

## **ABSTRACT**

*There are many ways that farmers do to maximize and simplify the farming process, one of which is applying mulching techniques to plants. Mulch is a covering material for cultivated plants that functions to keep the soil moist and suppress the growth of weeds and diseases so that the plants grow well. The application of mulching techniques to plants will be more effective if combined with the Smart Garden System. This system also functions as a monitoring of moisture in the soil covered with mulch. By knowing this, farmers can more easily adjust the water content according to soil needs and make plant growth more optimal. The working system of the tool in this study uses the calculation of soil moisture conditions on the YL-69 humidity sensor using two samples, namely dry and wet conditions. The value of the moisture measurement carried out on dry soil is 1900 and on wet soil is 600 where this value will determine the percent value (%) which will be displayed on the LCD and messages on the Telegram Bot. After doing the research, the measurement value obtained on dry soil conditions has an average value of 1351 and on wet soil an average value of 875. The results of the Quality of Services test on the delay parameter in this study showed a good category according to the typhoon index with a delay value of 183,464 millisecond.*

**Keywords:** *Mulch, Smart Garden System, Bot Telegram, IoT, Delay.*