Arecanut Plant Disease Prediction
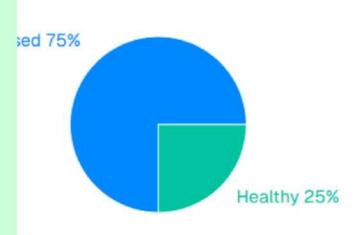
Varun MB

1AT22IS118

Arecanut (Areca catechu) is an important commercial crop, widely grown for its seeds (betel nut). Like many crops, arecanut is susceptible to various diseases, which can severely affect its yield. Early detection of diseases in arecanut plants is critical for ensuring crop health and profitability.
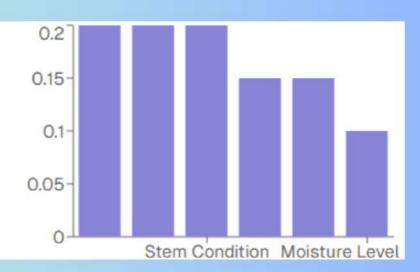
This project presents a simplified mock system for predicting diseases in arecanut plants based on observable features such as leaf color, spot color, leaf texture, stem condition, soil type, and moisture level. The system predicts the likelihood of various diseases specific to the arecanut plant and provides visual insights through pie charts and bar charts.

Implementation

The arecanut disease prediction system is implemented using the Flask framework in Python, which handles HTTP requests and serves HTML templates. The backend logic is a rule-based model that makes predictions based on input features, while the visualizations are created using Plotly.

Analysis

Results

The system provides an intuitive user interface for inputting arecanut plant data and predicting diseases. It visualizes the results in a clear and understandable manner using pie and bar charts. For example, if an arecanut plant has yellow leaves and brown spots, the system predicts a 75% chance of "Yellow Leaf Disease."

Conclusion

To wrThis project provides a basic but effective system for predicting diseases in arecanut plants. Using simple rule-based logic and visualizations, users can gain insights into the health of their crops. The addition of feature importance further enhances the model's interpretability by explaining the contribution of each input.actionable items that can lead to implementation, policy creation, or further study.