

ABSTRACT

Aquaponics is a technique for cultivating plants without using soil or commonly known as aquaculture. In this study, water spinach cultivation will be carried out using the NFT aquaponic planting method using catfish. The aquaponics system used will be divided into two sides, one using water temperature control while the other does not use water temperature control. In the control system used, an ideal temperature standard is set at 25°C - 30°C, and uses the Mamdani fuzzy logic control method. The reason for setting a standard temperature of 25-30°C is based on the ideal water temperature of water spinach plants at 25°C - 30°C and catfish at 25-32°C. This is also considered based on the temperature of the city of Bandung in 2020, so in this study it was determined to conduct research centered on the effect of water temperature on water spinach plants using an aquaponic system. This study uses an android application as a monitoring tool, and the monitoring application used is based on IoT. The actuator used is a heater, which will be controlled with a PWM output to adjust the heat generated. This study aims to design a water temperature control system in an IoT-based aquaponic system. The control and monitoring system aims to produce better water spinach growth and can grow faster. The results of this study were in the form of a comparison of the growth rate of water spinach that used a control system with those that did not use a control system.

Keywords : *Aquaponics, IoT, NFT, Fuzzy Logic.*