ESTIMATE THE CROP YIELDING DATA ANALYTICS

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INTRODUCTION

Agriculture forms the basis for food security and hence it is important. In India, majority of the population i.e., above 55% is dependent on agriculture as per the recent information. Agriculture is the field that enables the farmers to grow ideal crops in accordance with the environmental balance. In India, wheat and rice are the major grown crops along with sugarcane, potatoes, oil seeds etc. Farmers also grow non-food items like rubber, cotton, jute etc. More than 70% of the household in the rural area depend on agriculture. This domain provides employment to more than 60% of the total population and has a contribution to GDP also (about 17%) [1]. In the farm output, India ranks second considering the world wide scenario. This is the widest economic sector and has an important role regarding the framework of socio-economic fabric of India. Farming depends on various factors like climate and economic factors like temperature, irrigation, cultivation, soil, rain fall, pesticide and fertilizers. Historical information regarding crop yield provides major input for companies engaged in this domain.

These companies make use of agriculture products as raw materials, animal feed, paper production and so on. The estimation of production of crop helps these companies in planning supply chain decision like production scheduling. The industries such as fertilizers, seed, agrochemicals and agricultural machinery plan production and activities like marketing based on the estimates of crop yield.

Farmers experience was the only way for prediction of crop yield in the past days. Technology penetration into agriculture field has led to automation of the activities like yield estimation, crop health monitoring etc. Crop yield prediction has generated a lot interest in the research community and also or agriculture related organizations.

OBJECTIVE

- Agriculture is important for human survival because it serves the basic need. A well-known fact that the majority of population (≥55%) in India is into agriculture.

- Due to variations in climatic conditions, there exist bottlenecks for increasing the crop production in India. It has become challenging task to achieve desired targets in Agri based crop yield.

- The use of Technology in agriculture has increased in recent year and data analytics is one such trend that has penetrated into the agriculture field.

- Various factors are to be considered which have direct impact on the production, productivity of the crops

LITERATURE SURVEY – 1

TOPIC : A Survey on Crop Yield Prediction based on Agricultural Data

AUTHOR : Dhivya B H

OVERVIEW :

- Presented a survey on the different algorithms applied in the assessment and prediction of crop yield Discussed about the mechanism of knowledge the discovery in Agricultural data mining

ADVANTAGES :

- The high yield crops give better response to fertilizers and thus, their production rate increases substantially
- Most of the high yield crops are dwarf and hence, their plants are stronger and can withstand strong winds

DISADVANTAGES :

- With the changing of climate, agriculture faces increasing problems with extreme weather events leading to considerable yield losses of crops

LITERATURE SURVEY – 2

TOPIC : A Study on Various Data Mining Techniques for Crop Yield Predication

AUTHOR : Yogesh Gandge

OVERVIEW :

- Discussed various data mining techniques employed for predicting the crop yield and signifies the importance of accurate data extraction methods of big data analytics.

ADVANTAGES :

- Predicting a crop well in advance requires a systematic study of huge data coming from various variables like soil quality, pH, EC, N, P, K etc.

- As Prediction of crop deals with large set of database thus making this prediction system a perfect candidate for application of data mining

DISADVANTAGES :

- The Difference in Growing conditions.
- Requires More Knowledge and Skills

LITERATURE SURVEY – 3

TOPIC : A Study on Crop Yield Forecasting Using Classification Techniques

AUTHOR : Sujatha R

OVERVIEW :

- Discuss the importance of comparing previous agricultural data with present to identify optimum condition favor enhanced crop yield. Envisaged the importance of best crop selection depending on the season and the climatic factors which supports enhanced crop yield

ADVANTAGES :

- Predicting crop yield is crucial to addressing emerging challenges in food security, particularly in an era of global climate change.
- Accurate yield predictions not only help farmers make informed economic and management decisions but also support famine prevention efforts

DISADVANTAGES :

- Improper Implementation Can Cause Much More Harm Than Good

LITERATURE SURVEY – 4 :

TOPIC : The use of satellite data for crop yield gap analysis

AUTHOR : David B

OVERVIEW :

- Discussed the use of remote sensing technology to identify and measure the causes of yield gaps and the assess the impact on the overall crop yield. Reported very simple methodologies to measure the yield difference with respect to season, environment and the land use.

ADVANTAGES :

- Soil fertility is one of the most important factors in crop production

- It has the ability to support crop production determined by the entire spectrum of its physical, chemical and biological attributes.

DISADVANTAGES :

- To the extent that intensification results in an expansion of land under production, it will generally have negative impacts on the environment owing to habitat loss, GHG emissions, and changes to local hydrology and ecosystems