

LITERATURE SURVEY

In order to become familiar with background, a literature survey was conducted. From this survey, previous work was studied carefully. Number of Research paper are available based on our project.

Authors: Taranjeet singh, Saurabh anand, Anmol sehgal, Siddhesh mahajan, prof. Pranoti kavimandan proposed the literatures on fertilizer recommendation system for disease prediction. They mainly uses Machine Learning classification algorithm to predict suitable crops based on the values we get from our device and we will also provide suitable fertilizers required for that land. We believe this will help the farmers in producing greater yield of crops and crop damage can also be prevented to a larger extent.

This system is used to determine the nutrient quantity of soil through NPK Ratio and predict various diseases crops may be infected with. As we know all the nutrients present in the soil but what amount of nutrients are present in the particular field. Every soil has different micro nutrient. But to measure the amount of nutrient available in the soil we are going to design a device which will give proper reading of the micro nutrient and that can be used to predict crops, fertilizers and crop diseases.

Following are the main objectives of this system :

Design and develop a micro controller-base sensor interfacing for reading soil parameters (NPK value). Converting the sensor value which in analog signal to digital signal for further processing sending all reading to system using USB ports available. Developing website application for displaying the result and generating the report.

The main goals of this paper is to performs:

1.CROP RECOMMENDATION: - The NPK value of the soil is calculated using the pH value supplied from the instrument. An API is used to collect temperature and humidity. The pH value, NPK value, temperature, humidity, and rainfall are the characteristics that are used to forecast the best crop to grow in a given place. The crop is predicted using a machine learning model called XG Boost, which has a 99 percent accuracy rate.

2.FERTILISER RECOMMENDATION: - Based on the NPK value acquired from the device for a certain soil, a suitable fertilizer is advised for the crop. Proper recommendations for increasing soil fertility are presented (NPK).

3.DISEASE DETECTION: - The visual data collected from the user is used to detect crop-based illnesses. Deep learning techniques and CNN models are used to forecast if the crop is affected with which disease, and a viable remedy is then offered to the user.

In this system the micro-controller device is connected to the system through USB ports available and transmits the

data from the device to the system. The result is generated from the received data and suggestions are given. In this paper, we are obtaining adequate findings for proper crop production and fertilizer to recommend to farmers for crop cultivation. The disease detection tool also provides the finest advice for recovering from crop disease, ensuring that the crop or specific land is not ruined and that soil fertility and crop yield are increased.

The Several prototypes have been suggested in this sector that are assisting in the resolution of agricultural challenges. A comparable model is presented and the principle is partly similar, but we tried to cut the cost substantially, and our model's accuracy is also higher due to the usage of the XG Boost model. Our system also has certain extra characteristics, such as crop disease prediction, which has boosted our project and has significant promise in tackling important agricultural concerns.

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