

PENGARUH PEMBERIAN KASGOT *BLACK SOLDIER FLY* (*Hermetia illucens*) TERHADAP PERTUMBUHAN DAN ANGKUTAN HARA N, P, K TANAMAN KEDELAI (*Glycine max* (L.)Meer.) PADA ULTISOL YANG DIKAPUR

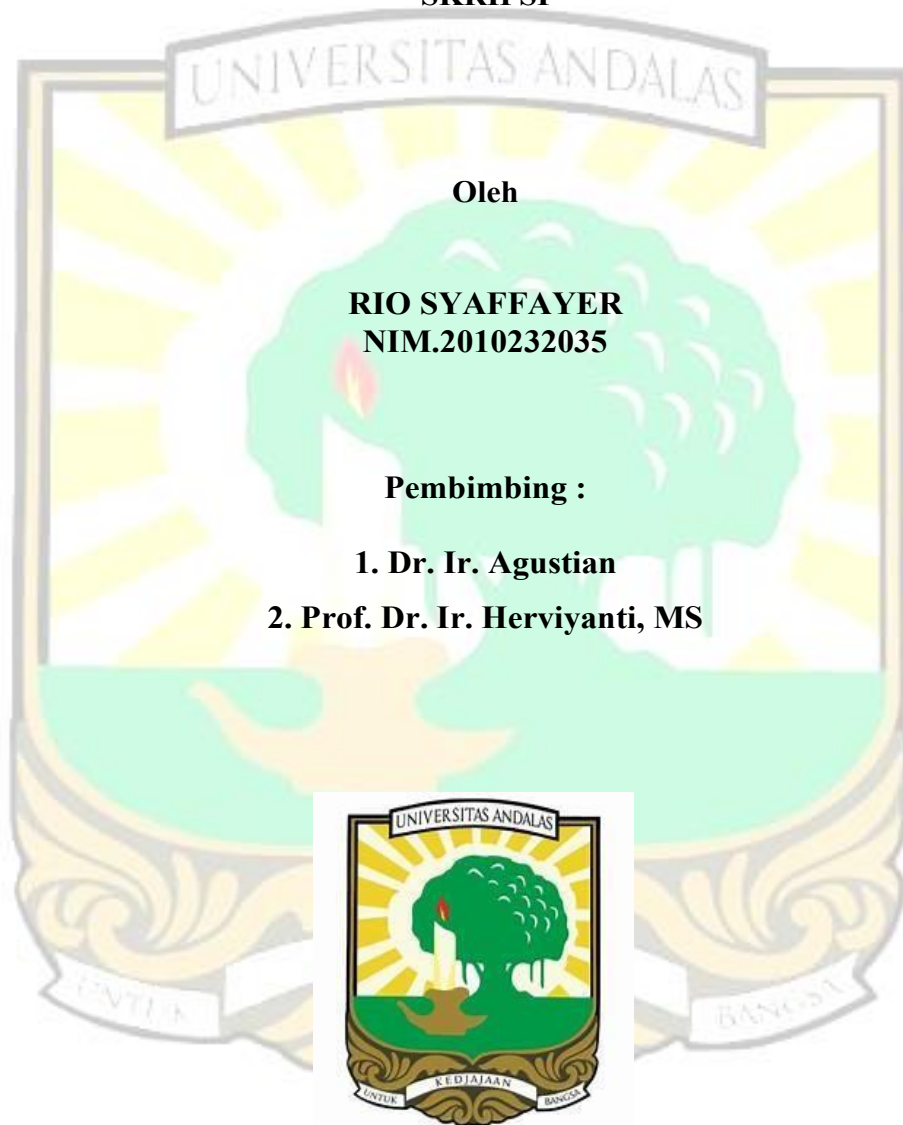
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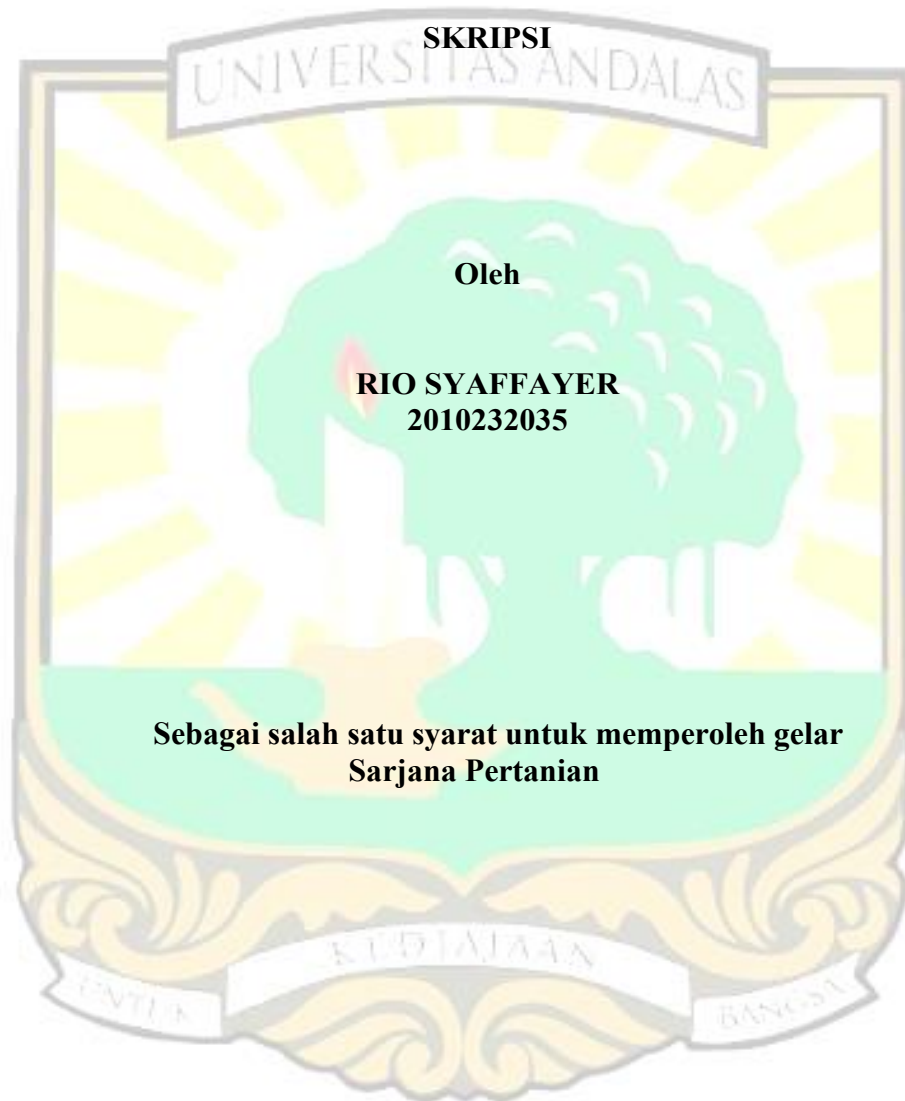
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**FAKULTAS PERTANIAN
UNIVERSITAS ANDALAS
PADANG
2026**

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Abstrak

Ultisol merupakan tanah masam yang memiliki kandungan bahan organik rendah serta ketersediaan unsur hara yang terbatas, sehingga dapat menghambat pertumbuhan dan hasil tanaman kedelai (*Glycine max* L.). Upaya perbaikan sifat kimia Ultisol dapat dilakukan melalui pengapuran dan penambahan bahan organik, salah satunya kasgot, yaitu residu hasil biokonversi sampah organik oleh larva Black Soldier Fly (*Hermetia illucens*). Penelitian ini bertujuan untuk mengetahui pengaruh pemberian kasgot terhadap perubahan sifat kimia tanah, pertumbuhan tanaman, dan angkutan hara nitrogen (N), fosfor (P), dan kalium (K) tanaman kedelai pada Ultisol yang dikapur. Penelitian dilaksanakan di rumah kaca Fakultas Pertanian Universitas Andalas menggunakan Rancangan Acak Lengkap (RAL) dengan lima perlakuan dosis kasgot, yaitu 0, 5, 10, 15, dan 20 ton/ha, masing-masing dengan tiga ulangan sehingga diperoleh 15 unit percobaan. Parameter yang diamati meliputi pH tanah, Al-dd, C-organik, N-total, rasio C/N, P-tersedia, kapasitas tukar kation, kation basa dapat tukar, kejenuhan basa, tinggi tanaman, bobot kering tanaman, bobot biji, serta angkutan hara N, P, dan K. Hasil penelitian menunjukkan bahwa perlakuan dosis kasgot 20 ton/ha memberikan hasil terbaik dengan peningkatan pH tanah, penurunan Al-dd, peningkatan bahan organik dan ketersediaan hara, serta menghasilkan bobot biji tertinggi sebesar 5,17 g/polybag dan nilai angkutan hara N, P, dan K mencapai 2,24 g/polybag, 0,252 g/polybag, 2,70 g/polybag.

Kata kunci: *Angkutan Hara, Black Soldier Fly, Kasgot, Kedelai, Ultisol.*

**THE EFFECT OF BLACK SOLDIER FLY (*Hermetia illucens*) SOLID
FERTILIZER APPLICATION ON GROWTH AND N, P, AND K
UPTAKE OF SOYBEAN (*Glycine max* (L.) Merr.) GROWN ON LIMED
ULTISOL**

Abstrack

Ultisols are acidic soils characterized by low organic matter content and limited nutrient availability, which can inhibit soybean (*Glycine max* L.) growth and yield. Improvement of the chemical properties of Ultisols can be achieved through liming and the addition of organic materials, including *kasgot*, a residue produced by the bioconversion of organic waste by Black Soldier Fly (*Hermetia illucens*) larvae. This study was aimed to determine the effect of *kasgot* application on changes in soil chemical properties, plant growth, and the uptake of nitrogen (N), phosphorus (P), and potassium (K) by soybean grown on limed Ultisol. The experiment consisted of five *kasgot* rates (0, 5, 10, 15, and 20 tons/ha), each with three replications, for a total of 15 experimental units, were allocated based on Complete Randomized Design (CRD) in glasses Faculty of Agriculture. The observed parameters included soil pH, exchangeable Al, organic carbon, total nitrogen, C/N ratio, available phosphorus, cation exchange capacity, exchangeable base cations, base saturation, plant height, plant dry weight, seed weight, and N, P, and K uptake. The results showed that the application of *kasgot* at a rate of 20 tons/ha produced the best results, as indicated by increased soil pH, reduced exchangeable Al, improved organic matter content and nutrient availability, and the highest seed weight of 5.17 g per polybag, with N, P, and K uptake reaching 2.24 g per polybag, 0.252 g per polybag, and 2.70 g per polybag.

Keywords: Black Soldier Fly, Nutrient Uptake, Solid Fertilizer, Soybean, Ultisol.