ABSTRACT

In the aquaculture system, the elements Carbon (C), Nitrogen (N), and Phosphorus (P) in the body of the fish which is a reflection of their feed, an average of 13%, 29%, and 16%, but the amount is very small in the body because it turns out that the feed only 20% -30% are eaten. The remaining 70% -80% can cause a low water quality and fish growth is less than optimal. Biofloc relies on oxygen supply and utilization of microorganisms which can directly convert Oxygen (O), Hydrogen (H), and Nitrogen (N) into sludge mass. Important factors in the biofloc system are the oxygen level, pH, and water temperature. Dissolved oxygen is needed so that the nitrification process takes place perfectly so that ammonia can be removed and the water pH remains stable. While temperature is a very important factor because together with the substances/elements contained therein it will determine the density of water, speed up chemical reactions of water and affect the amount of dissolved oxygen in water. This research aims to make it easier for fish farmers by making a device that can monitor water conditions and control oxygen levels in the water. The method used is to connect sensors to microcontroller connected to internet and connecting it to a relay connected to aerator. The results of this study indicate that oxygen levels, pH, and water temperature in biofloc ponds can be monitored and controlled via a smartphone making it easier to maintain water stability at all times.