ABSTRACT

The application of Internet of Things (IoT) technology in the livestock sector plays a significant role in improving operational efficiency and productivity. This research aims to develop an IoT-based monitoring system for tracking goat feed consumption and environmental condition in real-time. The system uses the HX711 Load Cell to measure feed weight, the AHT20 sensor to monitor temperature and humidity, and the ESP32 microcontroller for data processing and information transmission. To enhance measurement accuracy and reduce interference, the system implements a Kalman Filter. The collected data is displayed locally on the TFT LCD screen and can also be monitored remotely via Blynk platform or Desktop App. The results show that the system detects feed weight changes with an error of less than 1% and provides highly accurate environmental data. This system supports data-driven decision-making, feed optimization, and contributes to the development of precision animal husbandry.

Keywords: ESP32, Load Cell, AHT20, IoT, Real-time monitoring