

DESIGN AND DEVELOPMENT OF A CHICKEN EGG QUALITY DETECTION DEVICE USING SOLIDWORKS

Muhammad Rafi Dzikrullah

Mechatronics Engineering Technology Study Program

Engineering Departement

ABSTRACT

Chicken eggs are a popular poultry commodity among farmers as they are an affordable primary source of protein. Farmers and the egg processing industry require efficient tools to detect egg quality. The main issue with this process is that manual quality inspection is inefficient and requires specialized skills. Based on this problem, this research aims to design an automatic chicken egg quality detector using SolidWorks. This tool is expected to be more efficient, practical, and economical, thereby speeding up and simplifying the egg quality inspection process. The quality detection process uses a conveyor system. The design of this tool involves creating 3D models, simulations, and strength analysis using SolidWorks. The research stages to obtain the tool's feasibility data include using validation questionnaires from experts through interviews, questionnaires, observations, or a combination of these methods. The results of the feasibility test analysis through expert validation questionnaires showed a total percentage of 89%. Based on the validation questionnaire percentage criteria, the tool is considered successful if the total percentage is $\geq 61\%$, which indicates a "good" criterion. The chicken egg quality detector designed using SolidWorks has proven to be efficient and accurate in detecting egg quality and can speed up the inspection process compared to manual methods.