

PENGARUH BEBERAPA JENIS KOMPOS TERHADAP NITROGEN DAN KALIUM PADA ULTISOL SERTA PERTUMBUHAN TANAMAN MANGGIS

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ABSTRACT

Ultisol is a type of mineral soil that has undergone advanced development. Ultisol has great potential for use in agricultural development. However, Ultisol has limiting factors that hinder optimal agricultural and plantation productivity. The main limiting factor in the use of Ultisol for agriculture is its low soil fertility. The lack of nutrients is one of the main obstacles to plant growth. One effort to increase the productivity of Ultisol and improve its chemical properties is the application of organic materials such as compost. This study aims to examine the effect of compost on improving total nitrogen (N-total) content and exchangeable potassium (K-exchangeable) in Ultisol, as well as identifying the best growth improvement in mangosteen plants. The study used a Randomized Complete Block Design (RCBD) with 9 treatments and 3 replications. The treatments consisted of: k0: No compost, using recommended artificial fertilizer, k1: Compost mixture of cow manure + dry leaves, k2: Compost mixture of cow manure + dry leaves + BFA, k3: Compost mixture of cow manure + dry leaves + boiler ash, k4: Compost mixture of cow manure + dry leaves + BFA + boiler ash, k5: Compost mixture of chicken manure + dry leaves, k6: Compost mixture of chicken manure + dry leaves + BFA, k7: Compost mixture of chicken manure + dry leaves + boiler ash, k8: Compost mixture of chicken manure + dry leaves + BFA + boiler ash. The observed parameters included N-total, exchangeable K, plant height, number of leaves, and stem diameter. The results showed that the application of several types of compost can increase N-total and exchangeable K levels in Ultisol as well as enhance the growth of mangosteen plants.

Keywords: Ultisol, Compost, N-total, Exchangeable K, Mangosteen Plant

ABSTRAK

Ultisol merupakan tanah mineral yang telah mengalami perkembangan lanjut. Ultisol sangat potensial untuk dimanfaatkan dalam pengembangan pertanian. Ultisol memiliki faktor pembatas dalam mewujudkan produktivitas pertanian dan perkebunan yang optimal. Faktor pembatas pemanfaatan Ultisol pada bidang pertanian ialah tingkat kesuburan tanah yang rendah. Kekurangan unsur hara merupakan salah satu penghambat pertumbuhan tanaman. Salah satu upaya untuk meningkatkan produktivitas Ultisol dan memperbaiki sifat kimia tanah dengan melakukan pemberian bahan organik seperti kompos. Penelitian ini bertujuan untuk mengkaji pengaruh kompos dalam memperbaiki kadar N-total dan Kalium dapat ditukar pada Ultisol, serta peningkatan pertumbuhan terbaik pada Tanaman Manggis. Penelitian ini menggunakan metode Rancangan Acak Kelompok 9 perlakuan dan 3 ulangan. Perlakuan yang digunakan terdiri dari k_0 : Tanpa kompos, menggunakan pupuk buatan sesuai rekomendasi, k_1 : Kompos campuran kotoran sapi + dedaunan kering, k_2 : Kompos campuran kotoran sapi + dedaunan kering+ BFA, k_3 : Kompos campuran kotoran sapi + dedaunan kering+ abu boiler, k_4 : Kompos campuran kotoran sapi + dedaunan kering+ BFA + abu boiler, k_5 : Kompos campuran kotoran ayam + dedaunan kering, k_6 : Kompos campuran kotoran ayam + dedaunan kering+ BFA, k_7 : Kompos campuran kotoran ayam + dedaunan kering+ abu boiler, k_8 : Kompos campuran kotoran ayam + dedaunan kering+ BFA + abu boiler. meliputi N-total, K-dapat ditukar, tinggi tanaman, jumlah daun, dan diameter batang. Hasil penelitian menunjukkan pemberian beberapa jenis kompos dapat meningkatkan kadar N-total dan K-dd Ultisol serta pertumbuhan tanaman manggis.

Kata Kunci: Ultisol, Kompos, N-total, K-dd, Tanaman Manggis