Web-Based Expert System To Detecte Chili Desease Using Rule Base Reasoning Approach

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Abstract: Along with the progress of global Era, the development of science is also growing rapidly especially for the progression of technology, information and communication. Artificial intelligence is part of computer science specifically aimed for designing intelligent automation of behavior in system of computer intelligence. Expert system as part of the application of artificial intelligence is for combining knowledge, facts and search technique to solve the problem that normally requires expertise from an expert. One of directions from the system of expert in agriculture is the system expert for detecting diseases of chili plant. In this study, the expert system was designed to detect disease of chili plants on web-based using the rule-based reasoning approach method, because the method can decide a disease of chili plant with a set of facts - symptoms or symptoms that exist in a sequential manner and this approach can also provide an explanation of the steps in achieving the solution for the disease. Web-Based Expert System To Detecte Chili Desease Using Rule Base Reasoning Approach is expected to solve the problems in agriculture quickly, precisely and accurately especially for the chili’s farmer.

Keywords: Artificial Intelligence, Expert System, chili, rule of based reasoning approach (rule base reasoning)

1. Introduction
One kind of agriculture commodities which has a very high selling power is Chili.[1] Chili is widely planted in Indonesia because it appropriates with Indonesian climate. The needs of chili increase every year in line with the increasing population and the development of industries that need chili raw materials.[2] Chili is mostly used as complementary vegetables as well as the flavor for any kinds of food.[3] Consider about the importance of Chili which has high value income but susceptible of the disease, Chili in terms of care must be carried out in the extra time and extremely.[4] In controlling the disease, the farmers need to anticipate the symptoms that usually attack chili plants so that they do not spend lot of costs.[5] Therefore an expert in agriculture is needed to provide any information about the Chili’s disease, how to cultivate properly and correctly summarized in an expert system.[6] Web-Based Expert System To Detecte Chili Desease Using Rule Base Reasoning Approach come as the expert system who solve problems by adopting the knowledge of human beings in computers without any constrained space and time.[8]

2. Methods
The data was taken by Conducting some observations and interviews with plant experts related to identify the diseases of chili plants. [9] Then data had been obtained from the observation results,
which were confounded with survey reports and policies on the use of structured specifications by using modeling.[10]

Understanding the system The system is a series of two or more interconnected components, which interact to achieve a goal.[11] Most systems consist of smaller sub-systems that support larger systems. Expert System Definition Definition of the system according, an expert system is an information system that tries to adopt knowledge from humans to computers, so that computers can solve problems like an expert.[12] While the understanding of information systems is a collection of elements that are interconnected with one another to form a unity to integrate data, process and store and distribute information.[13]

Expert System Structure In building an expert system, there are 2 basic environmental principles that must be met by the developer including the developer environment and the consulting environment.[14] The developer environment is used as a component builder and knowledge base while the consultation environment is used by someone who is not an expert to consult Components that exist in the expert system:

1. User Interface (User Interface) is a mechanism used by users and expert systems to communicate.
2. Knowledge Base contains knowledge in solving problems in a particular domain.
3. Knowledge Acquisition (Knowledge Acquisition) accumulation, transfer and transformation of expertise in solving problems from the source of knowledge into computer programs.

Motor Inference (Engine Inference) Motor inference is used in determining the conclusions of expert system rules.[15]

3. Results and Discussion

Display System Program Form Main Menu Expert System Main menu is a menu form that illustrates the page shot at the plant plant detection detector consisting of the consultation form and the login form:[16]

![Figure 1. Form Main Menu SystemPakar Admin Login Form](image)

The Admin Login Form is security to secure the admin that is registered in the database that can access the burned data.
Admin Data Storage Form

Admin Storage Form is a form used to store admin data that is stored in a database.

Admin Data Add Form is a form that is used to add data, when the admin who accesses the data has experienced a change.
Form Data Input Symptoms, Disease Data and Control Solutions

This form is used for admins to input symptom data, disease data, and solutions for controlling human health plants.

Data Input Consultation Form Symptoms

Symptom Input Consultation Form is a form that is used in the community, especially the panic plants in the village of smoking for the symptoms of symptoms that attack the branches of the branches.

Consultation Data Output Form

The Data Consultation Output Form is the result of consultation carried out by the community, especially the panic paper. This form also displays the types of diseases and solutions controlling control oil plants.
4. Conclusion

Based on the results of the analysis and discussion it can be concluded that, with the presence of an expert system of disease detection in WEB-based chili plants.[17] Can answer some of the problems of chilli farmers' complaints about the disease of chili plants and the correct control methods, which until now information about solutions to control the problem is still low and has not been absorbed optimally by the community, especially chili farmers.[18] With this expert system of chili plant disease detection also, it is expected to reduce the level of cost of controlling chili plant disease, because the information conveyed is accurate and right on target directly from the knowledge and experience of the chili experts based on the symptoms seen in the field.[19] Expert system for detecting chili plant diseases that were built using the rule-based reasoning approach by the author is still simple, although the inputs, processes and output produced are quite good but this system still requires skilled hands to develop it so that it becomes more full and interesting.[20]

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