Abstract

One of the solutions for food security is planting using hydroponic method and to increase productivity and help hydroponic grow faster and facilitate in monitoring hydroponic growth, sonic bloom and Internet of Things (IoT) are two technologies that can be used. However, in previous studies, the two sistems have not been interconnected. The aim of this study is to evaluate the effectiveness of the combination of the two sistems mentioned, hence creating an automated sonic bloom method in an IoT-based hydroponic sistem. To test the proposed method, this sistem is implemented with bok choy as the hydroponic plant using the DFT technique. The automated sonic bloom is embedded to the IoT sistem with DF player mini module, RTC module, and speakers. The evaluation is done by comparing growth parameters and the crop parameters. The results show that the sistem with sonic bloom produces fresh weight of 0,44 – 0,56 g and dry weight of 0,21 – 0,33 g. The mentioned results are superior to the sistem without sonic bloom, where fresh weight is 0,17 – 0,25 g and dry weight is 0,08 – 0,13 g. It can be concluded that the IoT-based sonic bloom sistem is effective in increasing the growth rate and hydroponic production rate.

Keywords : *Sonic Bloom***, IoT, Hydroponic**