

## ABSTRACT

Oil palm (*Elaeis guineensis* Jacq.) is a crucial plantation commodity in Indonesia, providing essential oil for daily consumption. This study investigated the effects of goat urine and cow manure application on oil palm seedling growth during the pre-nursery phase. The research was conducted from March to May 2025 at Malikussaleh University's experimental garden and agricultural laboratory, Dewantara District, North Aceh Regency. A two-factor Randomized Block Design (RBD) with three replications was employed. The first factor examined goat urine concentrations: K0 (0 ml/control), K1 (100 mL/L<sup>-1</sup>), K2 (200 mL/L<sup>-1</sup>), and K3 (300 mL/L<sup>-1</sup>). The second factor tested cow manure doses: P0 (0 grams/control), P1 (100 grams/polybag), P2 (200 grams/polybag), and P3 (300 grams/polybag). Variables measured included plant height, stem diameter, leaf number, chlorophyll content, root length, fresh weight, and dry weight. The results showed that goat urine treatment significantly influenced plant height (5-13 WAP), stem diameter (5-13 WAP), leaf number (9-13 WAP), chlorophyll content (9-13 WAP), and fresh plant weight. The optimal goat urine concentration was 200 mL/L<sup>-1</sup>. Cow manure application enhanced plant height (5-13 WAP), stem diameter (5-13 WAP), leaf number (5-13 WAP), and chlorophyll content (5, 9-13 WAP), with 200 grams/polybag being the most effective dose. An interaction between goat urine and cow manure treatments was observed for leaf number variables (9-13 WAP). The combination of 200 ml/liter goat urine with 200 grams cow manure per polybag yielded the best overall growth performance, suggesting this treatment combination as optimal for oil palm pre-nursery cultivation.

Keywords: oil palm, concentration, excretion, dose