

SISTEM PAKAR DIAGNOSA PENYAKIT TANAMAN KELAPA SAWIT MENGGUNAKAN METODE BAYESIAN NETWORK di PT. PERMATA CITRA RANGAU

SELI PURNIANDA
NIM:11453205612

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Program Studi Sistem Informasi
Fakultas Sains dan Teknologi
Universitas Islam Negeri Sultan Syarif Kasim Riau
Jalan HR. Soebrantas KM 15 No.155 Pekanbaru

ABSTRAK

Salah satu penyebab utama degradasi lahan tingkat tinggi dan rendahnya produktivitas dalam olahan minyak kelapa sawit adalah perkebunan kelapa sawit petani yang sering diserang oleh berbagai macam penyakit. Selain itu, minimnya pengetahuan petani tentang penyakit tanaman kelapa sawit berakibat kurangnya hasil panen dari tanaman tersebut. Berdasarkan permasalahan tersebut, dibutuhkan suatu sistem pakar yang dapat mendiagnosa penyakit pada tanaman kelapa sawit. Sistem pakar ini dapat mendiagnosa penyakit pada tanaman kelapa sawit menggunakan metode bayesian network dengan memperhatikan gejala-gejala yang dialami oleh petani pada tanaman kelapa sawit. *Bayesian network* digunakan untuk menghitung nilai probabilitas dari setiap kemunculan berbagai gejala. Sistem pakar diagnosa penyakit tanaman kelapa sawit ini memberikan informasi tentang penyakit yang menyerang tanaman kelapa sawit, penyebabnya, cara penanggulangannya, beserta hasil perhitungan nilai probabilitasnya. Pengujian dilakukan dengan metode *black box*, pengujian sistem berdasarkan hasil diagnosa, dan *user acceptance test* (UAT). Hasil pengujian dapat disimpulkan bahwa metode *bayesian network* dapat memberikan hasil berupa nilai probabilitas jenis penyakit tanaman kelapa sawit berdasarkan gejala yang dipilih. Sistem pakar diagnosa penyakit tanaman kelapa sawit dengan metode *bayesian network* memberikan solusi, yang mana telah dilakukan pengujian kepada user, 84% responden menyatakan informasi pada sistem lengkap dalam mengatasi masalah penyakit tanaman kelapa sawit yang menyerang beserta nilai probabilitas secara tepat dan sedini mungkin.

Kata Kunci : **Bayesian Network**, Penyakit Tanaman Kelapa Sawit, Sistem Pakar.

EXPERT SYSTEM DIAGNOSIS OF PALM OIL PLANTS USING BAYESIAN NETWORK METHOD IN PT. PERMATA CITRA RANGAU

SELI PURNIANDA
NIM : 11453205612

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Department of Information Systems
Faculty of Science and Technology
State Islamic University of Sultan Syarif Kasim Riau
HR. Soebrantas Street KM 15 No.155 Pekanbaru

ABSTRACT

One of the main causes of high level land degradation and low productivity in palm oil processing is the oil palm plantations of farmers who are often attacked by various diseases. In addition, the lack of knowledge of farmers about palm oil diseases resulted in the lack of crops from these crops. Based on these problems, required an expert system that can diagnose diseases in oil palm plants. This expert system can diagnose diseases in oil palm plants using the bayesian network method by taking into account the symptoms experienced by farmers in oil palm crops. Bayesian network is used to calculate the probability value of each occurrence of various symptoms. This expert system of plant disease diagnosis of palm oil provides information on diseases affecting oil palm crops, its causes, how to overcome them, along with the results of calculating the probability value. The test is done by black box method, system test based on diagnostic result, and user acceptance test (UAT). Test results can be concluded that bayesian network method can give the result of probability value of palm oil disease type based on selected symptoms. The plant disease diagnostic expert system using Bayesian network provides a solution, which has been tested to the user, 84% of respondents stated information on the complete system in overcoming the problem of oil palm disease that attacked the attack and the probability value precisely and as early as possible.

Keywords: *Bayesian Network, Expert System, Oil Palm Plant Disease.*