ABSTRACT

As a country with the largest mangrove forest in the world, Indonesia has biological wealth in the form of soka crabs which have economic potential, Indonesia is also an exporter of these marine crustaceans, but in 2021 the value of crab exporters reached 614.25 million USD, this is due to natural factors, human activities, Therefore, it is necessary to utilise precision aquaculture technology that can increase the efficiency of cultivation through monitoring water quality by utilising sensors such as TDS (DS18B20), Ph (SEN0161), and temperature (DS18B20) sensors to determine the condition of water in crab cultivation media and the use of Firebase applications for IoT, because soka crabs have specific needs, namely temperature 22-25 ° C, pH 7.5-7.7, salinity 10-25 ppt in water. The results of this study show that the water temperature sensor is 24.7°C with an accuracy of 98.33%, the pH sensor is 9.15, the accuracy is 99.66%, and the salinity sensor is at 2.83 ppt, with an accuracy of 89.27% which is the measurement value in the crab cultivation media. The difference between the sensor value and the temperature benchmark tool is 0.43, pH 0.04, and salinity 0.37. From the information these values can be displayed on the 16x2 LCD and Firebase.

Keywords: Precision Aquaculture, water quality monitoring, Google Firebase, Mud crab