

ABSTRACT

COMBINATION OF *FORWARD CHAINING* AND *CERTAINTY FACTOR* IN DIAGNOSIS OF RICE DISEASES AND PESTS USING EXPERT SYSTEM

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Expert System is a computer program that contains knowledge from experts in their field. Expert systems are applied in various fields, one of which is in the agricultural sector. According to the Central Statistics Agency (BPS), Indonesia recorded 29.96 percent as of February 2021 of the workforce in Indonesia working in the agricultural sector with rice as a commodity crop that dominates the agricultural sector. Rice is a staple food for Indonesian people. Therefore, many rice plants are planted by farmers because they produce rice. The process of planting rice requires proper care and handling so that rice is not attacked by diseases and pests. Types of diseases and pests are very diverse and the symptoms caused by some have similarities. Farmers who have been working as farmers for less than 3 years or so-called novice farmers have difficulty identifying the types of diseases and pests that attack rice plants. Incorrect identification affects the handling and application of fertilizers, causing new diseases or risk of crop failure. Expert opinion in the field of agriculture is needed to provide knowledge for novice farmers about symptoms, types of diseases or pests, handling methods, and fertilizer recommendations. This research creates an expert system for diagnosing rice diseases and pests based on a *website* based on expert opinion. As a result, researchers succeeded in creating an expert system *website* using the *forward chaining* method and *certainty factor*. The main features of the *website* are diagnosis and consultation, after testing by experts the results of the system accuracy are 90.8%.

Keyword : *Sistem pakar, Hama Padi, Penyakit Padi, Certainty factor, Forward chaining.*