ESTIMATE CROP YIELD USING DATA ANALYTICS

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CROP YIELD ESTIMATION USING DATA ANALYTICS AND MACHINE LEARNING

Krisnawijaya, Ngakan Nyoman Kutha, et al. "Data analytics platforms for agricultural systems: A systematic review." Computers and Electronics in Agriculture 195 (2022): 106813.

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

- Due to changes in climatic conditions, there is a slow down in progress for increasing the crop production in India.It has become challenging task to achieve desired targets in agriculture based crop yield.

- With the reduction of availability cultivable land around the globe and the decreased cultivable water resources, it is becoming impossible to achieve higher crop yield.

- Not only water resources but also Various seasonal, economical and environmental factors influence the crop production, drastic changes in these factors lead to a great loss to farmers.

- These risks can be measured using data analytics and machine learning which are applied on data related to soil, weather and previous yield.

- With the help of data analytics, crop yield can be predicted by deriving useful insights from these agricultural data that helps farmers to decide the crop they would like to plant for the forthcoming year leading to maximum profit

- data analytics is one approach to have a important role and positive impact on the increase of crop yield by providing the optimum condition for the plant growth and decreasing the yield gaps and the crop damage and wastage.

Mauttone, A., & Plà-Aragonés, L. M. (2022). Preface: Contributions of OR to solve agricultural problems.Annals of Operations Research, 314(2), 317-318.

- Pre Processing Dataset : Data Preprocessing is a method that is used to convert the raw data into a clean data set.
- The data are gathered from different sources, it is collected in raw format which is not feasible for the analysis.
- By applying different techniques we can transform data into an understandable format.
- Building the prediction model and Analyzing the outcomes:It is used to predict future events or outcomes by analyzing patterns in a given set of input data
- This concludes that quick developments in data analytical technologies and ML techniques will result in cost-effective solutions in the agricultural sector

Vanitha, C. N., N. Archana, and R. Sowmiya. "Agriculture analysis using data mining and machine learning techniques." In *2019 5th international conference on advanced computing & communication systems (ICACCS)*, pp. 984-990. IEEE, 2019.

- Data mining extraction of information from records,is a powerful new technology with immense potential to help companies focus on the significant data in their data warehouse.It predict trends and performance and allowing businesses to make knowledge driven decisions which help in agriculture.