

Abstract

In cultivating catfish, feeding is ideally done 4-6 times a day, however, the limited time of farmers causes irregular feeding which can affect the pH and ammonia content. Catfish pond water requires a pH of between 6 and 8 and an ammonia content of less than 0.1 ppm to prevent the fish from contracting disease, so a water change is necessary. The solution to this problem is to use an automatic system that provides food at the right time and in doses according to the weight of the catfish, as well as a water drainage system to maintain water quality. The pH-E4502C sensor and MQ-135 gas sensor are used to monitor the pH level and ammonia content in pool water, and the water draining system implements the fuzzy logic method to determine the duration of the active water pump in the pool water draining process. All actuator monitoring and control data can be accessed via a website. Fuzzy logic as an automatic water drain control runs well, with test results using Matlab showing an error difference of 0.138. The results of testing the catfish cultivation system were carried out for 10 days with feeding 4 times a day. At the start of cultivation, the catfish biomass was 192 grams with an average weight of 3.2 grams. After the 10th day, the fish biomass increased to 261 grams and the average weight was 4.6 grams.

Keywords: catfish, automatic feed, automatic drain, pH, ammonia, fuzzy logic.
