

# **Aquaponics Quality Monitoring and Control System Sistem Based on Internet of Things (IoT)**

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## **ABSTRACT**

*Aquaponics is a sustainable agricultural system that combines aquaculture and hydroponic as a single symbiotic system. In an aquaponics system, the excretion results from animals contained in this system was used as natural nutrients for hydroponic plants. Meanwhile, animals that live in this system also got clean water that has been filtered naturally by plant roots. In aquaponic cultivation, an important factor that affects the development of ecosystems is the degree of acidity (PH) which has a direct impact on the absorption of nutrients in plant roots and the development of animals that live in this ecosystem. The degree of acidity (PH) of normal water for aquaponic ecosystems varies at a value of 6-7. From this research, a monitoring device using NodeMCU ESP8266 was produced in the form of an application as well as performing automatic actions in controlling pH, temperature and ec meter levels. Based on the system test results, the Analog PH Meter Kit sensor showed an average error of 0.12%, DS18B20 temperature with an average error of 0.10% and Analog Electrical Conductivity Meter 0.02%.*

**Keywords:** *Aquaponics, Arduino Uno, PH, Temperature, EC Meter.*