DIGITAL IMAGE PROCESSING of NUTRIENT DEFICIENCIES CORN USING COLOR MOMENTS AND GLCM METHOD

Aji Seto Arifianto,S.ST, MT as a counselor

Niko Sebastian

Study Program of Informatics Engineering Majoring of Information Technology

ABSTRACT

Corn (Zea mays L) is an important food ingredient in Indonesia, because corn is second source of carbohydrates after rice. Based on data from the Ministry of Agriculture, Indonesian maize production (Forecast Figures I) in 2018 weighs 30.56 million tons with of 5.73 million hectares (ha) land area. As a result, the national maize productivity grew only 0.27% from the previous year. One of the causes of this, is deficiency of cultivation of maize, young farmers are also less able to differentiate nutritional deficiencies in maize, so that corn growth is not optimal. This research developed a nutrient deficiency detection system in maize using Color Moments and GLCM methods that can help farmers differentiate nutrient deficiencies. This research begins with collecting data from field survey with experts. After corn leaf images are captured through a field survey, they are pre-processed in order to be used in the features extraction step. Extracted features from these images are texture and color. Texture feature extraction is conducted by GLCM while color feature extraction is conducted by color moments. Classification method which is used in this research is support vector machine (SVM). Test conducted with 222 training images data, and 15 test images data with of 86.66% classification accuracy.

Keywords : *deficiency, Color Moments, Corn leaf, GLCM, SVM*