SISTEM PAKAR PENYAKIT BUAH NAGA MENGGUNAKAN METODE MODIFIED K-NEAREST NEIGHBORH (M-KNN) BERBASIS WEBSITE

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ABSTRAK

Penyakit dan hama pada tanaman buah naga dapat menyebabkan kerugian bagi para petani. Pengembangan sistem pakar berbasis web untuk penyakit pada buah naga dapat membantu pertani dalam meningkatkan produksi buah naga. Untuk mengatasi permasalahan tersebut, sistem pakar penyakit buah naga yang memanfaatkan metode Modified K-Nearest Neighbor (M-KNN) untuk menganalisis gejala penyakit dan memberikan rekomendasi penelitian. Sistem ini memungkinkan pengguna, terutama petani dan ahli pertanian, untuk mengaksesnya melalui platform web dengan mudah. Dalam melakukan perancangan sistem dilakukan analisa sistem dengan menggunakan alat bantu skema yaitu, Unifield Modeling of Language (UML) yang meliputi Use Case Diagram, Use Case Specification, Activity Diagram, Sequence Diagram dan Class Diagram. Sistem ini digunakan untuk meneliti jenis penyakit buah naga berdasarkan gejala yang terdapat ditanaman. Untuk membuktikan hasil penelitian tersebut, maka dilakukan pengujian akurasi sistem dengan Confusion Matrix yang menggunakan 90% data latih dan 10% data uji memiliki akurasi mencapai 84% hasil sistem pakar.

Kata kunci : Hama dan Penyakit Buah Naga, Sistem Pakar, Metode *Modified K- nearest Neighborh*

EXPERT SYSTEM FOR DRAGON FRUIT DISEASES USING THE MODIFIED K-NEAREST NEIGHBOR (M-KNN) METHOD BASED ON A WEBSITE

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ABSTRACT

Diseases and pests in dragon fruit plants can cause losses for farmers. The development of a web-based expert system for diseases in dragon fruit can help farmers increase dragon fruit production. To overcome this problem, a dragon fruit disease expert system uses the Modified K-Nearest Neighbor (M-KNN) method to analyze disease symptoms and provide research recommendations. This system allows users, especially farmers and agricultural experts, to access it via a web platform easily. In designing the system, system analysis was carried out using schematic tools, namely, Unifield Modeling of Language (UML) which includes Use Case Diagrams, Use Case Specifications, Activity Diagrams, Sequence Diagrams and Class Diagrams. This system is used to research types of dragon fruit diseases based on the symptoms found on the plant. To prove the results of this research, the system accuracy was tested using the Confusion Matrix which used 90% of the training data and 10% of the test data, which had an accuracy of 84% of the expert system results.