ABSTRACT

The need for world fish according to FAO, the UN food organization is experiencing growth beyond the growth of the world population. According to the director general of fisheries Cultivate the Ministry of Maritime Affairs and Fisheries (KKP) as quoted on the antaranews website on September 29, 2018, this must be utilized by boosting national catfish production to expand the export market to several countries. One way that can be done is to increase production by maintaining water quality as a medium for living catfish.

In this final project a system is used to monitor water quality. This system is based on a wireless sensor network that results from *monitoring* can be seen on web pages. This system consists of a pH sensor and a temperature sensor used on the system that will be connected to the MQTT *broker*.

Based on the test results, testing on sensor node 1 obtained the percentage of errors for ph sensors amounted to 0.683% and 0.88027% for temperature sensors. And the sensor node 2 obtained the percentage of errors 0.575041% for ph sensors and 0.76137% for temperature sensors. In testing the QOS sensor node to the MQTT broker the largest delay value is obtained at a distance of 30 meters with 1 node of 543.3 ms and the smallest delay at a distance of 20 meters with 4 nodes with 4,836 ms delay. The greatest throughput value is obtained at a distance of 5 meters with 4 nodes at 1068 Bps and the value of throughput at a distance of 30 meters with 1 node at 313.5 Bps.

Keywords*: Sensor, Fish, Water, Wireless Sensor Network*