SISTEM PAKAR IDENTIFIKASI PENYAKIT TANAMAN CABAI RAWIT MENGGUNAKAN METODE FORWARD CHAINING DAN FUZZY MAMDANI *Expert System for Identifying Chili Pepper Plant Diseases Using Forward Chaining and Fuzzy Mamdani Methods*
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ABSTRACT

Chili pepper (Capsicum frutescens L.) is a significant horticultural commodity in Indonesia, yet it often faces yield losses due to diseases such as leaf spot, fruit rot, fusarium wilt, and yellow virus. This study aims to design a mobile-based expert system named RawitCare to identify chili pepper diseases using Forward Chaining and Fuzzy Mamdani methods. The system enables farmers to detect diseases based on observed symptoms, providing diagnosis with probability percentages and treatment solutions. Developed using the Flutter framework, the application features an intuitive interface with diagnosis, history, and recommendation functionalities. Testing on 150 data samples achieved a 97.33% accuracy, demonstrating the reliability of the methods in identifying seven types of chili pepper diseases. Limitations include fixed symptom weights and limited history storage. This research is expected to enhance the efficiency of disease diagnosis and management for chili pepper farmers, with suggestions for future improvements such as dynamic symptom weight updates and the addition of educational features.

Keywords*: Expert System, Chili Pepper, Forward Chaining, Fuzzy Mamdani, Mobile Application, Disease Diagnosis*