UNIVERSITAS
GADJAH MADA
**APLIKASI KOMPOS DAN POC URINE SAPI TERHADAP KETERSEDIAAN HARA MAKRO DAN PRODUKSI RUMPUT GAMA UMAMI
PADA ENTISOL BANGUNTAPAN, BANTUL**
Surya Adetya, Nasih Widya Yuwono, S.P., M.P. ; Prof. Dr. Ir. Sri Nuryani Hidayah Utami, M.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

INTISARI

Tanah Entisol memiliki tingkat kesuburan yang relatif rendah akibat kandungan bahan organik, kapasitas pertukaran kation (KPK), dan ketersediaan hara makro yang terbatas sehingga diperlukan upaya ameliorasi untuk meningkatkan produktivitas hijauan pakan. Penelitian ini bertujuan mengetahui pengaruh kombinasi dosis kompos dan pupuk organik cair (POC) urin sapi terhadap sifat kimia tanah Entisol, ketersediaan hara makro, kandungan dan serapan hara tanaman, pertumbuhan, serta produksi rumput gajah Gama Umami, serta menentukan perlakuan terbaik. Penelitian menggunakan Rancangan Acak Lengkap (RAL) nonfaktorial dengan 10 taraf perlakuan kombinasi kompos dan POC urin sapi, yaitu BK0P0, BK1P0, BK2P0, BK3P0, BK4P0, BK0P1, BK1P1, BK2P1, BK3P1, dan BK4P1, yang masing-masing diulang tiga kali. Hasil penelitian menunjukkan bahwa perlakuan berpengaruh nyata hingga sangat nyata terhadap C-organik, bahan organik, KPK, ketersediaan K, Ca, dan Mg tanah, serta kandungan dan serapan hara makro, tinggi tanaman, diameter batang, panjang akar, volume akar, bobot basah, dan bobot kering rumput gajah Gama Umami. Perlakuan BK4P1 memberikan hasil terbaik pada sebagian besar parameter, dengan C-organik 18,83%, KPK 13,66 cmol(+)/kg, K tersedia 0,41 cmol(+)/kg, tinggi tanaman 100,17 cm, bobot basah tajuk 170,00 g, bobot kering tajuk 42,90 g, dan volume akar 92,40 cm^3. Hasil tersebut menunjukkan bahwa BK4P1 efektif meningkatkan kualitas kimia tanah dan mendukung pertumbuhan serta produksi rumput gajah Gama Umami.

Kata kunci: kompos, pupuk organik cair urin sapi, Entisol, rumput gajah Gama Umami, ketersediaan hara makro.

UNIVERSITAS
GADJAH MADA
APLIKASI KOMPOS DAN POC URINE SAPI TERHADAP KETERSEDIAAN HARA MAKRO DAN PRODUKSI RUMPUT GAMA UMAMI PADA ENTISOL BANGUNTAPAN, BANTUL
Surya Adetya, Nasih Widya Yuwono, S.P., M.P. ; Prof. Dr. Ir. Sri Nuryani Hidayah Utami, M.P., M.Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

ABSTRACT

Entisols have relatively low fertility due to their limited organic matter content, cation exchange capacity (CEC), and availability of macronutrients, necessitating soil amelioration to improve forage productivity. This study aimed to determine the effects of different combinations of compost and cattle urine liquid organic fertilizer (LOF) on the chemical properties of Entisol, macronutrient availability, plant nutrient content and uptake, growth, and yield of Gama Umami elephant grass, as well as to determine the best treatment. The study employed a non-factorial Completely Randomized Design (CRD) with 10 treatment combinations of compost and cattle urine LOF, namely BK0P0, BK1P0, BK2P0, BK3P0, BK4P0, BK0P1, BK1P1, BK2P1, BK3P1, and BK4P1, with three replications each. The results showed that the treatments had significant to highly significant effects on soil organic carbon, organic matter, CEC, and the availability of K, Ca, and Mg, as well as plant macronutrient content and uptake, plant height, stem diameter, root length, root volume, fresh weight, and dry weight of Gama Umami elephant grass. Treatment BK4P1 produced the best results for most parameters, with soil organic carbon of 18.83%, CEC of 13.66 cmol(+)/kg, available K of 0.41 cmol(+)/kg, plant height of 100.17 cm, shoot fresh weight of 170.00 g, shoot dry weight of 42.90 g, and root volume of 92.40 cm³. These results indicate that BK4P1 effectively improves the chemical quality of Entisol and supports the growth and yield of Gama Umami elephant grass.

Keywords: *compost, cow urin liquid organic fertilizer, Entisol, Gama Umami elephant grass, macronutrient availability.*