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**Towards Sustainable Crop Selection:  
An AI Driven Approach to Precision Agriculture**

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## **Towards Sustainable Crop Selection: An AI Driven Approach to Precision Agriculture**

### **Abstract:**

Precision agriculture leverages IoT and artificial intelligence to aid farmers in making informed decisions about crop selection. Prior research lacks a conceptual framework to arrive at crop selection decision. The existing work on precision agriculture fails to consider the relative importance of features for crop selection. The relative importance of the factors related to soil and climate conditions is important as it helps the farmers to focus on a particular feature more than the other unimportant features. The literature on precision agriculture does not provide a rationale behind crop selection i.e., the existing artificial intelligence models are not interpretable. This study addresses the gaps by providing a conceptual framework by identifying from the literature, the important factors and their relative importance leading to crop selection. The potassium and nitrogen macronutrient information and humidity levels are identified as the most important features to arrive at crop selection decision. Finally, this study comes up with the decision model which is highly interpretable. The decision model provides a rationale behind selecting suitable crops. The practical contribution of this study is seen from the satisfied sustainable development goals.





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