

ABSTRACT

Kangkung is a fast-growing plant and is mostly done hydroponically because the technique is easier. Usually farmers check directly to the garden to see the development and growth of the kale. So it is necessary to test the growth of kale to see development and growth remotely by utilizing Internet of Things (IoT) technology combined with sonic bloom techniques taken from dangdut, jazz, murottal music using a frequency of 4,000 Hz. Sonic Bloom is a technique that uses sound waves to accelerate the opening of the leaf mouth (stomata) in plants. The parameters of monitoring productivity of kale plants are seen from plant height, room temperature and plant water temperature.

The application of the sonic bloom technique was successfully applied to water spinach plants with the average height of each treatment, namely dangdut music, jazz, murottal, and without music was 24.60 cm, 25.47 cm, 24.50 cm, 21.90 cm. The most influential result is jazz music with a height of 25.47 cm. The results of room temperature and water are fluctuating every day, depending on the temperature that occurs at any time. The hardware accuracy level for measuring plant height is 95.210%, room temperature measuring instrument is 96.103%, and water temperature measuring instrument is 96.308%. The best network performance in this study is the delivery test per 5 minutes during 1 hour observation with a distance of 1 meter with a delay value of 568.36 ms, 3403.06 bps throughput, and 0% packet loss. While the poor network performance is delivery per 1 minute for 1 hour of observation with a distance of 2 meters with a delay of 596.42 ms, throughput 3299.08 bps, and packet loss of 4.24%.

Key Word : Water Spinach, Internet of Things (IoT), Sonic Bloom, *Quality of Service* (QoS).