

ABSTRACT

Organic waste processing in Indonesia is still not perfect, with this imperfect processing of organic waste can cause environmental pollution that can damage nature. One solution that can overcome this is by cultivating maggot with organic waste as feed. However, maggot has a short life span and is also very sensitive to changes in temperature and humidity, so it is necessary to have a system that can regulate and monitor conditions in the maggot cultivation area. The system made consists of a DHT-22 sensor and several actuators with fuzzy logic control to regulate the temperature and humidity of the maggot cultivation system integrated with IoT. From the results of the temperature comparison, the accuracy of the DHT-22 sensor in measuring temperature is 99.9% and humidity is 99.8%. The regulated temperature has 5 conditions, namely cold, slightly cold, normal, slightly hot, and hot, for humidity itself it has 3 conditions, namely normal dry and humid. Based on observations, the monitoring process went well where the data sent to the IoT platform was 93.6%. In the process of controlling the temperature there are about 69.3% of the appropriate data and when controlling the humidity there is about 67.5% so that it can be said that the controlling process is not good. The growth of the maggots studied tended to be faster than the maggots that grew naturally, as evidenced on the 14th day the maggots studied had a size of 1.65 cm and entered the pre-pupa phase, while the maggots that grew naturally entered the pre-pupa phase on the 15th day. 16 and has an average size of 1.54 cm. The difference is caused by the intake of nutrients and maggots that are left at different temperatures and humidity.

Keywords: *DHT-22, Maggot, Temperature and Humidity*