

**APLIKASI KOMPOS BEKAS MAGGOT (*Hermetia illucens*) DARI LIMBAH
MAKANAN DAN PUPUK NPKMg TERHADAP PERTUMBUHAN BIBIT
KELAPA SAWIT (*Elaeis guineensis* Jacq.) PADA FASE *PRE NURSERY***

Oleh: Debby Aprilia Analita

Dibimbing oleh: Ellen Rosyelina Sasmita

ABSTRAK

Pemupukan kelapa sawit di pembibitan *pre nursery* dapat menggunakan pupuk organik dari limbah makanan hasil biokonversi maggot dan dikombinasikan dengan pupuk NPKMg. Penelitian bertujuan mengkaji interaksi antara dosis pupuk kasgot dan dosis NPKMg terhadap pertumbuhan bibit, mendapatkan dosis kasgot, dan dosis NPKMg yang paling baik bagi pertumbuhan bibit serta mengkaji dampak perlakuan kontrol dibandingkan perlakuan kombinasi terhadap pertumbuhan bibit. Penelitian dilakukan pada Desember 2024-April 2025 di rumah paranet Prodi Agroteknologi Universitas Pembangunan Nasional “Veteran” Yogyakarta. Penelitian menggunakan rancangan acak lengkap (RAL) dua faktor dan diulang 3 kali. Faktor pertama, dosis kasgot yaitu: 75, 150, dan 225 g/tanaman. Faktor kedua, dosis NPKMg yaitu: 1,5; 2,5; dan 3,5 g/tanaman. Kemudian, ditambah perlakuan kontrol. Data dianalisis menggunakan *analysis of varian* (ANOVA) taraf uji 5%, uji kontras ortogonal untuk membandingkan kontrol dengan perlakuan kombinasi, dan diuji lanjut dengan *Duncan’s Multiple Range Test* (DMRT) taraf uji 5%. Hasil penelitian menunjukkan tidak terdapat interaksi antara perlakuan dosis kasgot dan dosis NPKMg terhadap semua parameter pengamatan. Perlakuan dosis kasgot 75 g/tanaman dan dosis NPKMg 1,5 gr/tanaman memberikan pertumbuhan paling baik pada parameter tinggi tanaman, diameter batang, jumlah daun, luas daun, jumlah klorofil total, panjang akar, bobot basah, dan bobot kering bibit kelapa sawit. Perlakuan kontrol berdampak paling baik dibandingkan perlakuan kombinasi pada seluruh parameter di semua umur pengamatan kecuali parameter jumlah klorofil total.

Kata Kunci: Kelapa sawit, *Pre Nursery*, Maggot, Pupuk NPKMg

**APPLICATION OF MAGGOT (*Hermetia illucens*) USED COMPOST FROM
FOOD WASTE AND NPKMg FERTILIZER ON THE GROWTH OF OIL
PALM (*Elaeis guineensis* Jacq.) SEEDLINGS IN THE *PRE NURSERY***

By: Debby Aprilia Analita

Supervised by: Ellen Rosyelina Sasmita

ABSTRACT

Fertilization of oil palm in pre-nursery nurseries can use organic fertilizer from food waste resulting from maggot bioconversion and combined with NPKMg fertilizer. The study aims to examine the interaction between the dosage of kasgot fertilizer and NPKMg dosage on seedling growth, to obtain the best kasgot dosage and NPKMg dosage for seedling growth and to examine the impact of the control treatment compared to the combination treatment on seedling growth. The study was conducted from December 2024 to April 2025 at the paranet house of the Agrotechnology Study Program, Universitas Pembangunan Nasional “Veteran” Yogyakarta. The study used a completely randomized design (CRD) with two factors and was repeated three times. The first factor, kasgot dosage, namely: 75, 150, and 225 g/plant. The second factor, NPKMg dosage, namely: 1.5; 2.5; and 3.5 g/plant. Then, a control treatment was added. Data were analyzed using analysis of variance (ANOVA) at a 5% test level, orthogonal contrast test to compare the control with the combination treatment, and further tested with Duncan's Multiple Range Test (DMRT) at a 5% test level. The results showed no interaction between the kasgot dose treatment and the NPKMg dose on all observation parameters. The kasgot dose treatment of 75 g/plant and the NPKMg dose of 1.5 g/plant provided the best growth in the parameters of plant height, stem diameter, number of leaves, leaf area, total chlorophyll amount, root length, fresh weight, and dry weight of oil palm seedlings. The control treatment had the best impact compared to the combination treatment on all parameters at all observation ages except the total chlorophyll amount parameter.

Keywords: Oil palm, *Pre Nursery*, Maggot, NPKMg Fertilizer