

ABSTRAK

ALAT PEMANTAU DAN PENGONTROL TEMPERATUR KANDANG AYAM POTONG

(Muhamad Ikhsan 2025: xii + 38 halaman + Lampiran)

Lingkungan kandang, khususnya suhu, merupakan faktor penting yang memengaruhi kesehatan dan produktivitas ayam potong. Pada fase *brooding*, ayam sangat sensitif terhadap perubahan suhu sehingga diperlukan sistem yang mampu menjaga kondisi lingkungan tetap stabil. Penelitian ini bertujuan untuk merancang dan membangun alat pemantau serta pengontrol temperatur kandang ayam potong berbasis ESP32, sensor DHT11, modul relay, LCD 16x2, dan aplikasi *Blynk*. Sistem ini dirancang agar mampu membaca suhu secara *real-time*, menampilkannya pada LCD serta aplikasi Blynk, dan mengatur nyala lampu pemanas secara otomatis berdasarkan logika suhu yang telah ditentukan. Proses perancangan mencakup perakitan perangkat keras, pemrograman mikrokontroler, serta integrasi dengan platform IoT Blynk untuk monitoring jarak jauh. Hasil pengujian menunjukkan bahwa sensor mampu membaca suhu dengan akurasi baik, dan modul relay merespons dengan cepat ketika suhu melewati batas yang telah diprogram. Sistem juga menyediakan mode manual melalui aplikasi Blynk sehingga pengguna dapat mengendalikan lampu sesuai kebutuhan. Secara keseluruhan, alat ini bekerja stabil, mampu menjaga suhu kandang sesuai rentang ideal, dan dapat membantu peternak dalam meningkatkan efisiensi pengelolaan kandang ayam potong.

Kata Kunci: ESP32, DHT11, IoT, Blynk, Pemantauan Suhu, Kandang Ayam Potong, Relay, Sistem Otomatis

ABSTRACT

TEMPERATURE MONITORING AND CONTROL DEVICE FOR BROILER CHICKEN COOPS

(Muhamad Ikhsan 2025: xii + 38 Page + Appendices)

The environmental conditions of a poultry house, particularly temperature, play a crucial role in determining the health and productivity of broiler chickens. During the brooding phase, chicks are highly sensitive to temperature fluctuations, making it essential to maintain a stable and controlled environment. This project aims to design and develop a temperature monitoring and control device for broiler chicken coops using an ESP32 microcontroller, a DHT11 sensor, a relay module, a 16x2 LCD display, and the Blynk application. The system is designed to read temperature data in real time, display it on both the LCD and the Blynk application, and automatically regulate the heating lamps based on predefined temperature thresholds. The development process includes hardware assembly, microcontroller programming, and integration with the Blynk IoT platform to enable remote monitoring. Testing results show that the sensor delivers accurate temperature readings, and the relay module responds quickly when the temperature crosses the programmed limits. The system also supports a manual mode through the Blynk application, allowing users to control the lamps as needed. Overall, the device operates stably, successfully maintains the coop temperature within the ideal range, and assists farmers in improving efficiency in poultry house management.

Keywords: ESP32, DHT11, IoT, Blynk, Temperature Monitoring, Broiler Chicken House, Relay, Automation System.