**Review of Crop Prediction using Machine Learning**

For most developing countries, agriculture is their primary source of revenue. Modern agriculture is a constantly growing approach for agricultural advances and farming techniques. It becomes challenging for the farmers to satisfy our planet's evolving requirements and the expectations of merchants, customers, etc. Some of the challenges the farmers face are- (i) Dealing with climatic changes because of soil erosion and industry emissions (ii) Nutrient deficiency in the soil, caused by a shortage of crucial minerals such as potassium, nitrogen, and phosphorus can result in reduced crop growth. (iii) Farmers make a mistake by cultivating the same crops year after year without experimenting with different varieties. They add fertilizers randomly without understanding the inferior quality or quantity.

The project aims to compare various supervised learning algorithms like KNN, Decision Tree, and Random Forest on the dataset containing 22 varieties of crops. The dataset was taken from Kaggle. For the Decision Tree and Random Forest Classifier, the model's performance is calculated under two criterions- Entropy and Gini Index. The train test ratio was kept to be 80:20. The results reveal that the suggested machine learning technique's effectiveness is compared to the best accuracy with precision, recall, and F1 Score.

The paper concluded that the crop prediction dataset showed the best accuracy with Random Forest Classifier both in Entropy and Gini Criterion with 99.32%. In contrast, K-Nearest Neighbour with k = 5 has the lowest accuracy among the three with 97.04%, and the accuracy of Decision Tree Classifier is in between KNN and Random Forest Classifier. When comparing the accuracy value, Decision Tree Gini criterion gave a better accuracy of 98.86% compared to Decision Tree Entropy Criterion.