

## **ABSTRACT**

Tilapia is one type of freshwater fish that is abundant and easy to cultivate because of its very fast growth. One of the obstacles in the development of tilapia cultivation is the difficulty of controlling tilapia pests and diseases. Tilapia farmers in Karang Hamlet, Sleman Regency do not know about fish diseases, therefore, an expert in this field is needed. However, using experts or fish experts will certainly cause problems, one of which is the limited availability of experts or experts in an area, and the costs are quite large. The purpose of this research is to create an expert system to identify diseases in tilapia. The purpose of using an expert system is a system that seeks to adopt or resemble human (expert) knowledge to a computer. The method used to identify disease in tilapia in this study is the forward chaining method and the certainty factor method. The forward chaining method is used because this research will begin with some facts from the user and then processed by the system. Forward chaining starts with providing facts and then equates to rules and finds the disease. The certainty factor method is used to overcome uncertainty. Certainty factor will calculate and then produce the confidence value of the detected disease. to ensure this research will be in the form of a web. This website can detect tilapia disease by entering a choice of symptoms according to the condition of tilapia. The system flow starts from selecting the diagnosis menu, then selecting symptoms and providing a symptom assessment, then selecting the diagnosis button, then the results will appear. The accuracy test shows a result of 91.67% in accordance with the results of expert diagnosis where the results are almost close to 100%. Also testing the system using blackbox and whitebox shows the results that the system functions as expected and the comparison of the calculation results between the system and the manual has the same results.

**Keywords: expert system, forward chaining, certainty factor, fish disease**