

# Disease Prediction As Per Weather Condition And Market Analysis

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**Abstract - Data mining and Machine Learning is an emerging field of research in Information Technology as well as in agriculture. Agrarian sector is facing rigorous problem to maximize the crop productivity. The present study focuses on the applications of data mining techniques in crop disease prediction in the face of climatic change to help the farmer in taking decision for farming and achieving the expected economic return. The Crop disease prediction is a major problem that can be solved based on available data. Data mining techniques are the better choices for this purpose. Different Data Mining techniques are used and evaluated in agriculture for estimating the future year's crop production. The main purpose of the system is for social use. Farmer has to face many problem's like Lack of knowledge, Manures, fertilizers and Agriculture marketing etc.**

**Present technique SAR Tomography takes the images and provides the different development stages of crop. This system not give the fertilizers and precautions to the farmer . This paper gives brief analysis of crop disease prediction using k Nearest Neighbor classification technique and Density based clustering technique for the selected region. The patterns of crop production in response to the climatic (rainfall, temperature, relative humidity and sunshine) effect across the selected regions are being developed using k Nearest Neighbor technique. Thus it will be beneficial if farmers could use the technique to predict the future crop productivity and consequently adopt alternative adaptive measures to maximize yield if the predictions fall below expectations and commercial viability.**

**Index Terms - Data mining, Machine Learning, Classification, Clustering.**

## I. INTRODUCTION

Crop prediction is the art of predicting crop yields and production before the harvest actually takes place, typically a couple of months in advance. Crop forecasting relies on computer programs that describe the plant environment interactions in quantitative terms. The soil testing program starts with the collection of a soil sample from a field. The first basic principle of soil testing is that a field can be sampled in such a way that chemical analysis of the soil sample will accurately reflect the field's true nutrient status. The purpose of soil testing in high-yield farming is to determine the relative ability of a soil to supply crop nutrients during a particular growing season, to determine the needs, and for diagnosing problems such as excessive salinity or alkalinity. Soil testing is also used to guide nutrient management decisions related to manure and sludge application with the objective of maximizing economic/agronomic benefits while minimizing the potential for negative impacts on water quality. Data Mining is a process of extracting hidden information from a database and transforms it into an understandable structure for further use. It is the computational process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems. The ultimate goal of data mining is prediction - and predictive data mining is the most common type of data mining and one that has the most direct business applications. Throughout the years, many algorithms were created to extract knowledge from large sets of data. There are several different methodologies to approach this problem: classification, association rule, clustering, etc. Here we will focus on classification methodology. Classification techniques are designed for classifying unknown samples using information provided by a set of classified samples.

This set is usually referred to as a training set, because, in general, it is used to train the classification technique how to perform its classification. The classification task can be seen as a supervised technique where each instance belongs to a class, which is indicated by the value of a special goal attribute or simply the class attributes. Classification routines with data mining use a variety of algorithms and the particular algorithm used can affect the way records are classified. This work talks about Decision Tree classifier assumes that the presence (or absence) of a particular feature of a class is unrelated to the presence (or absence) of any other feature. Depending on the precise nature of the probability model, K Nearest Neighbor (kNN) and Density based clustering can be trained very efficiently in a supervised learning setting.

## II. RELATED WORK

### A. Problem Statement

Data mining is an emerging field of research in Information Technology as well as in agriculture. Agrarian sector in India is facing rigorous problem to maximize the crop productivity. The present study focuses on the applications of data mining techniques in yield prediction in the face of climatic change to help the farmer in taking decision for farming and achieving the expected economic return. The problem of yield as well as disease prediction is a major problem that can be solved based on available data. Hence, we proposed a system Prediction of "Disease Prediction as per Weather Condition".

### B. Goals & Objectives:

- To predict whether before sowing crop.
- Prediction the disease before the sowing crop (using the weather condition)
- To provide precaution and fertilizer recommendation.
- To analyze the disease at post condition using SIFT algorithm.
- To reduce productivity/production cost and increase income.
- To reduce fertilizers on crop.

## III. PROPOSED WORK

The preparation of soil is step one before developing a crop. One of the maximum crucial responsibilities in agricultural is to show the soil and unfasten it. This permits the roots to penetrate deep into the soil. The loose soil permits the roots to respire effortlessly even if they go deep into the soil. The loosened soil facilitates in the increase of earthworm and microbes' gift inside the soil. Those organisms are pals of the farmer when you consider that they in addition turn and free the soil and upload humus to it.

Here we're the usage of sensors values like soil moisture sensor, temp sensor, humidity. In this work the experiments

are done crucial and widely known type algorithms ok Nearest Neighbour (kNN) and Density based clustering are implemented to the dataset. There accuracy is acquired by comparing the datasets. Every set of rules has been run over the training dataset and their overall performance in phrases of accuracy is evaluated together with the prediction executed inside the trying out dataset. The entire analysis method creates a fact go with the flow.

### A. SYSTEM ARCHITECTURE:

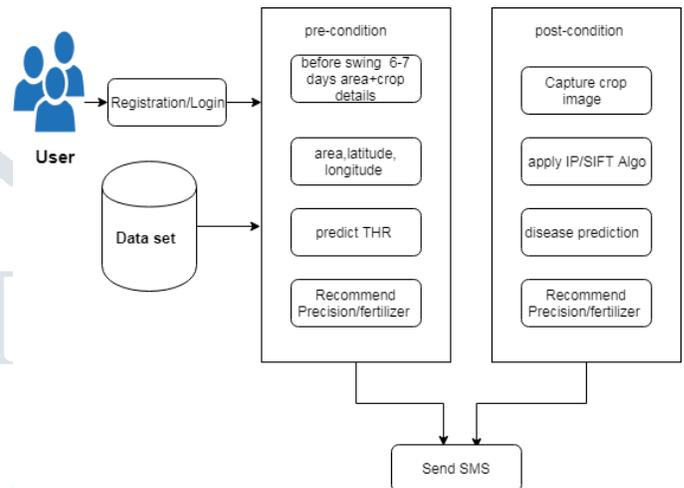


Fig. 1: System Architecture

### B. SYSTEM REQUIREMENTRS

#### Hardware Requirements Specification:

There should be required devices to interact with software.

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Ram : 256 Mb.

#### Software Requirements Specification:

- Operating system : Windows XP/7.
- Coding Language : JAVA
- IDE : Java eclipse
- Web server : Apache Tomcat 7.

## IV. CONCLUSION

This machine focuses on developing automated leaf sicknesses. It saves time and effort, on this undertaking; we've got proposed a new method for prediction of crop ailment from modern-day weather the use of Google API with the help of k-NN set of rules and measuring the crop sicknesses of the crop item and locate climate prediction.

In this work the experiments are achieved two essential and widely known category algorithms k-Nearest Neighbour (k-NN) and Density primarily based clustering are applied to the

dataset. There accuracy is received through evaluating the datasets. Every set of rules has been run over the schooling dataset and their performance in terms of accuracy is evaluated at the side of the prediction completed in the trying out dataset. The complete analysis procedure creates a data flow.

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