# PENGARUH KOMBINASI BIOKOMPOS DAN PUPUK NPK TERHADAP PERTUMBUHAN TANAMAN DURIAN (*Durio zibethinus* Murr.) VARIETAS OTONG HASIL SAMBUNG PUCUK DI LAPANGAN

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## ABSTRAK

Durian (*Durio zibethinus* Murr.) merupakan buah tropis yang berasal dari hutan-hutan di wilayah Malaysia, Sumatra, dan Kalimantan. Buah durian telah lama dikenal dan digemari di kawasan Asia Tenggara karena cita rasa dan aromanya yang unik. Biokompos berperan signifikan dalam meningkatkan resiliensi dan tolerabilitas vegetasi terhadap fluktuasi kondisi lingkungan, dimana substansi tersebut berfungsi sebagai amelioran organik yang berkontribusi dalam optimalisasi daya dukung lahan melalui perbaikan karakteristik fisika-kimia tanah, meliputi sistem aerasi, densitas tanah, kapasitas tukar kation (KTK), ketersediaan nutrisi, water holding capacity (WHC), peningkatan populasi mikroorganisme rizosfer, serta berimplikasi pada reduksi penggunaan pupuk anorganik. Pupuk anorganik NPK adalah salah satu jenis pupuk yang dapat digunakan untuk memenuhi kebutuhan unsur hara makro yang dibutuhkan oleh tanaman. Tujuan penelitian ini adalah mengetahui pengaruh kombinasi biokompos dan pupuk NPK terhadap pertumbuhan tanaman durian varietas Otong hasil sambung pucuk di lapangan dan mendapatkan kombinasi dosis biokompos dan pupuk NPK untuk pertumbuhan tanaman durian varietas Otong hasil sambung pucuk yang terbaik di

lapangan.

Penelitian dilakukan di Teaching and Research Farm, Fakultas Pertanian Universitas Jambi, Mendalo Indah, Kecamatan Jambi Luar Kota, Kabupaten Muaro Jambi dengan jenis tanah Ultisol dengan ketinggian tempat ±35 mdpl dilaksanakan pada bulan Agustus sampai dengan November 2024. Penelitian menggunakan metode percobaan (eksperimen) yang disusun dalam Rancangan Acak Kelompok (RAK) dengan satu faktor yaitu kombinasi dosis biokompos dan pupuk NPK yang terdiri dari lima taraf perlakuan dan lima ulangan. Perlakuan yang diterapkan adalah sebagai berikut: p1 = 0 kg Biokompos + 400 gram NPK, p2 = 5 kg Biokompos + 300 gram NPK, p3 = 10 kg Biokompos + 200 gram NPK, p4 = 15 kg Biokompos + 100 gram NPK, p5 = 20 kg Biokompos + 0 gram NPK. Variabel yang diamati yaitu pertambahan tinggi tanaman (cm), pertambahan jumlah daun (helai), pertambahan diameter batang (mm), pertambahan jumlah cabang primer, pertambahan jumlah cabang sekunder dan pertambahan luas daun ($cm^2$).

Hasil penelitian dapat disimpulkan bahwa pemberian kombinasi dosis biokompos dan pupuk NPK berpengaruh terhadap semua variabel pengamatan yaitu pertambahan tinggi tanaman, pertambahan jumlah daun, pertambahan diameter batang, pertambahan cabang primer, pertambahan cabang sekunder, dan pertambahan luas daun tanaman durian varietas Otong. Dosis kombinasi biokompos dan pupuk NPK yang memberikan pertumbuhan tanaman durian terbaik adalah 10 kg Biokompos dikombinasikan dengan 200 gram pupuk NPK.

Kata Kunci : *Durian Otong, Biokompos, Pupuk NPK*

## ABSTRACT

Durian (*Durio zibethinus* Murr.) is a tropical fruit native to the forests of Malaysia, Sumatra, and Kalimantan. Durian fruit has long been known and loved in Southeast Asia for its unique taste and aroma. Biocompost plays a significant role in improving the resilience and tolerance of vegetation to environmental fluctuations, where it functions as an organic ameliorant contributing to the optimization of land productivity through improvements in soil physical-chemical characteristics, including aeration systems, soil density, cation exchange capacity (CEC), nutrient availability, water holding capacity (WHC), increased rhizosphere

microorganism populations, and implications for reduced use of inorganic fertilizers. NPK inorganic fertilizer is one type of fertilizer that can be used to meet the macro nutrient requirements needed by plants. The objective of this study was to determine the effect of the combination of bio-compost and NPK fertilizer on the growth of Otong variety durian plants resulting from grafting in the field and to obtain the optimal combination of bio-compost and NPK fertilizer doses for the growth of Otong variety durian plants resulting from grafting in the field.

The study was conducted at the Teaching and Research Farm, Faculty of Agriculture, University of Jambi, Mendalo Indah, Jambi Luar Kota District, Muaro Jambi Regency, on Ultisol soil at an elevation of approximately 35 meters above sea level, from August to November 2024. The study employed an experimental design using a Randomized Block Design (RBD) with one factor: the combination of bio-compost and NPK fertilizer doses, consisting of five treatment levels and five replications. The treatments applied were as follows: p1 = 0 kg biocompost + 400 grams NPK, p2 = 5 kg biocompost + 300 grams NPK, p3 = 10 kg biocompost + 200 grams NPK, p4 = 15 kg biocompost + 100 grams NPK, p5 = 20 kg biocompost + 0 grams NPK. The observed variables were plant height increase (cm), leaf number increase (leaves), stem diameter increase (mm), primary branch number increase, secondary branch number increase, and leaf area increase ($cm^2$).

The research results can be concluded that the application of a combination of biocompost and NPK fertilizer doses affects all observed variables, namely plant height increase, leaf number increase, stem diameter increase, primary branch increase, secondary branch increase, and leaf area increase in Otong variety durian plants. The combination of biocompost and NPK fertilizer that produced the best growth in durian plants was 10 kg of biocompost combined with 200 grams of NPK fertilizer.

Keywords: *Otong Durian, Biocompost, NPK Fertilizer*