

## ABSTRACT

*Indonesia is an agricultural country with a vast plantation area. In addition to oil palm, cassava and banana, Indonesia is a country with large mangoes production. In 2016 FAO statistics said Indonesia was the fourth largest country of mango production in the world. This of course can be further improved if there are many technological breakthroughs used in the production of Mango. This technology can be applied in the process of planting, tendance, and harvesting. In this Final Project, a system to detect the ripeness of Mango based on digital signal processing on FMCW radar.*

*The system works by classifying the mango ripeness level based on the magnitude of the wave obtained by applied discrete fourier transforms on the siversima RS3400X radar frequency beat on the mango. Classification is carried out by observing the distance between the system and the mango on indoor / outdoor conditions.*

*This study obtain the results of a system test on the calcification of sample mango ripeness level and analysis the effect of the ripeness level of mangoes in conditions in indoor and outdoor at a distance of 90, 100, and 110 cm against the magnitude wave. In this study, a system was able to classify mango ripeness level with an accuracy 42,77%*

**Keywords:** *Mango, maturity, FMCW, classification, magnitude.*