

ABSTRACT

Vaname shrimp (Litopenaeus vannamei) is one of the most popular shrimp farms for farmers in Indonesia. Poor water quality can cause the vaname shrimp to contract diseases, one of which is white defecation. This disease causes vaname shrimp to lose appetite which results in slow growth. If left unchecked, it can cause death in vaname shrimp cultivation. To solve this problem, a water wheel is needed in order to maintain oxygen levels properly. The waterwheel needs to be monitored so that it can work as desired.

In this final project research designed a monitoring system for electric power in waterwheels in IoT-based shrimp ponds which aims to monitor the flow of electric power in waterwheels in shrimp ponds. This system uses the Arduino as a microcontroller, the Raspberry Pi as a microcomputer, the INA219 sensor to measure the current and voltage values of the waterwheel. The system consists of sensors and Arduino, the data obtained is then sent to Raspberry, then stored in the database, after which the data is sent to the IoT platform (Antares) which will be accessed via a web application.

From the test results and the implementation of the tools made, the percentage of current and voltage detection accuracy at the waterwheel to determine the use of electric power is 99.01% which is obtained from the average test results. This final project is able to monitor the current, voltage on the waterwheel and provide notification to the user in the form of an email if an error occurs. The hope is that this tool can be used by the aquaculture community so it will be easier to monitor water conditions.

Keywords: Electric Power, IoT, INA219 Current and Voltage Sensors.