"Detection and Diagnosis of Diseases in Cotton Leaf Using Knowledge Based Expert System"

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Abstract - The economy of India is based on agriculture as it is the backbone of the rural livelihood security system. The cotton is mostly used by world and grown in more than 100 countries accounting for 40% than any other fiber of the world fiber market. As managing diseases in cotton crop is a challenging task and cotton crop production in India is important.This propose system focuses on maximizing the cotton crop production, this is the main purpose of this project.

Sometimes farmers identify diseases by their experiences with the naked eyes and due to incorrect identification, there will be the possibility incorrect control measurement. By using this propose system farmers can identify cotton crop diseases in early stages & also they are known to the particular diseases of cotton crop. The system is specially proposed for the controlling the diseases in cotton plant. Here the system is consisting of the Knowledge Based Expert System and the inference engine. The inference engine applied logical rules to the knowledge base and obtain the result for detection of diseases.

I. INTRODUCTION

The project work as like expose the automatic detection of disease of diagnosis cotton leaf. Cotton is one of the major domains in agriculture which decides economic of india. However there are certain issues with field crop like to identify deficiency of nutrition in plants, to identify various diseases, various pests which affect crops. Every issue has an important. Among one is detection of pests so that proper action should be taken to control in leading to minimize loss. farmer's get correct information about particular leaf disease which type of pesticide will be found in the cotton leaf.

In India sixty percent people work in agriculture field and cotton mostly found farmer knowledge is best in agriculture but they will not known about disease which type of disease are found in particular leaves. When any of such a condition occurs then farmers aware about the pest, then they can take correct action and control the situation but if farmers does not have correct knowledge, then misidentification of any pests can be possible and incorrect controls measure like non-affecting pesticides can be used leading to wasting of work and money and most importance it may lead to serious problem to crops. eradication of weed hosts carrying this disease.

II. LITERATURE SURVEY

N. Satya Priya, E.Nivetha & Rashmita Khilar proposed a system to detect abnormality in lemon leaf ,identify all major citrus diseases and notifies the stage of the disease to the farmer. The system is based on gradient boosting that gives an accurate feature extraction and SVM that gives effective comparison between the image-under-test and the one stored in database.

P.R.Rothe & K.V.Khirsagar proposed a system of leaf diseases on cotton plant must be identified early and accurately as it can prove detrimental to the yield. This paper work presents a pattern recognition system for identification and classification of three cotton leaf diseases. The three dideases are Bacterial Leaf Blight (Angular Leaf Spot) of Cotton, Alternaria, Fusarium wilt. D Monga, P K Chakrabarty and K R Kranthi describes that cotton leaf curl virus disease (CLCuD) is caused by a single stranded circular Gemini virus and transmitted by white fly (Bemisia tabaci) is an important problem of northern cotton growing region of India. Cotton leaf curl virus disease need to be dealt more seriously in the context of changed scenario leading to the development of recombinants and breakdown of resistance. The effective management of this important disease is possible by development of resistant varieties, suppression of whitefly and eradication of weed hosts carrying this disease.

Dheeb AI Bashish,Malik Braik and Suliemam Bani-Ahmad paper works to design, implement and evaluate an image processing based software solution for automation detection and classification of plant leaf diseases. There are four phases used in this paper, phase

one creates a color transformation for the RGY leaf image, phase two clustering technique, another phase calculates texture feature and in last phase it extracted features are passed through a pre-trained neural network. Ajay A. Gurjar, Viraj A. Gulhane proposed an approach that regularizes and extracts eigen feature from cotton leaf image. This paper presents a approach for cotton leaf image eigen feature regularization extraction. Image space spanned by the eigen vectors of the within class scatter matrix is decomposed into three subspaces. Eigen features are regularized differently in these subspaces. Feature extraction and classification could be the last stage.
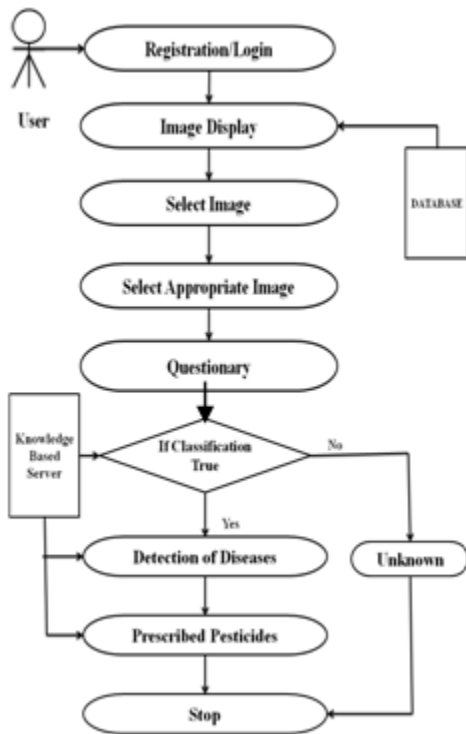
III. PROPOSED SYSTEM

Fig : 1.0

This system will provide all the information about diseases & pesticides with the help of symptoms. The login asks for the user at the first time when it starts. After giving correct user id & password then the user will enter in the system. Once the user does the registration , that person is provided with the user id and password. So that it can be used for login whenever necessary. After login the system the user will able to see the images related to the cotton plant disease. This image are provided from the database. The user can identify that

particular disease which he/she have seen on the plant easily with the help of the displayed images.

Now the user will have to select a proper image from the displayed images which are shown by the system. The user will see the plant disease through naked eye and identify a proper image for it.

The panel will show multiple images for the selected image so that the user will have appropriate image. The user select this appropriate image and then symptoms will show for that disease.

The proposed system will display several symptoms and the user will choose appropriate symptoms for the particular detection of that particular disease.

A knowledge base system is used by this system. The selection of symptoms will be fetched by the knowledge base system.

The knowledge base system will calculate the exact detection of disease with the help of algorithms and mathematical expression.

After the classification is done by knowledge base system it will give the detection of disease and prescribe pesticide for the cotton plant disease. Thus the system gives all information about the cotton plant disease.

IV. CONCLUSION

New pesticides for the disease control can be used by the multinational pesticides companies from thus system. Under the agriculture ministry government can use this system for the concept of " Digital India" & the good will of farmers. In the cotton crop, the future research & development work can be carried out from the database of system. The productivity of crop maximizes & improvement of crop for the farming community's economy is achieved from the system. This system gives fast, automatic, less expensive & accurate method to detect plant disease.

This system is based on knowledge base server & inference engine. The system is efficient, easier, accurate, fast with complete automation & notification of disease. It is very helpful for preventing the disease from spreading the cotton plant disease at an early stage.

REFERENCES

1.   P.R.Rothe & K. V. Kshirsagar "Cotton Leaf Disease Identification using Pattern Recognition Techniques",2015.

2.   N. Satya Priya, E.Nivetha & Rashmita Khilar "Efficient Knowledge Based System to Detect Diseases in Lemon Leaf",2016.

3.   D Monga, P K Chakrabarty and K R Kranthi "Cotton leaf curl virus disease in India-Recent status and management   strategies" ,2012.

4.   Dheeb AI Bashish, Malik Braik and suliemam Bani-Ahmad "Detection & Classification of Leaf Diseases using K-means-based Segmentation & Neural-networks-based Classification",2011.

5.   "Disease Detection On Cotton Leaves by Eigen feature Regularization and Extraction Technique"