ABSTRACT

Fish ponds are one of the freshwater aquatic ecosystems that are often used for personal and business consumption in the form of cultivation. One of the important components that need to be considered in aquaculture cultivation is water quality. Water quality plays a major role in freshwater aquaculture activities. Good water quality is the key to creating an optimal environment for fish growth and health and preventing fish health problems or mortality due to poor water conditions. One of the important factors that must be done is to review the Oxidation Reduction Potential (ORP) parameters. The Oxidation Reduction Potential quality standard has a value of 300 and 500 mV. It can be said that the waters with these quality standards are considered healthy waters. Therefore we need a method for system development using the ORP SEN0464 DFRobot sensor and the Lynx-32 microcontroller as the main controller. This system also uses the Antares platform which is used as a storage medium for data sent from the microcontroller. Data collection in this study was carried out by testing 3 different fish pond water samples. The results of the study showed that sample 1 and sample 2 had ORP values that were in accordance with the quality standards of 358 mV and 309 mV while in sample 3 the results obtained were 146 mV which was still less than the ORP quality standard. So that sample 3 must be replaced with water in order to maintain the ORP value according to the quality standard and maintain the health quality of the fish in the sample. The results of the delay test obtained an average value of 295.723 ms, including the good category according to ITU-T G.1010.

Keywords: *Water quality, Oxidation Reduction Potential, ORP sensor SEN0464 DFRobot, Lynx-32, Antares platform*