction was obtained from Krishi Bhawan (Talab-Tillo) Jammu. The parameters present in the data are Macro-Nutrients (ph,Oc,Ec,N,P,K,S) and Micro Nutrients(Zn,Fe,Mn,Cu) present in samples collected from different regions of Jammu District .After analysis Machine learning algorithms are applied to predict the category of yield . The category, thus predicted will specify the yield of crops. The problem of predicting the crop yield is formulated as Classification where different classifier algorithms are used.

AUTHOR: E.Manjula et al.2017

DESCRIPTION: This paper chooses Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur, Iron, Zinc, and so forth, nutrients for investigating the soil supplements utilizing Naïve Bayes, Decision Tree and hybrid approach of Naïve Bayes and Decision Tree. The performance of the classification algorithms are compared based on accuracy and execution time.

AUTHOR: Shukla et al., 2017

DESCRIPTION: Understanding and measuring spatial variability regarding the amount of nutrients available in the soil is crucial to defining site-specific fertilizer management strategies to increase production efficiency and sustainability of agricultural production. Therefore, management with the use of nutrients at a varying rate becomes a viable alternative to reduce the heterogeneity of soil attributes.

AUTHOR: Rohit Kumar Rajak et al. 2017

DESCRIPTION: This method is characterized by a soil database collected from the farm, crop provided by agriculture experts, achievement of parameters such as soil through soil testing lab dataset. The data from soil testing lab dataset given to recommendation system it will use the collect data and do ensemble model with majority voting technique using support vector machine and ANN as learners to recommend a crop for a site specific parameter with high accuracy and efficiency.