Design of Load Cell-Based Weighing System for Smart Monitoring of Broiler Weight

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ABSTRACT

In the context of this research, there is a primary focus on developing a chicken weight weighing system that utilizes load cell sensor technology, aimed at enhancing efficiency and accuracy in the weighing process, as well as contributing positively to the advancement of automation technology in the poultry industry. This design involves modifying existing scales by adding a steel frame, weighing platform, and a weighing cage equipped with a trap door system. Data collection from the load cell sensor utilizes two samples: a chicken sample and a fixed weight sample. The testing of the chicken sample was conducted ten times, comparing the weight results obtained from a conventional scale with those from the designed equipment. Data analysis from the chicken weighing device yielded percentage error results categorized into two groups: relatively large errors of 1.82% to 3.6% and relatively small errors of 1.08% to 1.67%. Additionally, four types of fixed weights were tested at nine different loading points, producing average success percentages of 98.4%, 96.3%, 98.7%, and 98.1%.

Keywords: *Chicken, Load Cell, Livestock*