

ABSTRACT

Mangrove crabs are one of the marine species with significant economic potential. Despite this large potential, the cultivation of mangrove crabs still tends to be manual, making the crabs vulnerable to harvest failure. This research aims to develop and implement a precision aquaculture system based on the Internet of Things (IoT) for mangrove crab farming. The purpose of this system is to monitor the condition of the crabs periodically without human intervention, where a stepper motor will move a camera to capture images and send them to a website. The method used includes literature review and prototyping. The results of this study show that the stepper motor is able to stop precisely above the crab box and send a signal to the ESP32-CAM to capture an image, returning to its initial position after reaching the final point. It is hoped that this research can improve the efficiency of crab farming by optimizing environmental conditions that support crab growth, reducing mortality risks, and increasing overall production yield.

Keywords: Precision aquaculture, Crab, monitoring, motor Stepper