Analisis Kinerja Sistem *Internet of Things* (IoT) terhadap Pertumbuhan Tanaman Selada (*Lactuca sativa* L.) dalam Sistem Akuaponik

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Abstract

Aquaponics is one of the cultivation in agriculture by combining fish cultivation and vegetable crop cultivation. However, in conventional aquaponics systems, testing pond temperature, air temperature and humidity is still not effective so that it can cause tipburn and bolting in lettuce plants. The existence of technology such as the internet of things (IoT) can make conventional systems into automation systems. Before the technology is applied, it is necessary to analyze the performance of the technology. The purpose of this study is to analyze the performance of the IoT system in aquaponics on lettuce growth by comparing several parameters using two aquaponics installations, namely using IoT and conventional. The parameters studied were height, leaf width, weight gain and lettuce plant width. The test results showed that lettuce in conventional aquaponic systems experienced higher etiolation symptoms than lettuce in aquaponics using IoT. The height of conventional aquaponic lettuce is higher than that of aquaponic lettuce using IoT with a height difference of 0.8 – 2.8 cm. The width of conventional aquaponic lettuce plants is wider than that of aquaponic lettuce plants using IoT with a width difference of 3.5 cm. The leaf width of conventional aquaponic lettuce is smaller than that of aquaponic lettuce using IoT with a difference of 0.6 cm. The weight gain of aquaponic lettuce using IoT was one gram while conventional aquaponic lettuce did not increase in weight.

Keywords: *Internet of Things* (IoT), Aquaponics, Lettuce (*Lactuca sativa* L.)