

## ABSTRACT

Oil palm plants (*Elaeis guineensis* Jacq.) are Indonesia's leading commodity in international trade. Palm oil is included in Indonesia's ten main export commodities which are very competitive in international trade. The increase in the area of oil palm plantations in Indonesia in 2017-2021 was 7.35%. In 2017 the area of oil palm plantations reached 14.05 million ha, then increased in 2021 to 15.08 million ha. As the expansion of oil palm land increases, what needs to be done is to provide oil palm seeds in large quantities and provide quality oil palm seeds. As for efforts to obtain quality oil palm seeds, it is necessary to pay attention to the nutrients given to oil palm seeds so that they can help the growth of oil palm seedlings. This research aims to see the growth response of oil palm seedlings due to the provision of organic fertilizer from goat urine and coffee grounds waste at the pre nursery. This research was carried out at the Experimental Field and Laboratory of the Faculty of Agriculture, Malikussaleh University. This research was conducted December 2023 to March 2024. The variables observed included plant height, stem diameter, number of leaves, leaf chlorophyll content, plant shoot wet weight, plant shoot dry weight, root length, root volume, root wet weight, and root dry weight. This research used a Factorial Randomized Block Design (RAK) with two factors, the first factor was the concentration of Liquid Organic Fertilizer in goat urine which consisted of 3 levels, namely, PO = Control, P1 = 115 ml/l water and P2 = 130 ml/l water. The second factor is the application of coffee grounds waste which consists of 4 levels, namely K0 = Control, K1 = 100 g/polybag, K2 = 200 g/polybag, and K3 = 300 g/polybag. The results of this study indicate that there is an interaction between the treatment of liquid organic fertilizer with goat urine and coffee grounds waste aged 11 WAP on plant height variables. Goat urine liquid organic fertilizer treatment had an effect on all observed variables. The application of coffee grounds waste affected all observations. The observation results show that using a concentration of 115 ml/l of water for the concentration of Liquid Organic Fertilizer in goat urine and 130 g/polybag for the concentration of coffee grounds waste is the best dose for all observed variables.

Keywords: NPK content, Influential, Interaction