

ABSTRACT

Melon is a fruit commodity that is popular with the public because it has the advantage of a sweet taste, varied flesh color, crunchy flesh texture and distinctive aroma. The use of inorganic fertilizers has been used continuously for decades, causing the soil to become hard, the microorganisms in the soil to disappear, and the organic matter content of the soil to decrease. In connection with the program to increase production and efforts to reduce imports, organic fertilizer has now begun to be applied to soil to increase soil fertility physically and biologically, as well as in water use, one of the problems in melon cultivation is the need for water for plants. The aim of this research was to determine the effect of providing organic fertilizer and water volume on the growth and yield of melon plants. This research was carried out in the screen house, Faculty of Agriculture, Malikussaleh University. This research was conducted for 3 months starting from November 2023 - January 2024. This research was conducted using a two-factor randomized block design with three replications. The first factor is organic fertilizer which consists of 3 levels, namely = P0=Control, P1=Straw compost (300 g/polybag), P2=POC *Mucuna bracteata* (300 ml/polybag). The second factor is the volume of water given, consisting of 3 levels, namely = A1=1000 ml/polybag, A2=1500 ml/polybag, A3=2000 ml/polybag. The results of the research show that the application of organic fertilizer has a very significant difference in all the parameters observed. Giving water volume showed very significant different results for all variables. There is an interaction between the combination of organic fertilizer and water volume on the total dissolved solids variable Brix% and root length the total dissolved solids variable Brix% and root length.

Keywords : compost, *Mucuna bracteata*, nutrient, soil, rice straw.