ABSTRAK

Tujuan : Perancangan sistem yang dapat mengklasifikasikan jenis buah kurma menggunakan metode *Gray Level Co - Occurance Matrix* (GLCM) dan *K-Nearest Neighbor* (K-NN) berdasarkan nilai warna dan tekstur. Pengujian tingkat akurasi pada penggunaan metode GLCM dan KNN dalam klasifikasi jenis buah kurma

Perancangan/metode/pendekatan : Penerapan metode *Gray level Co-Occurence Matrix* (GLCM) sebagai ekstraksi fitur tekstur dan *K-Nearest Neighbor* (K-NN) sebagai metode klasifikasi.

Hasil : Penerapan ekstraksi fitur tekstur pada metode *Gray Level Co-Occurance Matrix* (GLCM) menggunakan nilai besaran *Angular Second Moment* (ASM), *Contrast*, *Inverse Different Moment* (IDM), dan *Correlation* serta ekstraksi ciri RGB dengan nilai rata-rata *Red*, *Green*, dan *Blue* yang dapat berfungsi dengan baik sebagai parameter untuk klasifikasi menggunakan metode *K-Nearest Neighbor*. Pada proses pengujian model menggunakan perhitungan metode confussion matrix didapatkan nilai rata-rata akurasi pada K=3 sebesar 96%, nilai rata-rata presisi pada K=3 sebesar 100%, dan nilai rata-rata recall pada K=3 sebesar 98%. Hasil ini didapatkan dengan menggunakan data sejumlah 320 data. Data tersebut terbagi menjadi 3 label, yaitu 1000 data citra Kurma Ajwa , 1000 data citra Kurma Medjool dan 1000 data citra Kurma Rutab. Total data tersebut terbagi menjadi 2 jenis data, yaitu data training dan data testing. Perbandingan jumlah data training dan data testing, yaitu 80%:20%. Jumlah data training yang digunakan 2400 data dan jumlah data testing sebanyak 600.

Keaslian/ *State Of The Art* : Penelitian ini dirancang untuk mengklasifikasikan jenis dan kualitas biji kopi menggunakan metode *Gray Level Co-Occurance Matrix* (GLCM) *dan K-Nearest Neighbor* (K-NN) dengan menggunakan buah kurma yang di ambil dari Kaggle

Kata Kunci : Klasifikasi, Kurma, *Grey level Co-occurence Matrix, K-Nearest Neighbor*

ABSTRACT

Purpose *: The design of a system that can classify the type dates fruit using the Gray Level Co-Occurance Matrix (GLCM) and K-Nearest Neighbor (K-NN) methods based on color and texture values. Testing the level of accuracy of the use of the GLCM and KNN methods in the classification of the type dates fruit.*

Design/Method/Approach *: Application of Gray level CoOccurrence Matrix (GLCM) method as texture feature extraction and K-Nearest Neighbor (K-NN) as classification method.*

Result *: The application of texture feature extraction to the Gray Level Co-Occurance Matrix (GLCM) method uses Angular Second Moment (ASM), Contrast, Inverse Different Moment (IDM), and Correlation and RGB feature extraction values with an average value of Red, Green, and Blue can function well as a parameter for classification using the K-Nearest Neighbor method. In the process of testing the model using the confusion matrix calculation method, the average accuracy value at K=3 is 96%, the average precision value at K=3 is 100%, and the average recall value at K=3 is 98%. These results were obtained using data of 320 data. The data is divided into 3 labels, namely 1000 data of the Ajwa Date image, 1000 image data of the Medjool Date and 1000 image data of the Rutab Date. The total data is divided into 2 types of data, namely training data and testing data. Comparison of the amount of training data and test data, namely 80%:20%. The amount of training data used is 2400 data and the amount of test data is 600.*

Originality/Value/State Of The Art *: This study was designed to classify the type and quality of coffee beans using the Gray Level Co-Occurance Matrix (GLCM) and K-Nearest Neighbor (K-NN) methods using dates taken from kaggle.*

Keywords : Classifications, Dates, Grey level Co-occurence Matrix, K-Nearest Neighbor