Crop prediction based on soil and environmental characteristics using feature selection techniques.

Summary: Earlier, crop cultivation was undertaken on the basis of farmers’ hands-on expertise. However, climate change has begun to affect crop yields badly. Consequently, farmers are unable to choose the right crop/s based on soil and environmental factors, and the process of manually predicting the choice of the right crop/s of land has, more often than not, resulted in failure. Accurate crop prediction results in increased crop production. This is where machine learning playing a crucial role in the area of crop prediction. Crop prediction depends on the soil, geographic and climatic attributes. Selecting appropriate attributes for the right crop/s is an intrinsic part of the prediction undertaken by feature selection techniques. In this work, a comparative study of various wrapper feature selection methods are carried out for crop prediction using classification techniques that suggest the suitable crop/s for land. The experimental results show the recursive feature elimination technique with the adaptive bagging classifier outperforms the others.

MSC:
91B76 Environmental economics (natural resource models, harvesting, pollution, etc.)
62P20 Applications of statistics to economics

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References: