

ABSTRACT

In doing tomatoes color grading manually by human power, human limitations will lead to human-error. Therefore, the automation system classification of tomatoes by color developed. In this research, we design an automation system that can perform color grading 2-dimensional image, especially tomatoes using static threshold method, this method used to classify grade color of an image. The system will be designed to classify the tomatoes colors into red and green grade.

The study began by conducting initial study phase, phase analysis, design phase and implementation phase and testing. System design begins with the design of color grading program using Visual Basic applications, create of databases for the storage of grading results. Next, we design Human Machine Interface using the Intouch application, for programmable logic control as the control center to work in accordance with the desired scenario, we need to implanted an algorithm that was made using CX-Programmer in Ladder diagram language. Next, integration and communication grading programs, databases, Human Machine Interface, and Programmable Logic Control into an automation system classification tomatoes based on color.

The system is tested using miniplant based on scenarios that have been designed for systems that are made in accordance with the purposes of research, the results of testing proved the system has success to do grading tomatoes based on color.

Keywords

Automation system, tomatoes color, static threshold method