ABSTRACT

Mud crabs are a type of crab that inhabit natural ecosystems, particularly thriving in the abundant mangrove environments found in Indonesia. The cultivation of mud crabs in Indonesia holds significant potential for enhancing economic value; however, several challenges remain, including the limited application of technology. This study aims to develop a Precision Aquaculture system based on the Internet of Things (IoT) to monitor water turbidity and dissolved oxygen levels in real-time during crab farming. The methodology employed includes data collection from dissolved oxygen sensors, turbidity sensors, and ammonia sensors to measure water turbidity, dissolved oxygen, and ammonia levels. Testing results indicate that the microcontroller successfully transmits sensor data to a web dashboard. The implementation of this system is expected to facilitate management in monitoring water turbidity, dissolved oxygen, and ammonia levels in mud crab farming, thereby reducing mortality risks and improving harvest yields.

Keywords: Precision Aquaculture, Internet of Things, Real-Time Monitoring, mud crab