

ABSTRACT

Koi fish farming faces a major challenge in the spread of diseases that are difficult to treat due to limited knowledge of farmers and poor husbandry practices. Diseases such as White Spot, Black Spot, Dropsy, Cloudy Eyes, Fin/Tail Root, and Anchor Lice require proper identification and treatment. This research develops an expert system-based Android application to diagnose koi fish diseases using the Forward Chaining and Backward Chaining methods. Forward Chaining validates hypotheses based on factual evidence, while Backward Chaining tests the truth of hypotheses from facts in the knowledge base. The application was successfully implemented with a user-friendly interface and tested through Focus Group Discussion (FGD) and questionnaire distribution methods. The user survey showed a high level of satisfaction, with 88.7% of respondents feeling satisfied with this application. Functionality testing obtained a percentage of 99.37%. System accuracy testing shows a diagnosis accuracy rate of 89.23% with a standard deviation value of 12.87% compared to the diagnoses of 5 experts. The results show that this application is effective in diagnosing koi fish diseases and provides appropriate treatment solutions, helping farmers in caring for koi fish and reducing economic losses. With a high level of user satisfaction, this application is expected to improve the knowledge and practice of koi fish maintenance.

Kata Kunci: *Backward Chaining, Forward Chaining, expert system, koi fish disease.*