

***Design of an Automatic Weighing System on a Corn Grain Grinding Machine
Using ESP32***

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ABSTRACT

The process of grinding and weighing corn kernels for animal feed is generally still carried out separately and manually, making it less efficient and potentially causing measurement inaccuracies. This study aims to design an automatic weighing system on an ESP32-based corn kernel grinding machine that is able to work in an integrated manner. The research stages include system design, programming, assembly, testing, and data analysis. The system uses a load cell sensor with an HX711 module as a weight reader, Magnetic door sensor as security on factory doors, ESP32 as a controller, and servo, buzzer, LCD, and SSR as an actuators driver. Testing was carried out by comparing the system's weighing results with a digital scale, then calculating the error value and MAPE. The results showed that the system can work automatically and in an integrated manner. The average MAPE value of 0.00128% indicates a high level of accuracy. This system is able to increase efficiency and accuracy in the animal feed production process.

Keywords: *Corn Grain, Automatic Weigher, Corn Grinder, Loadcell.*