ABSTRACT

High agricultural production in Indonesia, with the harvesting process being carried out manually, is the subject of this study. The aim of this research is to increase efficiency and accuracy in the process of sorting melons based on weight and detecting fruit ripeness. In this research, a sorting tool was developed that uses a conveyor machine equipped with a load cell and webcam. The Arduinoo Mega 2560 microcontroller is used as the main approach in controlling machine operations automatically. Load cells are used to measure the load or weight of melons passing through the conveyor machine. Meanwhile, the webcam detects fruit ripeness using machine learning. It is therefore anticipated that the development of this sorting instrument will boost agricultural productivity when it comes to melons.

Kata Kunci: *Arduino Mega 2560, Automation System, Load Cell, Machine Learning, Sorting System.*