

## **ABSTRACT**

### **WEB- BASED EXPERT SYSTEM FOR DIAGNOSE DRAGON FRUIT DISEASE USING CASE- BASED REASONING METHOD**

**By**

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This research goal is to develop an expert system that can help to diagnose dragon fruit disease based on existing symptoms. The data used in this expert system consists of 10 data of dragon fruit disease and 23 data of symptoms of dragon fruit disease. This research uses the Case-Based Reasoning method to diagnose and determine the degree of accuracy of the diagnosis results. An Expert system that is developed based on the web. Testing has been done in two stages, namely internal testing and external testing. Internal testing consists of functional testing and expertise testing. Functional testing using the Black Box method with the Equivalence Partitioning (EP) technique shows that the system developed functions as expected. Expertise testing is done by comparing the results of diagnosis by the system with the results of diagnosis by experts, using 10 cases and producing an average accuracy of 80.49%. Questionnaires were given to 35 respondents for External testing. Respondents were divided into two groups to get an assessment of the system. The results of the questionnaire get an average value of 86% of the respondent group I (dragon fruit farmers) to the interactive variable questionnaire while the average value of 81% of the user friendly variable questionnaire respondent group I (dragon fruit farmers), the average value of 83% of the respondent group II (agriculture students) were on the interactive variable questionnaire while the average value was 84% of the user friendly variable questionnaire respondent group II (undergraduate students majoring in agriculture).

**Keywords:** Expert System, Case - Based Reasoning, Dragon Fruit Disease.

## **ABSTRAK**

### **SISTEM PAKAR DIAGNOSIS PENYAKIT TANAMAN BUAH NAGA MENGGUNAKAN METODE CASE – BASED REASONING BERBASIS WEB**

**Oleh**

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Penelitian ini ditujukan untuk mengembangkan sistem pakar yang dapat membantu mendiagnosis penyakit buah naga berdasarkan gejala yang ada. Data yang digunakan pada sistem pakar ini terdiri dari 10 data penyakit buah naga dan 23 data gejala penyakit buah naga. Penelitian ini menggunakan metode *Case – Based Reasoning* untuk mendiagnosis dan mengetahui derajat akurasi hasil diagnosis. Sistem pakar yang dibangun berbasiskan web. Pengujian telah dilakukan dua tahap, yaitu pengujian internal dan pengujian eksternal. Pengujian internal terdiri dari pengujian fungsional dan pengujian kepakaran. Pengujian fungsional menggunakan metode *Black Box* dengan teknik *Equivalence Partitioning* (EP) menunjukkan bahwa sistem yang dikembangkan berfungsi seperti yang diharapkan. Pengujian kepakaran dilakukan dengan membandingkan hasil diagnosis oleh sistem dengan hasil diagnosis oleh pakar, menggunakan 10 kasus dan menghasilkan rata – rata akurasi sebesar 80,49%. Pengujian eksternal dilakukan dengan memberikan kuesioner 35 responden yang dibagi ke dalam dua kelompok untuk mendapat penilaian terhadap sistem. Hasil kuesioner mendapatkan nilai rata- rata sebesar 86% dari kelompok responden I (petani buah naga) terhadap kuesioner variabel interaktif sedangkan nilai rata – rata sebesar 81% terhadap kuesioner variabel *user friendly* kelompok responden I (petani buah naga), nilai rata – rata sebesar 83% dari kelompok responden II (mahasiswa pertanian) terhadap kuesioner variabel interaktif sedangkan nilai rata – rata sebesar 84% terhadap kuesioner variabel *user friendly* kelompok responden II (mahasiswa pertanian).

**Kata Kunci** : Sistem Pakar, *Case – Based Reasoning*, Penyakit Buah Naga.