Expert System for Determining the Quality of Kasturi Tobacco Leaves Using Forward Chaining and Certainty Factor Methods

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ABSTRACT

Kasturi tobacco leaves are one of the essential agricultural commodities in Indonesia which are in great demand in local and international markets. However, determining the quality of tobacco leaves (grading) is still manually and has not used an expert system. Therefore, this study aims to develop an expert system for determining the quality of Kasturi tobacco leaves using a combination of Forward Chaining and Certainty Factor methods. This research was conducted at UD Sinar Wahyu, Sukowono District, Jember Regency. The Forward Chaining method is used to grade the physical characteristics of tobacco leaves determined by experts. While the Certainty Factor is used to calculate the value of certainty grading. The data used in this study is primary data obtained through interviews with experts. This system can assist companies in determining the quality of tobacco leaves quickly and precisely to improve product quality and competitiveness in local and international markets. The application is proven to run well in black-box testing. User Acceptance Test (UAT) shows results of 90%. This shows that the system is well-received by users. The accuracy of the results reaches 86% when comparing the system results with expert manual grading on fifteen samples of tobacco plants.

Keywords: *Expert System, Forward Chaining, Certainty Factor, Quality, Kasturi Tobacco Leaves.*