

ABSTRACT

Indonesia is an agrarian country where agriculture is the main base of the national economy. The selection of plant species is one of the important factors that affect agricultural products and needs to be done selectively so that the results obtained are in accordance with expectations. Efforts made to overcome the problem of incompatibility of agricultural crops is to create a system that can predict the type of plant based on the condition of a soil. The system design process is done by using Machine Learning (ML) algorithm. This study applies several ML algorithms with the aim of obtaining the best ML algorithm that can classify plant species based on soil conditions or nutrients so that farmers and those who work in the agricultural industry can predict the type of plant that is suitable for planting based on soil conditions or nutrients. Classification algorithms used in this study include K-Nearest Neighbor (KNN), Random Forests (RF), eXtreme Gradient Boosting (XGBoost) and Support Vector Machine (SVM). The evaluation of the model in terms of the parameters of accuracy, precision and recall showed that for each parameter KNN algorithm gets a value of 92.05%, RF algorithm of 97.50%, XGBoost algorithm of 96.59% and SVM algorithm of 31.36%.

Keywords: *Algorithms, Machine Learning, Agriculture*