Implementasi K-Nearest Neighbor (KNN) Untuk Identifikasi Penyakit Pada Daun Jeruk Siam (Citrus Noblilis Lour. Var. Microcarpa) Berdasarkan Gray Level Co-Occurrence Matrix *K-Nearest Neighbor (KNN) Implementation For Disease Identification In Siam Orange Leaves (Citrus Noblilis Lour. Var. Microcarpa) Based On Gray Level Co-Occurrence Matrix*
Supervised by Zilvanhisna Emka Fitri, ST, MT

Rifqi Hakim Ariesdianto
Study Program of Informatics Engineering
Majoring of Information Technology
Program Studi Teknik Informatika
Jurusan Teknologi Informasi

ABSTRACT

.
Indonesia has three commercial types of local oranges, namely large oranges (Pamelo C. grandis), Siamese oranges (C. nobilis Lour. Var. Microcarpa) and tangerines (C. reticulata Blanco) . However, oranges production in Indonesia experiences production instability every year. One of the main factors causing this fluctuating production rate is the disease that attacks oranges plants. Viruses, bacteria and pests are the main causes of disease in citrus plants. Most of the symptoms of citrus disease are visible on the leaves. So that by paying attention to the symptoms on the leaves, several diseases can be identified. namely leaf cancer, and burrow caterpillar disease. So far, checking for disease is still done manually, but accuracy is needed considering manual methods like this will lack accuracy in determining citrus diseases. This study aims to assist citrus farmers in distinguishing between leaf cancer and burrow caterpillars. The method used in this study is the K-Nearest Neighbor algorithm with green – blue color component that obtained from the original RGB image, while texture-based feature extraction uses the Gray Level Co-occurrence Matrix (GLCM) feature values, namely ASM, Contrast, adn Entropy with an angle of 0 °, 45 °, 90 ° and 135 °. The percentage of accuracy of the K-Nearest Neighbor method is 70% with k value = 21.

Key words*: Orange, GLCM, K-Nearest Neighbor.*