

**GMR Institute of Technology**

**Department of Computer Science and Engineering**

Title of the Project : **Crop and Fertilizer Recommendation System using Machine Learning and Web Frameworks**

Name of the Course : B.Tech. (CSE) Section: C Semester: 7th

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**ABSTRACT:**

Agriculture is a sector that has a significant impact on the economy of our nation. Agriculture is the key factor in the development of civilization. Crop productivity is a major component of India's economy. Agriculture places a great deal of importance on crop selection. Crop forecasting is dependent on factors such as rainfall, humidity, temperature, and the amount of potassium, nitrogen, and phosphorus in the soil. The right kind and amount of fertilizers give the soil the nutrients it needs for continued crop production. Farmers can choose the crop to be grown in the early stages. Today, it is challenging for farmers to predict the crop due to the frequent changes in environmental circumstances. Farmers are also having a lot of issues as a result of their lack of awareness regarding fertilizers. Therefore, to estimate the crop and provide fertilizer, machine learning techniques are integrated using web-based frameworks like React JS and Django. Artificial intelligence known as machine learning enables computer programs to forecast outcomes more precisely. To forecast new output values, machine learning methods like KNN, random forest, and SVM are useful. The datasets that are useful for crop forecast and fertilizer recommendation are crop recommendation and fertilizer prediction. The results depict that an ensemble technique offers better prediction accuracy.

**Keywords:** Support Vector Machines(SVM), Random Forest, React JS, Django, K- Nearest Neighbor(KNN)

**Base Paper:**

1. Crop Prediction Based on Characteristics of the Agricultural Environment Using Various Feature Selection Techniques and Classifiers S. P. RAJA 1 , BARBARA SAWICKA 2 , ZORAN STAMENKOVIC3 , (Senior Member, IEEE), AND G. MARIAMMAL 4

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