FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

LITERATURE SURVEY

INTRODUCTION:

Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Diseases in plants placed a major constraint on production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases in plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques. An automated system is introduced to identify different diseases in plants by checking the symptoms shown on the leaves of the plant. Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases.

LITERATURE SURVEY 1:

TITLE AND AUTHOR:

User-centered design of fertilizer recommendation System for smallholder farmers By Nikil Malla Reddy in the year 2018.

TECHNIQUE USED:

Site-specific nutrient management (SSNM).

PROBLEM STATEMENT:

Soil health is a major problem in India. Imbalanced fertilizer usage and a negative consumption of fertilizer cause severe soil damage and plant death.

PROS:

- Using the SSNM technique soil type has been identified and proper fertilizer has been recommended for soil and plant.
- It increases productivity.

CONS:

- Lack of soil testing services.
- Poor soil health due to low fertilizer use.
- Excess fertilizer causes effects on the environment.
- Most farmers are not aware of such techniques.

LITERATURE SURVEY 2:

TITLE AND AUTHOR:

Harithm: a plant diseases identification system BY Joseph Jose, Hima Jayachandran Anna Sajji George, Jiya.S, dr. Anju Pratap in the year 2019.

TECHNIQUE USED:

Diseases identification technique, soil fertility analysis. Soft computing-based diagnostic method.

PROBLEM STATEMENT:

It was mainly developed for the Kerala region because there they have high-level pests and pathogens. By knowing this we can easily cure diseases on plants.

PROS:

- Early detection of diseases and curing them.
- It lists out symptoms of diseases that had affected the plant.
- By controlling diseases crop quantity increases and the economy increase.

CONS:

- Main cons of this are, it was developed only for a particular state and it cannot be used by other states' farmers.

LITERATURE SURVEY 3:

TITLE AND AUTHOR:

Plant leaf diseases classification and detection system using machine learning by G. Geetha, S. Samundeshwari, G. Saranya, k. Meenakshi, M. Nithya in the year 2020.

TECHNIQUES USED:

Genetic algorithm, fuzzy logic, ANN, Naïve Bayes algorithm, and HOG.

PROBLEM STATEMENT:

Among agricultural products, tomato is one of the most used, preventing significant loss in quantity and yield of tomato loss because of diseases and identifying drawbacks in a tomato plant, and classifying and detecting diseases.

PROS:

- Daily usage vegetables mainly tomatoes are getting affected by disease and there is a way to cure the diseases.
- It classifies the type of diseases and detects diseases.

CONS:

- Only tomato plant has been detected and the disease is classified.

LITERATURE SURVEY 4:

TITLE AND AUTHOR:

Plant disease identification using CNN. By Mustafa Abdo Mohammed Alhammadi, prof. Amol Ashok Bhilare in the year 2021.

TECHNIQUE USED:

CNN

PROBLEM STATEMENT:

If the leaf of plants in an area had been infected or attacked by some disease, the other areas will also be exposed to be infected. It will decrease leaf yield and it also reduces farmer income.

PROS:

- Low cost.
- Low power consumption.
- High accuracy the sensor has excellent sensitivity with a quick response time.

CONS:

- It only tells about diseases but not about prevention.

LITERATURE SURVEY 5:

TITLE AND AUTHOR:

Farmer assistant - a machine learning based application for agricultural solution by Shloka Gupta, Nishit Jain, Akshay Chopade, Aparna Bhonde in the year 2022.

TECHNIQUE USED:

Decision tree, naïve bayes, SVM, random forests, XG boost. Accuracy : 99%.

PROBLEM STATEMENT:

Farmers face several challenges when growing a plant. Improper security may cause lots of challenges to agriculture.

PROS:

- Farmers get very much useful while using this application.
- They get everything regarding their need for plant growth.
- Especially it predicts disease and recommends fertilizer for crop productivity.

CONS:

- Most of the farmers are not aware of such applications like farmer assistant.