ABSTRAK

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Program Studi   : Teknik Elektro

Judul   : Rancang Bangun Penghitung Benih Ikan Otomatis Berbasis

                                  Bobotnya

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Ikan lele sangat digemari oleh masyarakat Indonesia untuk dikonsumsi, sehingga budi dayanya banyak dilakukan. Namun, proses penghitungan benih ikan lele pada saat ini masih menggunakan cara manual atau volumetrik, sehingga tidak secara tepat menghitung jumlah ikan lele. Tugas akhir ini merancang bangun sistem penghitung benih ikan otomatis berbasis bobotnya yang dapat menghitung secara akurat jumlah dan bobot benih ikan. Sistem ini menggunakan sensor load cell dan modul HX711 untuk pengukuran bobot, mikrokontroller ESP32 sebagai pengendali, dan LCD untuk tampilan. Sistem berbasis Internet of Things (IoT), sehingga data dapat ditampilkan melalui platform Blynk yang dapat diakses menggunakan laptop atau handphone. Prinsip kerja sistem yaitu pertama mengambil data rata-rata benih ikan lele sebagai rujukan untuk menghitung jumlah benih ikan berdasarkan bobot ikan tersebut. Dari hasil pengujian yang dilakukan didapatkan nilai rata-rata persen error sensor load cell sebesar 1,19%, artinya persen error masih dalam batas toleransi. Pengujian posisi timbang benih ikan didapatkan selisih antara 0,13 – 0,30 gram. Bobot dan jumlah ikan berhasil ditampilkan pada LCD dan platform Blynk dan terdapat kesesuaian tampilan antara LCD dan platform Blynk.

Kata kunci: Penghitung Benih Ikan, Load Cell, ESP32, Internet of Things (IoT), Blynk, LCD.

ABSTRACT

Catfish are very popular among Indonesian people for consumption, so that their cultivation is widely carried out. However, the process of calculating catfish seeds currently still uses manual or volumetric methods, so that it does not accurately calculate the number of catfish. This final project designs an automatic fish seed counting system based on its weight that can accurately calculate the number and weight of fish seeds. This system uses a load cell sensor and HX711 module for weight measurement, an ESP32 microcontroller as a controller, and an LCD for display. The system is based on the Internet of Things (IoT), so that data can be displayed via the Blynk platform which can be accessed using a laptop or cellphone. The working principle of the system is to first take the average data of catfish seeds as a reference for calculating the number of fish seeds based on the weight of the fish. From the results of the tests carried out, the average value of the load cell sensor error percentage was 1.19%, meaning that the error percentage was still within the tolerance limit. Testing the position of the fish seed weigher obtained a difference between 0.13 - 0.30 grams. The weight and number of fish were successfully displayed on the LCD and the Blynk platform and there was a match between the LCD and the Blynk platform.

Keywords: Fish Seed Counter, Load Cell, ESP32, Internet of Things (IoT), Blynk, LCD.