PENGARUH PEMBERIAN KALSIT TERHADAP BEBERAPA SIFAT KIMIA LATOSOL PATUK GUNUNGKIDUL

Oleh : Heru Handoyo Kurniawan
Dibimbing oleh : Djoko Mulyanto dan M. Nurcholis

ABSTRAK

Latosol adalah tanah yang mengalami perkembangan lanjut, status kesuburannya menurun khususnya nilai pH yang bersifat masam. Hal tersebut dapat berpengaruh terhadap menurunnya kadar P-tersedia yang mengganggu pertumbuhan tanaman. Penelitian bertujuan mengetahui pengaruh pemberian kalsit ($CaCO_3$) terhadap beberapa sifat kimia pada Latosol. Metode yang digunakan adalah percobaan yang disusun menggunakan Rancangan Acak Lengkap (RAL) satu faktor dengan tujuh perlakuan, yaitu: S0 = 0 Al-dd = 0 ton/ha kalsit setara 0 g/3,36 kg berat tanah kering angin, S1 = 0,5 Al-dd = 2,964 ton/ha kalsit setara 3,8 g/3,36 kg berat tanah kering angin, S2 = 1 Al-dd = 4,218 ton/ha kalsit setara 5,7 g/3,36 kg berat tanah kering angin, S3 = 1,5 Al-dd = 5,624 ton/ha kalsit setara 7,6 g/3,36 kg berat tanah kering angin, S4 = 2 Al-dd = 6,956 ton/ha kalsit setara 9,5 g/3,36 kg berat tanah kering angin, S5 = 2,5 Al-dd = 8,436 ton/ha kalsit setara 11,4 g/3,36 kg berat tanah kering angin, dan S6 = 3 Al-dd = 9,842 ton/ha kalsit setara 13,3 g/3,36 kg berat tanah kering angin. Setiap perlakuan diulang 3 kali menghasilkan 21unit percobaan. Pengolahan data untuk mengetahui pengaruh perlakuan digunakan sidik ragam *Anaysis of Varian* (ANOVA) dan diikuti dengan uji lanjutan menggunakan *Tukey* pada taraf uji nyata 95%. Parameter yang diamati adalah pH, KPK, P-tersedia, Al tertukar dan Oksida Fe, Al, Mn. Hasil penelitian menunjukkan bahwa pemberian kalsit berpengaruh nyata meningkatkan pH dan menurunkan Al^{3+} dan H^{+}, tetapi tidak berpengaruh nyata pada KPK, P-tersedia, oksida Fe, Al dan Mn.

Kata Kunci: *Kalsit, Latosol, Sifat kimia*

THE EFFECT OF CALCITE APPLICATION TO SEVERAL CHEMICAL PROPERTIES OF LATOSOL IN PATUK, GUNUNGKIDUL

By Heru Handoyo Kurniawan
Supervised by Djoko Mulyanto and M. Nurcholis

ABSTRACT

Latosol is an advanced weathering soil that its fertility status decreases mainly on acidic pH value. This issue effect to decrease P-available levels that interferes the plant growth. This study aims to determine the effect of calcite ($CaCO_3$) on several Latosol chemical properties. The method uses an experiment prepared using one-factor Completely Randomized Design (CRD) with seven treatments, namely: S0 = 0 Al-dd = 0 tons / ha calcite equivalent to 0 g/ 3.36 kg air-dried soil weight, S1 = 0,5 Al-dd = 2.964 tons/ ha calcite equivalent to 3.8 g/ 3.36 kg air-dried soil weight, S2 = 1 Al-dd = 4.218 tons/ ha calcite equivalent to 5.7 g/ 3.36 kg air-dried soil weight, S3 = 1.5 Al-dd = 5.624 tons/ ha calcite equivalent to 7.6 g/ 3.36 kg air-dried soil weight, S4 = 2 Al-dd = 6.956 tons/ ha calcite equivalent to 9.5 g/ 3.36 kg air-dried soil weight, S5 = 2.5 Al-dd = 8.436 tons/ ha calcite equivalent to 11.4 g/ 3.36 kg air-dried soil weight, and S6 = 3 Al-dd = 9.842 tons/ ha calcite equivalent to 13.3 g/ 3.36 kg air-dried soil weight. Each treatment was repeated 3 times resulting in 21 experimental units. Data processing to determine the treatment effect used Analysis of variance (ANOVA) and followed by Tukey's test at the 95% confidence level. The parameters observed were pH, CEC (Cation Exchange Capacity), P-available, Al exchanged, and oxides of Fe, Al, and Mn. The results showed that calcite application had a significant effect on increasing pH and the decreasing Al^{3+}, and H^+, but had no significant effect on CEC, P-available, Fe, Al and Mn oxides.

Keywords: C*alcite, Latosol, Chemical properties*