# ABSTRACT

*The yield of the first kale was less than optimal due to environmental factors. In this research, an IoT-based environmental condition monitoring system has been created. Monitoring is conditioned using the mapping method, namely placing the system in five predetermined coordinates, with the aim of observing environmental conditions and their distribution in the greenhouse using the IoT system. Kangkung can grow well with temperatures of 20°C - 30°C and humidity above 60%. The average values of temperature and humidity in the greenhouse on July 16, 2022 are in the range of good conditions, namely 24.14°C to 25.9°C throughout the box and humidity of 70.56% to 88.46% during the day. The light intensity condition is not good in box A with an average of 8.27 Lux, while for other boxes it has an average of at least 13502 Lux to 39866 Lux, so it is necessary to make improvements to box A so that the light intensity can enter the greenhouse better. The pH conditions in the pond are 4.96 to 8.85, and the Electrical Conductivity (EC) value is zero due to the small number of fish in the pond. The discharge in box A is unstable because it turns on and off, while in box B the flowmeter does not work because the pump is off. Data is sent properly to Antares with the biggest packet loss is 5.71%.*

**Keyword:** *Aquaponics, IoT, mapping, monitoring, water spinach.*