PENGARUH PKG SERASAH KAMPUS UNPATTI DAN LIMBAH PERTANIAN TERHADAP FISIKO-KIMIA TANAH DAN HASIL JAGUNG (*Zea mays* L.) DI ULTISOL

The Effect of Unpatti Campus Waste Granular Compost and Agricultural Waste on Soil Physico-Chemical and Corn Production (*Zea mays* L.) in Ultisol

Maimuna La Habi[1]*, Muhammad Riadh Uluputty[2], Aminudin Umasangaji[3]
[1 2 3]Prodi Agroteknologi, Fakultas Pertanian, Universitas Pattimura, Ambon
*E-mail: maimunalahabi10@gmail.com | DOI: https://doi.org/10.30598/PattimuraSci.2022.HAIPBMAL.12-22

Abstrak. Penelitian bertujuan untuk mengetahui pengaruh pemberian pupuk kompos granul (PKG) serasah kampus Unpatti terhadap sifat fisik-kimia tanah dan hasil jagung di Ultisol. Rancangan penelitian menggunakan Rancangan Acak Kelompok dengan tiga kali ulangan. Perlakuan terdiri dari: tanpa pupuk (KGSK1), kompos granul 8 t ha^{-1} (KGSK2), pupuk anorganik (Urea, SP-36, dan KCl) dosis anjuran (KGSK3), pupuk anorganik + kompos granul 8 t ha^{-1} (KGSK4), ½ x dosis pupuk anorganik + kompos granul (8 t ha^{-1}) (KGSK5), 2 kali dosis pupuk anorganik + kompos granul 8 t ha^{-1} (KGSK6), ½ x dosis pupuk anorganik + kompos granule 12 t ha^{-1} (KGSK7) dan 2 kali dosis pupuk anorganik + kompos 4 t ha^{-1} (KGSK8). PKG serasah kampus dan pupuk anorganik berpengaruh nyata terhadap fisik tanah yaitu berat volume tanah (0,82 g cm^{-3}), berat jenis butiran tanah (2,32 g cm^{-3}), porositas tanah (7,79%), pori drainase cepat (23,55%), pori drainase lambat (8,84%), pori air tersedia (11,63%), dan pori air tidak tersedia (11,32%). Sedangkan pertumbuhan tanaman dan hasil jagung masing-masing sebesar 249,19 cm dan 7,89 ton ha^{-1}. Kombinasi PKG dan pupuk anorganik mampu meningkatkan hasil 35%−48% dibandingkan dengan pemberian pupuk anorganik maupun PKG serasah kampus saja. Pemberian pupuk anorganik berlebihan ternyata tidak menunjukkan peningkatan hasil jagung yang nyata. Berdasarkan hasil penelitian ini, pengurangan setengah dosis pupuk anorganik yang dikombinasikan dengan PKG serasah kampus 12 t ha^{-1} menghasilkan hasil biji kering pipilan jagung tertinggi (7.89 t ha^{-1}) atau meningkatkan hasil 35% dari aplikasi pupuk anorganik.

Kata kunci: jagung, fisik tanah, pupuk kompos granul, ultisol

Abstract. The aim of the study is to determine the effect of campus waste Granular Compost Fertilizer (GCF) and agricultural waste on soil physico-chemical and corn (*Zea mays* L.) in Ultisol. The research design using a randomized block design with three replications. Treatment consisted of: no fertilizer (KGSK1), with granular compost 8 t ha^{-1}. (KGSK2), inorganic fertilizer (Urea, SP-36, and KCl), recommended dosage (KGSK3), inorganic fertilizer + granular compost 8 t ha^{-1} (KGSK4), ½ x dose of inorganic fertilizer + ranular compost 8 t ha^{-1} (KGSK5), 2 doses of inorganic fertilizer + granular compost 8 t ha^{-1} (KGSK6), ½ x dose of inorganic fertilizer + granular compost 12 t ha^{-1} (KGSK7) and 2 times the dose of inorganic fertilizer + granular compost 4 t ha^{-1} (KGSK8). The results showed that GCF and inorganic fertilizers significantly affect the soil physical that is categorized into heavy bulk density (0.80 g cm^{-3}), soil particle density (2.32 g cm^{-3}), soil porosity (7.79%), fast drainage pore (23.55%), slow drainage pore (8.84%), available water pore (11.63%), and unavailable water pore (11.31%). On the other hand, the plant growth and corn production results amounted to 249.19 cm and 7.89 tons ha^{-1}. The combination of GCF and inorganic fertilizers can increase yields by 35%−48% compared to the application of both inorganic fertilizers and GCF. Excessive application of inorganic fertilizers did not show a significant increase in corn yields. Based on these results, the reduction of a half dose of inorganic fertilizer combined with granular compost 12 t ha^{-1} revealed the highest of dry shelled corn yield (7.89 t ha^{-1}).

Keywords: corn, soil physical, granule compost fertilizer, ultisol