Agricultural Crop Recommendations based on Productivity and Season

ABSTRACT

As a coastal state, Tamil Nadu faces uncertainty in agriculture which decreases its production. With more population and area, more productivity should be achieved but it cannot be reached. Farmers have words-of-mouth in past decades but now it cannot be used due to climatic factors. Agricultural factors and parameters make the data to get insights about the Agri-facts. Growth of IT world drives some highlights in Agriculture Sciences to help farmers with good agricultural information. Intelligence of applying modern technological methods in the field of agriculture is desirable in this current scenario. Machine Learning Techniques develops a well-defined model with the data and helps us to attain predictions. Agricultural issues like crop prediction, rotation, water requirement, fertilizer requirement and protection can be solved. Due to the variable climatic factors o f the environment, there is a necessity to have a efficient technique to facilitate the crop cultivation and to lend a hand to the farmers in their production and management. This may help upcoming agriculturalists to have a better agriculture. A system o f recommendations can be provided to a farmer to help them in crop cultivation with the help o f data mining. To implement such an approach, crops are recommended based on its climatic factors and quantity. Data Analytics paves a way to evolve useful extraction from agricultural database. Crop Dataset has been analyzed and recommendation o f crops is done based on productivity and season***.***

**EXISTING SYSTEM**

* Many crop prediction yield models have been developed. Clustering approaches such as k-means, kmeans++ are used to perform grouping o f data as clusters to predict crop yield is used [1]. Tripathy et al., [2] provided a system to have management of pesticides for crop cultivation using data mining process.
* Essential parameter for agriculture analysis is nature o f soil. Diverse varieties o f soil are available in this India. Crops are cultivated depending on the type of soil in the land. The role of soil in improving crop cultivation is discussed [3]. Data mining techniques are applied to analyze the soil parameter.
* JRip, J48 and Naive Bayes techniques are applied [4] w hich produces more reliable results in analyzing red and Black soil. Impact of parameters o f agriculture in crop management is studied to improve productivity [5]. Neural networks, soft computing, big data and fuzzy logic methods are being used to examine the agricultural factors.
* Pritam Bose [6] developed a SNN model to have a spatiotemporal analysis w ith crop estimation. An automatic system to gather the information about soil nature, weather conditions was developed [7] with clustering techniques to extract the knowledge and use it by farmers in crop cultivation.

Disadvantages

1. An existing system’s recommendation is based on soil and not based on Cr o p Recommendation Based on Production.
2. Farmers will be given recommendation by considering not the season of crop production.

**PROPOSED SYSTEM**

Prediction o f crops was done according to farmer’s experience in the past years. Although farmer’s knowledge sustains, agricultural factors has been changed to astonishing level. There comes a need to indulge engineering effect in crop prediction. Data mining plays a novel role in agriculture research [11]. This field uses historical data to predict; such techniques are neural networks, K-nearest Neighbor. K-means algorithm does not use historical data but predicts based on-computing centers o f the samples and forming clusters. Computational cost of algorithm acts as a major issue. Use of Artificial Neural Network is a boon to agriculture field which computes accurately even with more input. An architecture developed in [11] uses input; selects needed features; classification and association rule mining is applied and visualized.

Bangladesh has its high production as rice. Statistical Methodologies has been used to predict its crop production. Shakil Ahamed [12] applied clustering and classification techniques on 15 districts of Bangladesh to recommend for yield and planting of crops. Factors implementing crop yield were considered. They are

a. Environmental factors-rainfall, humidity, Minimum and maximum temperature

b. Biotic factors-soil pH and salinity

c. Area factors-irrigated or cultivated

**Advantages**

1) Recommendation system acts as a good engine to provide suitable items to users considering other factors. This is extended to have its support to agricultural sector

2) An exact recommendation based on Recommend based on production.

**SYSTEM REQUIREMENTS**

➢ **H/W System Configuration:-**

➢ Processor - Pentium –IV

➢ RAM - 4 GB (min)

➢ Hard Disk - 20 GB

➢ Key Board - Standard Windows Keyboard

➢ Mouse - Two or Three Button Mouse

➢ Monitor - SVGA

**SOFTWARE REQUIREMENTS:**

* **Operating system :** Windows 7 Ultimate.
* **Coding Language :** Python.
* **Front-End :** Python.
* **Back-End :** Django-ORM
* **Designing :** Html, css, javascript.
* **Data Base :** MySQL (WAMP Server).