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A REVIEW ON CROP FIELD MONITORING AND DISEASE DETECTION OF UNHEALTHY PLANTS USING IMAGE PROCESSING

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Abstract - *India is always have been an agriculture country.More than seventy five percent of global income is dependent on farming.Most of our country's revenue is by exporring friuts and vegetables across the world.In such case our farmers should improve their methods for faster and efficient after farming results also the diseases to the crop plants need to be observe keenly to get proper cure on time.We are designing a system which detects the disease through image processing and gives the proper solution to that using our algorithms. This automation system also senses the conditions and gives decision on which crop is better siuted for that soil.In this way the farmers will able to have better techniques which will increase their production with reduction of work load and accuraccy and effiency.*

***Key Words*: Image Processing, Web Mining, Data Mining.**

LITERATURE SURVEY

In this paper , authors proposed a data mining techniques which used to give agriculture related advice. According to this smart agro system there were three parts of system in which firstly system predict the crop according to soil and then give basic information of crops and agriculture. System also give an information of management of crops, fertilizer, soil water level and diseases. To classify a users inputs and attribute values system uses a decision tree algorithm and if-else looping statements logic. The main use of decision tree.[1]

IOT is a domain which used in many number of sectors to make human works suitable. According to this paper, IOT is suitable in smart agriculture system also. Using IOT device this system calculates an moisture, humidity of soil. In this system, all collected data are sent to server and according to that notifications are provided to farmers. In this IOT based system, data calculated from sensors like Soil moisture Sensor which also called Ph sensor. Secondly, DHT11 Temperature and humidity Sensor which calculate temperature and humidity of atmosphere. Light Dependent Resistor is one type of sensor used in system. This system may useful in area were water is not available in efficient quantity.[2]

In this research paper, we studied that how the image will matches with stored database image/picture.Some image processing techniques are applied to acquired image to extract useful features which are necessary for further process. Firstly, RGB image of leaves is converted to HSI (Heu Saturation Intensity) form. In this we identify mostly green color pixels and based on that compute the intensity of pixel. Then the affected area of leaf is extracted through segmentation. And then based on pixel count images are matches and we can able to detect the affected area.[3]

In this paper authors gives detailed information about the system that how it recommends crop and takes decision of fertilizer.Testing soil quality, moisture and accordingly balance fertilizers is important technique of agriculture. In this paper the information of various types of soil are stored in database. The nutrient balance model component and fertilization decision making model were designed by componentware technology and implemented the online soil nutrient management & decision making of fertilization system. Farmers get information of crop, soil & required fertilizers. System provides online soil query & fertilizer recommendation facility.[4]

In this paper authors have given the detailed discription about the system how image processing relay on the study of leaf.In this paper authors purposed in deep about structure of leaf also the different parts in leafs ,the structure of leaf and the texture of leaf.The method of image processing in this paper is for plant recognization , it will extract the input plant image after segmentation and detects the areas of the plants.The parts like leaf colour,leaf textures,the leaf stem,the size of stem and the leaf apex is also studied in this paper.**[5]**

PROPOSED SYSTEM

The motive of this project is that we are using the sensor technology in agriculture to reduce some traditional techniques. Sensors are the device that are use to sense some particular parameters of the surrounding. This sensors gives the very accurate output according the sensing capability.

In this project there is use of soil moisture sensor, soil PH sensor and atmosphere pressure sensor.

INTRODUCTION

Agriculture is latin word where agri means field and culture means the cultivation. Agriculture includes the cultivation as well as the production of crops.

India is land of agriculture where farmers are the backbone of the country. We all depends on farmers to fulfill our basic requirements. Crops disease plays a vital role in field of agriculture. This diseases are the big curse for the farmers as their income is totally depends on cultivation of crops. There are various types of diseases that affects the leaves such as bacterial, fungi and viruses etc. The infected parts of leaves must be monitored to increase the crop yields. Therefore,

detection and classification of particular leaf must detect as early as possible.

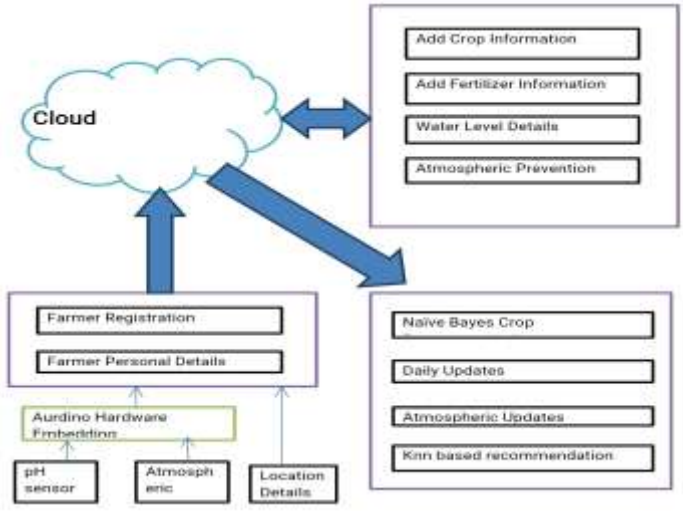
The accurate disease of particular leaf will not be totally solved by observation of experts .This technique will increase the farms cost and result will be not as much as accurate. Most of the farmers are illiterates, they are not aware about how to contact long distance living experts so this task is time cosuming. If crop disease is not monitored properly or there will be delay while detecting the diseases on leaves then serious problem will be occurred.

So we have introduced a system that will surely identify the defected leaves by using the image processing and also providing the solution to the particular crops. Image processing technique is used for fast and high accurate detection of disease.

Data mining technique is used where all the relevant data will be stored so that the recommendation will be given to the farmers. Solution will be in the terms of pesticides and fertilizers.

Web mining techniques is introduced where the farmers will get notification of daily bazaar bhav of near by region so that there will be increase in crops yields.

SYSTEM ARCHITECTURE



- Farmer registration : Here farmer will register himself by creating username and password.
- Farmer personal details: Farmer will fill his/her details such as name, area, contact no. etc
- Aurdino Hardware: This hardware is used connect the sensors and the android phone.
- Cloud: It is used to stored the real time data that the admin will add to store. Crop information , fertilizer information, etc will be stored in th cloud database.

CONCLUSIONS

In this paper, we studied a existing system related to smart agriculture. As we see that their were use of many technologies like data mining, Image processing and IOT in huge amount in most of fields. So we try to learn this technologies to establish agro system.Here we try to find diseases of unhealthy plants using image processing on leaves. Also we provide a mobile app facility which is easy to use.

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