ABSTRACT

In this research, temperature and humidity were controlled in eggplant nursery room. The temperature required for eggplant nurseries is **25°C - 30°C** while the humidity is between **80% - 90%.** If the temperature and humidity are not suitable, it will affect the production of eggplant seeds. To maintain the temperature and humidity in the eggplant nursery room, a control system is needed. The control system used in this final project is fuzzy logic control with the help of the hysteresis method which will be processed by a microcontroller that works as the brain of the system. If the specified parameters do not match, then fuzzy logic will control the actuator in the form of a water pump, heater, or cooler to maintain the parameter value in accordance with defined parameter. Based on the results of experiment the temperature and humidity control system in eggplant nurseries, the control system design in the simulation and programming algorithm has a minimal error value with the average error in the test results of the air temperature sensor error is **0.18°C** and the temperature sensor accuracy reaches **99, 30%**, the humidity sensor error is **1,24%** and the sensor accuracy reaches **98,26%**. The use of a temperature and humidity control system can increase the growth of eggplant seedlings by **40.6% - 46.9%**.

Keywords: Temperature and humidity control system, Eggplant, Fuzzy Logic.