

ABSTRACT

Oil palm (*Elaeis guineensis* Jacq.) is a plantation crop that plays a crucial role as a primary raw material in Indonesia and is expected to increase the income of oil palm farmers. This study aimed to determine the effect of cow manure and urea fertilizer on the growth of oil palm seedlings in the pre-nursery phase. This research was conducted at the experimental field of Malikussaleh University, Muara Batu District, North Aceh Regency. This study was conducted from December 2024 to February 2025. This study used a randomized block design (RBD) with two factors tested. The first factor was urea fertilizer, consisting of three levels: U0 = (control), U1 = (3 g/polybag), and U2 = (5 g/polybag). The second factor, cow manure fertilizer, consisted of three levels: P0 = (control), P1 = (200 g/polybag), and P2 = (300 g/polybag). Nine treatment combinations with three replications resulted in 27 experimental units. Observed variables were plant height, stem diameter, number of leaves, leaf chlorophyll content, root length, and plant fresh weight. The results showed that urea fertilizer treatment affected leaf number at 30 days after planting, leaf chlorophyll content at 90 days after planting, and plant fresh weight at 90 days after planting, with the best treatment being at a dose of 3 g urea per polybag. Cow manure treatment had no effect on the growth of pre-nursery oil palm seedlings. There was no interaction between urea and cow manure treatments on the growth of pre-nursery oil palm seedlings.

Keywords: Oil Palm, Inorganic Fertilizer, Organic Fertilizer