

ABSTRACT***EXPERT SYSTEM OF DETERMINING LAND SUITABILITY
FOR CULTIVATION OF FRUIT CROPS USING WEB-BASED
CASE-BASED REASONING METHOD******(Case Study : Kebun Benih Hortikultura Karanganyar)***

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Agriculture is one of the economic sectors in Indonesia that has the potential to be developed to support the achievement of national food self-sufficiency. Horticultural agriculture has a great opportunity to be developed. However, there are problems in the productivity and management of existing gardens. An example is the empty plot of land because often the planted plants cannot survive, especially when the dry season arrives. Lack of information regarding land suitability and the limited ability of gardeners about the condition of land characteristics are the causes of the problems that occur. This study aims to design and implement an expert system for selecting land suitability for fruit crops. The method used for problem-solving uses case-based reasoning, namely comparing new cases with old cases and calculating the similarity value of cases. The result of this research is an expert system for determining the suitability of land for fruit crop cultivation which can provide recommendations on what plants are suitable for the analyzed land. Testing the accuracy using the confusion matrix method, the accuracy of the expert system obtained results of 80% from 30 test cases. The results of black-box testing in a login test case obtaining a value of 100%, a test case adding to plant data obtained a value of 100%, a test case changing plant data obtained a value of 100%, the test case adding to the land condition data obtained a value of 75%, and the test case changing the land conditions obtained a value of 100%. The results of white-box testing are carried out by testing the program's basic pathways to determine the possible path of execution that will occur. The test is carried out by starting with the construction of a flow chart, calculating cyclomatic complexity, and determining the basic pathway.

Keywords : Agriculture, Horticulture, Case-Based Reasoning, Similarity, Confusion Matrix, Cyclomatic Complexity, Black-box Testing, White-box Testing.