

Albertus Dwinandre Geraldo Prabowo (134080007). The Study of NPK Fertilizer and Vesicular Mycorrhiza Arbuskular (VMA) Inoculation applications on The Growth of Oil Palm Seedlings (Elaeis guineensis Jacq). Under the guidance of Mr. HK. Mustadjab., and Mr. Wahyu Widodo.

ABSTRACT

The objectives of this study were to assess whether there is an interaction between the NPK fertilizer application and vesicular mycorrhiza arbuscular inoculation on the growth of oil palm seedlings and to obtain the appropriate dose of NPK fertilizer and vesicular mycorrhiza arbuscular in the early stages of oil palm seedlings nurseries. The research used Completely Randomize Design method with two factors. The first factor are NPK fertilizer application which consisting 3 cedars, (P₁) 1 g/plant, (P₂) 2 g/plant and (P₃) 3 g/plant of NPK fertilizer doses. The second factor are vesicular mycorrhiza arbuscular inoculation which consisting 3 cedars, (M₁) 10 g/plant, (M₂) 15 g/plant and (M₃) 20g/plant of vesicular mycorrhiza arbuscular doses. From those two factors, formed 9 combined treatment plus 1 treatment as a control treatment. Observed parameters included height of plant (cm), total of leaf (leaves), plant fresh weight (g), plant dry weight (g), root dry weight (g), length of root (cm), volume of root (ml) and the degree of VMA infection (%).

The results show that (P₃) 3 g/plant dose of NPK fertilizer provide the best effect on the parameters total of leaf of plant 12 weeks after planting, plant dry weight, root dry weight, length of root and volume of root. (P₂) 2 g/plant dose of NPK fertilizer provide the best effect on the parameters total of leaf of plant 4 weeks and 8 weeks after planting and degree of VMA infection. (M₃) 20 g/plant dose of VMA inoculation provide the better effect than (M₁) 10 g/plant and (M₂) 15 g/plant on the parameters root dry weight, volume of root and degree of VMA infection. The results also showed significant difference against the control treatment on the parameters height of plant, total of leaf of plant 8 and 12 weeks after planting, plant fresh weight, plant dry weight, root dry weight, length of root, volume of root and the degree of VMA infection. There is no interaction between doses of NPK fertilizer treatment with VMA inoculation on each parameter.

Keywords : oil palm seedlings, NPK fertilizer, mycorrhiza.