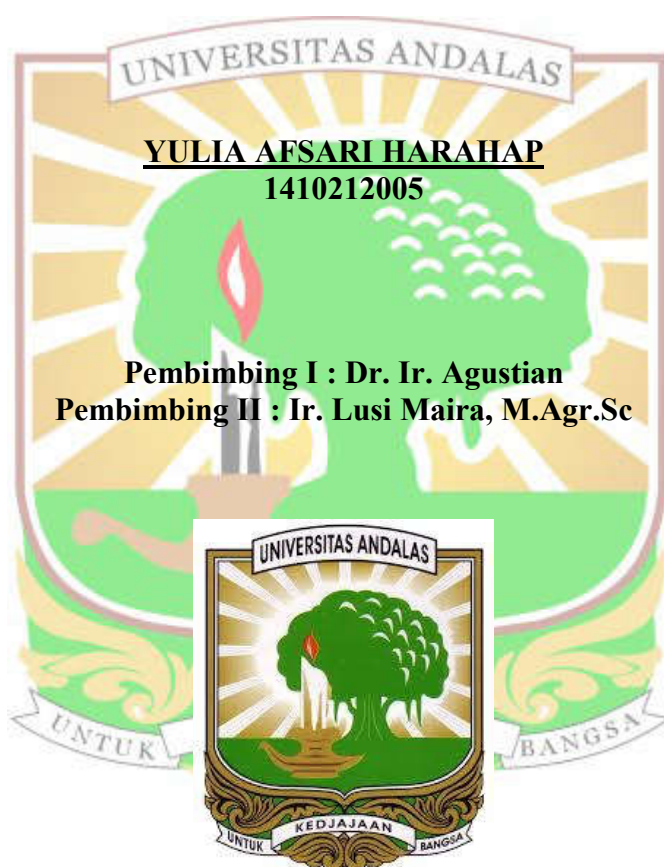


**PENGARUH PENAMBAHAN EM 4 DAN BEBERAPA
PRODUK CO-METABOLISME TERHADAP PENGOMPOSAN
SERASAH DAUN AKASIA (*Acacia mangium*)**

SKRIPSI

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Abstrak

Tanaman *Acacia mangium* memiliki potensi untuk dijadikan bahan baku kompos karena produktivitas serasah daun yang tinggi. Penambahan bioaktivator EM-4 dan beberapa produk co-metabolisme dapat mempercepat proses pengomposan. Penelitian ini bertujuan untuk mempelajari pengaruh EM-4 sebagai bioaktivator dan molase, dedak, serta kotoran sapi sebagai produk co-metabolisme terhadap pengomposan dan kualitas kompos serasah daun akasia. Penelitian ini dilaksanakan pada September 2018 hingga Mei 2019 di Kecamatan Pauh, Kota Padang. Analisis kompos dilakukan di Laboratorium Kimia dan Kesuburan Tanah Fakultas Pertanian Universitas Andalas. Penelitian ini menggunakan rancangan perlakuan *plus one test* yang terdiri dari 5 perlakuan dengan 3 ulangan antara lain A (kontrol), B (+EM4), C (+EM4 + molase), D (+EM4 + molase + dedak), E (+EM4 + molase + dedak + kotoran sapi). Unit percobaan menggunakan Rancangan Acak Lengkap (RAL). Hasil penelitian menunjukkan kompos D dengan penambahan EM4, molase, dan dedak mampu mencapai nisbah C/N terendah pada minggu kelima yaitu 17.85 dengan kadar N total tertinggi sebesar 2.21%. Sedangkan kompos E dengan penambahan EM4, molase, dedak, dan kotoran sapi mampu menghasilkan kandungan basa kompos tertinggi antara lain K-total sebesar 0.17%, Ca-total 0.14%, Mg-total sebesar 0.43%, dan Na-total sebesar 0.10%. Kompos serasah daun akasia telah mencapai tingkat kematangan stabil ditunjukkan oleh daya hambat yang rendah pada tes daya hambat perkecambahan benih kedelai, warna kompos berubah menjadi lebih gelap, dan penyusutan bobot kompos yang cukup besar.

Kata kunci : EM4, Co-metabolisme, Serasah Daun Akasia, Kompos

THE EFFECT OF ADDITION OF EM 4 AND SOME CO-METABOLISM PRODUCTS TO THE COMPOSTING OF AKASIA LEAVES (*Acacia mangium*)

Abstract

Acacia mangium has potential to be used as raw material for compost because of high productivity of the leaf litter. Addition of EM-4 bioactivator and several co-metabolic products can accelerate the composting process. This study was aimed to study the effect of EM-4 as bioactivator and molasses, bran, and cow dung as co-metabolic products on composting and the quality of acacia leaf litter compost. This research was conducted on September 2018 until May 2019 in Pauh, Padang City. Compost analysis was carried out at the Laboratory of Chemical and Soil Fertility, Faculty of Agriculture, Andalas University. This study used a treatment design “*plus one test*” consisting of 5 treatments with 3 replications including A (control), B (+ EM4), C (+ EM4 + molasses), D (+ EM4 + molasses + bran), E (+ EM4 + molasses + bran + cow dung). The experimental units were allocated based on Completely Randomized Design (CRD). The results showed that compost D with the addition of EM4, molasses, and bran was able to reach the lowest C/N ratio (17.85) and the highest total N content (2.21%) in the fifth week. While compost E with the addition of EM4, molasses, bran, and cow dung was able to produce the highest base content of the compost (K-total was 0.17%, Ca-total was 0.14%, Mg-total was 0.43%, and Na-total was 0.10%). The compost of acacia leaf litter had reached a stable maturity level indicated by the fact that the color of the compost became darker, the loss of the compost weight was quite large, and the inhibitory test on soybean seed germination was quite low.

Keywords: *EM4, Co-metabolism, Acacia Leaf Litter, Compost*