

## **LITERATURE SURVEY:**

Literature Survey Agricultural crop recommendation systems are available in the market which consider various parameters like weather at the time the crop is to be planted, soil type, topography of the region, temperature and rainfall in the region, market prices of the crop, crop duration, etc. Research has been carried out in this field and the following papers have been referred for the purpose of research and study.

### 1) Author: Prof.Rakesh Shirsath

- Proposed a system which helps the users to make decisions regarding the crop to be planted.
- The system used is a subscription-based system which would have personalized information of every farmer registered.
- The system includes a module which maintains the information of the previous crops planted collected from various sources and shows a matching crop that can be planted.
- The whole process is done with the help of artificial neural networks.
- At the end a feedback system is provided so that the developer can make changes required if the farmer finds some difficulty while using the system.

### 2) Author: Ji-chun Zhao and Jianxin Guo

- Big Data Analysis Technology Application in Agricultural Intelligence Decision System paper considers knowledge database as big data and inferences from the data is drawn.
- It considers various modules like users, knowledge engineer, domain expert, man-machine interface, inference engine and knowledge base.
- The knowledge acquisition system obtains knowledge for the decision system and establishes an effective knowledge base to solve the problem.
- The paper uses various Hadoop modules for the purpose of feature extraction. It uses the unstructured data and processes it using NoSQL, Hive, Mahout and uses HDFS to store the data.

### 3) Author:RSF

- The data was just presented for wheat crop and other crops were not considered.
- It is a recommendation system for farmers which considers a location detection module, data analysis and storage module, crop growing database, physiographic database.

- The similar location detection module identifies the locations which are similar to the user's locations and checks the similar crops that are planted in those locations.
- Accordingly, using similarity matrix, the recommendations for the user is generated.
- Location detection module uses the Google API services to get the current location of the user to identify the similar locations. But the system does not get user feedback to improve the process.

4) Author: S.Pudumalar

- The system uses an ensemble technique called Majority Voting Technique which combines the power of multiple models to achieve greater prediction accuracy.
- The methods used are Random Trees, KNN, CHAID and Naïve Bayes for ensemble so that even if one method predicts incorrectly, the other models are likely to make correct predictions and since the majority voting technique is used, the final prediction is correct one.
- If-then rules are the main components which are used in the prediction process. The accuracy obtained is 88% using the ensemble model.

5) Author: Yogesh Gandge, Sandhya

- It was observed that Multiple Linear Regression gave an accuracy of 90-95% for rice yield. Decision tree using ID3 algorithm was considered for soybean crop and the recommendations were generated.
- The third algorithm was SVM which was used on all the crops and the accuracy was good with computationally less requirements.
- Neural network was used on corn data to achieve 95% of accuracy.
- Other algorithms were also used which are KNN, C4.5, K-means, J48, LAD Tree and Naïve Bayes.