ABSTRACT

One of the freshwater fish favored by the community is tilapia. Tilapia has several advantages, namely easy to breed, high survival rate, growth of tilapia is also relatively fast and relatively large in size. So that it is quite easy to do tilapia cultivation, but in tilapia cultivation, it is necessary to control several parameters that can affect the growth of tilapia. One of the important parameters in the development and growth of tilapia is the temperature and pH of the pond water. Tilapia rearing requires a water pH of approximately 6.5-8.5 and a water temperature of 25^0C-30^0C. If the temperature is very low, it will cause a decrease in the level of immunity (immunity) in tilapia, while a very high temperature will cause tilapia to be infected by bacteria and viruses. Meanwhile, an inappropriate pH causes fish to be stressed, susceptible to disease, and have low productivity and growth. In addition, pH is very important in aquaculture because it is related to the ability to grow and reproduce.

Therefore, in this study, a monitoring and supervision system for tilapia cultivation will be built using the DS18B20 sensor to read the temperature value and a pH sensor to read the pH of the pond water which will then be sent to the microcontroller for processing. The processed data will be sent via the Antares cloud so that it can be monitored by the user through an application on a smartphone. The system will read if the temperature and pH do not match then the cooling fan will turn on and the pump containing the pH solution will be active. The power supply used in this system is a 20 Wp solar panel module with a 12v battery. The output of this research is the system can monitor and control the temperature and pH of the pool water with a maximum error rate of 10%. This system will produce a control and monitoring system for tilapia cultivation so that the pH and water temperature are maintained and the system works well.

Keywords: ***antares, companion kodular, ds18b20, ESP8266, internet of things, pH module 4502c.***