

Abstract

In the catfish farming one of the factors that are currently lacking considered is the quality level of pH in water. Though these factors will determine the health and growth of catfish. The growers also find it difficult having to check the pH level of the pool water manually continuously. pH is good for the growth of catfish ranging between 6.5 - 8. Delays in treatment can cause adverse effects to the health of catfish, which can lead to mass death. One way that can be done to address the problem is to know the pH of the water quality quickly and accurately, and also able to provide early warning.

To implement a monitoring system in this final project proposed a system using the pH sensor with android basis. A system capable of automatically detecting the pH level of water using 802.15.4 technology that will be accessed via android smartphone. The use of smartphones as end-device selected for portable so users can determine the condition of the pH level of the water in realtime at any time. This system is implemented on an 2x2x1m size where there are two sensors that are used to obtain the overall condition of the ponds. Sensor 1 is placed on the area of catfish slightly gathered, while the second sensor is placed on the area of catfish crowds gather.

The results obtained in both 2x24 hour immersion sensor changes the pH toward acidic, where the sensor 1 from 6.85 to 6.71 while the sensor 2 from 6.67 to 6.6. Changes in the value of the pH level in the area of sensor 1 tend to be more stable than the sensor area 2 and also in the area of sensor 2 levels obtained more acidic pH than the sensor area 1. Use of 2 sensors has been able to monitor the entire pool for the size of 2x2x1m. For accuracy, Sensor 1 has an average difference of $\text{pH} \pm 0.022$ and sensor 2 has an average difference of ± 0.028 pH on the pH meter. To test the application, the application on android is able to give an alarm when conditions are not ideal occurred, ie outside the range of 6.5 to 8.

Keywords : pH, M2M, android, RSSI.