ABSTRACT

Floating net cage (KJA) fish farming requires special attention to water quality to prevent the risk of fish death due to changes in environmental parameters. This research aims to design and implement a sensor-based water quality monitoring system using Arduino nano microcontroller. The sensors used are DS18B20 temperature, pH, and DO sensors to detect water quality. The data generated by the sensors is further processed using fuzzy logic method with Mamdani type to increase the accuracy of detection which the results are displayed on the LCD in real-time. The results of this test were carried out for two days to show that this system is able to work effectively in processing fuzzy logic with a low error accuracy of less than 3%, compared to MATLAB® simulations. This research is also expected to develop in the addition of sensors in order to monitor water quality more comprehensively and also the calibration of sensors is carried out periodically in order to produce accurate data.

Keywords: Floating Net Cage (KJA), Industry Sensors, Water Quality, Fuzzy Logic