LITERATURE SURVEY ON AI BASED FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

ABSTRACT:

Agriculture is the most important aspect of the country's development. Many people make a living from agriculture, which is fully related to agricultural products. Plant diseases, especially on foliage, are one of the main factors in reducing both the quality and quantity of food crops. From an agricultural point of view, if the plant is affected by a leaf disease, it will reduce the growth of the agricultural level. Detecting the leaf disease plays an important role in agricultural conservation. The aim of the present work is to analyse the diseases of the plant by image processing methods and recommend the fertilizer for prevention and to get the right crop yield. This helps farmers increase their production rate.

INTRODUCTION:

Plant disease detection and machine learning detection is very efficient to provide symptoms for disease detection as early as possible. Plant pathologists can

analyse the digital images using digital image processing to diagnose plant diseases. The application of image processing and image processing strategies supports farmers in all agricultural regions. In general, plant diseases are caused by abnormal physiological functions of plants. Therefore, the characteristic symptoms are generated based on the distinction between normal physiological functionalities and abnormal physiological functionalities of the plants. Most often, the plant leaf diseases are caused by pathogens that reside on the stems of the plants. These different leaf symptoms and diseases are predicted in image processing. Through the use of AI technology, the image is analysed and processed, and the fertilizer needed for plant growth is predicted.

PROBLEM STATEMENT:

The main way of life of our country is agriculture. More than 70% of the livelihood of the population depends on agriculture. It is also a great source of the country's economy. In order to make this field more profitable for farmers, it is necessary to grow suitable crops on their fields. The predominant problem among farmers is the choice of crop depending on the soil of their arable land. Another challenge for farmers is choosing the right fertilizers for their crops, which plays a very important role

in getting a good and profitable yield. Another big issue that they need to pay more attention to is controlling pests or diseases that can limit plant growth. The problems listed above can be solved with the advanced techniques of precision farming and data mining.

AGRICULTURE:

Agriculture plays a significant role in the economic sector. Automation in agriculture is the main concern and emerging topic around the world. Artificial intelligence in agriculture has sparked an agricultural revolution. This technology has protected crop yields from various factors such as climate change, population growth, employment problems and food security issues.

AI protects the agricultural sector from various factors such as climate change, population growth, employment problems in this sector and food security. Today's farming system has reached another level thanks to AI. Artificial intelligence has improved crop production and real-time monitoring, harvesting, processing and marketing.

Various high-tech computer-based systems have been developed to determine various important parameters

such as weed detection, yield detection, crop quality and many more.

IMAGE PROCESSING:

The purpose of image pre-processing is to improve image statistics such that unwanted distortions are suppressed and image capabilities that may be relevant for similar processing are highlighted. The pre-processing takes an image as input and produces an output image as grayscale, an inverted and a smoothed.

DISEASES PREDICTION:

Leaves are attacked by bacteria, fungi, viruses and other insects. The Support Vector Machine (CNN) algorithm classifies the leaf image as normal or affected. Vectors are constructed based on leaf characteristics like colour, shape, textures. Then a constrained hyper plane is constructed to categorize the pre-processed leaves and also to implement a multi-class classifier to predict diseases in the leaf image with improved accuracy.

FERTILIZER RECOMMENDATION:

Recommend fertilizer for affected leaves based on severity. Fertilizers can be organic or inorganic. Admin can save. The fertilizers are based on disease categorization with degrees of severity. The measurements of the suggested fertilizers are based on the severity of the disease.

CONCLUSION:

The proposed method uses CNN to classify tree leaves, identify the disease, and suggest the fertilizer. The proposed CNN technique gives a better result. This method helps the user to know the types of diseases and other factors that affect plant growth, and the fertilizer recommended by the AI algorithm increases plant growth and increases production.