ABSTRACT

APPLICATION OF THE NAIVE BAYES ALGORITHM TO DIAGNOSE DISEASES THROUGH AN EXPERT SYSTEM APPROACH
(Object of Study: Free-range Chicken)

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Free-range chicken is a native chicken from Indonesia and comes from a type of red jungle fowl that has been domesticated, then became free-range chicken that can adapt to the surrounding environment. Raising chickens has a risk of disease that must be faced, it can be said that this disease also applies to types of native chickens. The low level of public knowledge about diseases in chickens is caused by a lack of information obtained from experts or related agencies. In addition, it is difficult to find experts who understand the diagnosis of disease in free-range chickens and their solutions, which is a problem, so research is needed on diagnosing diseases in free-range chickens through an expert system approach. Based on previous research, this study will classify based on probability calculations on Naive Bayes with cases of disease diagnosis in native chickens. The dataset used is 5 disease classes and 33 symptoms. Using training data to train the model and data testing to test the model. Naive Bayes works with symptom input which then calculates the probability of disease and symptoms, calculates the Bayes value based on the probability of disease and symptoms, and calculates the percentage value of each disease. The results of the classification with the highest probability percentage value of each disease class are used as the results of the diagnosis. The first test resulted in the accuracy of the Naive Bayes model with data testing showing an accuracy of 87%, followed by a precision of 90%, and a recall of 87%. Whereas in the second test, the results of expert system diagnoses compared to expert diagnoses have an accuracy value of 92%.

Keywords: classification, diagnosis, disease, expert system, free-range chicken, naive bayes