# ABSTRACT

In corn farming can be found damage kernel, dull kernel, dirty kernel, and broken kernel very often due to the drying and defoliation process. Corn kernel which smaller than normal also be able to worsen the quality. Corn kernel quality determination usually done manually by visual observation. Manual system takes a long time and produces quality products that are not consistent because of visual limitations, fatigue, and differences in the perception of each observer.

At this final project is designed a classification system to determine the quality of corn kernel based on texture analysis using digital image processing, to get the right and objective results. Captured image data is sample of corn kernel using 12 MP digital camera. The algorithm used for feature extraction is first order and second order of statistic method and classification quality of the corn kernel using a K-Nearest Neighbor (K-NN).

Based on a simulation, it can be concluded that the system can be classified according to three levels of corn kernel quality, there are first quality, second quality, and third quality. The highest accuracy results obtained when k = 3 and using Cityblock Distance that is equal to 91.85%.

Key word: corn kernel, classification, quality, texture analysis, statistic, K-NN