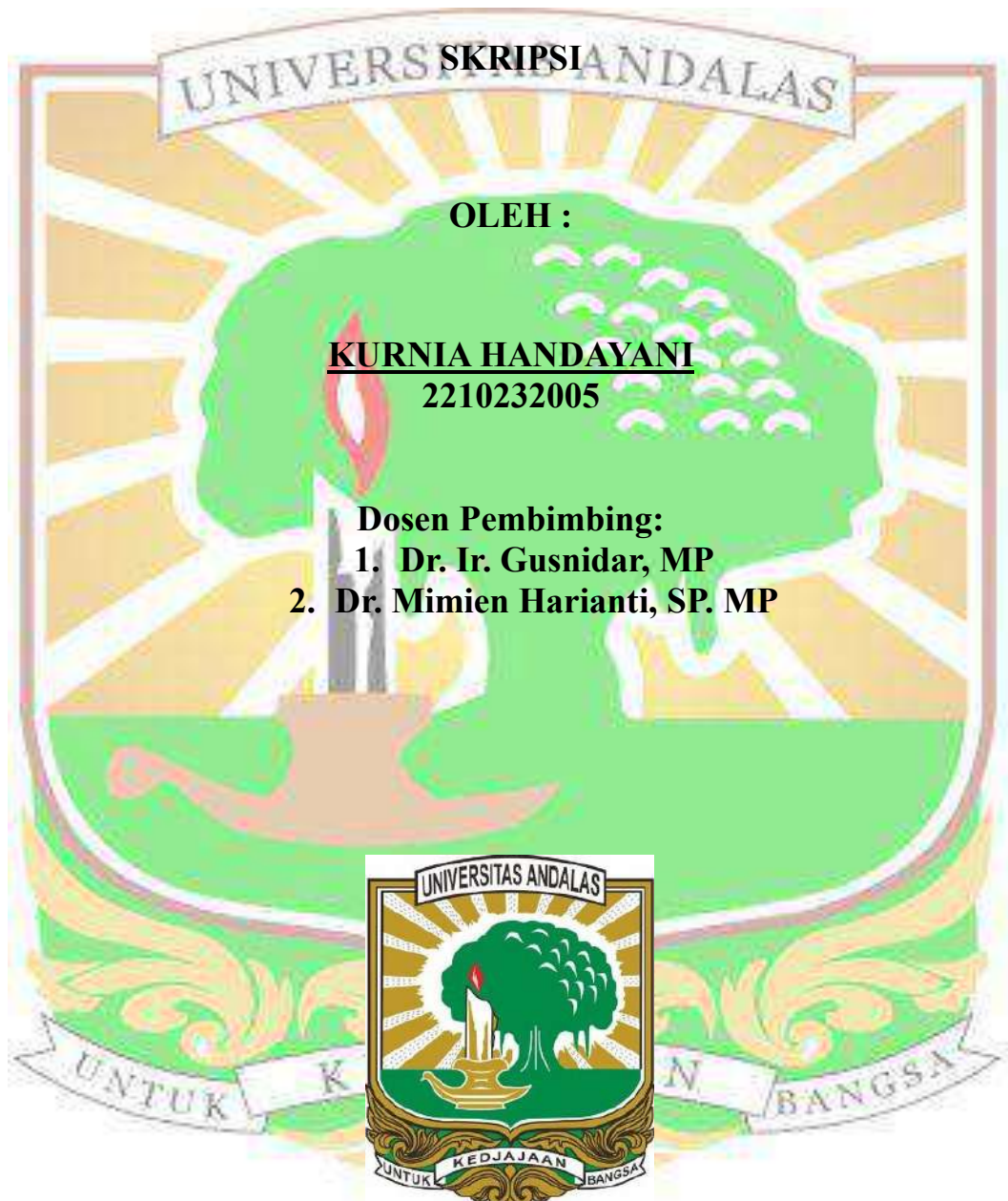


**EFEKTIVITAS PUPUK ORGANIK CAIR URIN KAMBING
DENGAN BERBAGAI DEKOMPOSER TERHADAP SERAPAN
NITROGEN (N) PAKCOY (*Brassica rapa. L*) DI REGOSOL**



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ABSTRAK

Regosol merupakan tanah mineral muda dengan kandungan bahan organik dan hara makro yang rendah sehingga kesuburannya terbatas. Salah satu upaya peningkatan kesuburan tanah adalah pemberian pupuk organik cair (POC) urin kambing yang difermentasi dengan berbagai dekomposer. Penelitian ini bertujuan untuk menentukan komposisi POC urin kambing terbaik yang difermentasi dengan tiga jenis dekomposer, yaitu MOB-6, De-Rizoba, dan EM-4, serta mengevaluasi pengaruhnya terhadap sifat kimia tanah Regosol dan serapan nitrogen tanaman pakcoy. Penelitian dilaksanakan di Rumah Kawat Fakultas Pertanian Universitas Andalas dan analisis laboratorium dilakukan di Laboratorium Kimia dan Kesuburan Tanah Universitas Andalas pada Desember 2025 hingga Maret 2026. Rancangan percobaan yang digunakan adalah Rancangan Acak Lengkap (RAL). Tahapan penelitian diawali dengan pengujian mutu sepuluh formulasi campuran urin kambing dan dekomposer, kemudian dipilih empat perlakuan terbaik berdasarkan standar mutu pupuk organik cair menurut Keputusan Menteri Pertanian No. 261/KPTS/SR.310/M/4/2019, yaitu 50%urin+50%MOB-6, 75%urin + 25%MOB-6, 75%urin+25%De-Rizoba, dan 75%urin+25%EM4. Parameter yang diamati meliputi sifat kimia POC (pH, C-Organik, N, P, K), sifat kimia tanah setelah panen, bobot tanaman pakcoy, dan serapan nitrogen tanaman. Hasil penelitian menunjukkan bahwa penambahan dekomposer mampu meningkatkan kualitas POC urin kambing, terutama pada kandungan C-Organik. Pemberian POC berpengaruh terhadap sifat kimia tanah Regosol, dengan pH tertinggi pada perlakuan 75%urin + 25%MOB-6, P-Tersedia tertinggi pada 50%urin+50%MOB-6, K-dd tertinggi pada 75%urin + 25%MOB-6, sedangkan N-Total tertinggi terdapat pada perlakuan urin kambing tanpa dekomposer. Pemberian POC dengan berbagai dekomposer belum memengaruhi bobot tanaman dan serapan nitrogen pakcoy dan nilainya relatif sama dengan urin tanpa dekomposer.

Kata kunci: pupuk organik cair, urin kambing, dekomposer, regosol, pakcoy.



THE EFFECTIVENESS OF LIQUID ORGANIC FERTILIZER MADE FROM GOAT URINE WITH VARIOUS DECOMPOSERS ON NITROGEN (N) UPTAKE BY PAKCOY (*Brassica rapa* L.) IN REGOSOL

ABSTRACT

Regosol is a young mineral soil with low levels of organic matter and macronutrients, resulting in limited fertility. One approach to improving soil fertility is the application of liquid organic fertilizer (LOF) made from goat urine fermented with various decomposers. This study aims to determine the optimal composition of goat urine-based liquid organic fertilizer fermented with three types of decomposers—MOB-6, De-Rizoba, and EM-4—and to evaluate its effects on the chemical properties of Regosol soil and nitrogen uptake by pak choi plants. The study was conducted at the Rumah Kawat facility of the Faculty of Agriculture, Andalas University, and laboratory analyses were performed at the Chemistry and Soil Fertility Laboratory of Andalas University from December 2025 to March 2026. A completely randomized design (CRD) was used. The research began with quality testing of ten formulations of goat urine and decomposer mixtures, followed by the selection of the four best treatments based on the quality standards for liquid organic fertilizer as stipulated in Ministry of Agriculture Decree No. 261/KPTS/SR. 310/M/4/2019, namely 50% urine + 50% MOB-6, 75% urine + 25% MOB-6, 75% urine + 25% De-Rizoba, and 75% urine + 25% EM4. The parameters observed included the chemical properties of the liquid organic fertilizer (pH, organic carbon, N, P, K), soil chemical properties after harvest, pak choi plant weight, and plant nitrogen uptake. The results showed that the addition of decomposers improved the quality of goat urine-based liquid organic fertilizer, particularly in terms of organic carbon content. The application of liquid organic fertilizer affected the properties

Keywords: liquid organic fertilizer, goat urine, decomposer, regosol, *Brassica rapa* L.