DESIGN AND IMPLEMENTATION OF ESP32 BASED EGG SORTING

A. Maulana Prama Yoga

Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : ahmadmaulanapramayoga@gmail.com

ABSTRACT

Technological developments have been applied in the laying hen farming sector, with egg production in Indonesia reaching almost 6.12 million tons in 2023 (BPS). To maintain egg quality, evaluation of exterior and interior aspects is very important, but manual processes are often inefficient and prone to errors. This study proposes a simulation of an ESP32-based egg sorting system that uses a load cell sensor to measure mass, a photodiode sensor to check interior quality, and a NEMA 17 servo and stepper motor for sorting and moving modified plastic eggs. After conducting the simulation, it was found that the system was successfully developed with a feature for determining egg categories based on the mass and quality the egg interior. In addition, the system is able to calculate the number of eggs sorted. The level of accuracy of mass weighing using a load cell sensor is 98.75. Overall, the success rate of this system reaches 90%.

Keywords: Egg Weighing, load cell sensor, photodiode sensor, egg interior quality.