

ABSTRAK

PENGARUH KOMBINASI APLIKASI PUPUK *ROCK PHOSPHATE* DAN PUPUK NPK TUNGGAL TERHADAP NILAI NISBAH DISPERSI PADA PERTANAMAN JAGUNG (*Zea mays* L.) DI BANDAR LAMPUNG

Oleh

TAMARA BALQIS

Aplikasi Pupuk *Rock Phosphate* dapat menurunkan nisbah dispersi tanah dengan meningkatkan kestabilan agregat melalui penambahan kalsium dan fosfor, yang membantu mengikat partikel lempung Tujuan dalam penelitian ini adalah untuk menganalisis pengaruh pemberian kombinasi pupuk *Rock Phosphate* dan pupuk NPK tunggal dalam memperbaiki nilai nisbah dispersi pada tanah pertanaman jagung di Bandar Lampung dan mengetahui dosis kombinasi pupuk *Rock Phosphate* dan pupuk NPK tunggal mana yang baik untuk menurunkan nilai nisbah dispersi pada tanah pertanaman jagung di Campang Raya, Bandar Lampung. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 8 perlakuan dan 4 ulangan yaitu A=Kontrol, B=Standar; C = $\frac{1}{4}$ Rock Phosphate + $\frac{1}{4}$ Pupuk Tunggal N,P,K; D = $\frac{1}{2}$ Rock Phosphate + $\frac{1}{2}$ Pupuk Tunggal N,P,K; E = $\frac{3}{4}$ Rock Phosphate + $\frac{3}{4}$ Pupuk Tunggal N,P,K; F = 1 Rock Phosphate + 1 Pupuk Tunggal N,P,K; G = $1\frac{1}{4}$ Rock Phosphate + $1\frac{1}{4}$ Pupuk Tunggal N,P,K; H = $1\frac{1}{2}$ Rock Phosphate + $1\frac{1}{2}$ Pupuk Tunggal N,P,K. Analisis nisbah dispersi menggunakan metode *hydrometer*. Analisis data dilakukan secara kuantitatif dengan membandingkan hasil analisis dengan kriteria kelas penetapan yang ada dan uji beda nyata terkecil (BNT) pada taraf 5%. Hasil penelitian ini menunjukkan bahwa aplikasi kombinasi dosis pupuk *Rock Phosphate* dan pupuk NPK tunggal pada tanaman jagung berpengaruh nyata dalam menurunkan nisbah dispersi tanah, namun belum optimal dalam menurunkan presentase nisbah secara signifikan dan pada perlakuan E ($\frac{3}{4}$ *Rock Phosphate* + $\frac{3}{4}$ Pupuk Tunggal N,P,K) menghasilkan persentase nisbah dispersi terendah diantara perlakuan lainnya sehingga menjadi dosis kombinasi pupuk terbaik dalam penelitian ini. Perlakuan A menghasilkan nilai nisbah dispersi tertinggi karena tanah yang tidak diberi pupuk mengalami penurunan kualitas akibat rendahnya kandungan kation penyusun agregat.

Kata kunci: Tanah ultisol, Sifat fisik Tanah, Nisbah dispersi, dan Pupuk *Rock Phosphate*.

ABSTRACT

EFFECT OF COMBINED APPLICATION OF ROCK PHOSPHATE AND SINGLE NPK FERTILIZER ON DISPERSION RATIO IN MAIZE (*Zea mays* L.) CULTIVATION IN BANDAR LAMPUNG

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TAMARA BALQIS

Application of Rock phosphate fertilizer can reduce the soil dispersion ratio by increasing aggregate stability through the addition of calcium and phosphorus, which help bind clay particles. The objective of this study is to analyze the effect of applying a combination of *Rock Phosphate* fertilizer and single NPK fertilizer in improving the dispersion ratio values in corn-growing soils in Campang Raya, Bandar Lampung, and to determine the most effective combination dosage of *Rock Phosphate* and single NPK fertilizer in reducing the dispersion ratio in corn-cultivated Ultisol soil in Bandar Lampung. The research used a Randomized Complete Block Design (RCBD) consisting of 8 treatments and 4 replications: A = Control, B = Standard Fertilization, C = $\frac{1}{4}$ *Rock Phosphate* + $\frac{1}{4}$ Single N, P, K Fertilizer; D = $\frac{1}{2}$ *Rock Phosphate* + $\frac{1}{2}$ Single N, P, K Fertilizer; E = $\frac{3}{4}$ *Rock Phosphate* + $\frac{3}{4}$ Single N, P, K Fertilizer; F = 1 *Rock Phosphate* + 1 Single N, P, K Fertilizer; G = $1\frac{1}{4}$ *Rock Phosphate* + $1\frac{1}{4}$ Single N, P, K Fertilizer; H = $1\frac{1}{2}$ *Rock Phosphate* + $1\frac{1}{2}$ Single N, P, K Fertilizer. The dispersion ratio was analyzed using the hydrometer method. Data analysis was conducted quantitatively by comparing the results with existing classification criteria and using the Least Significant Difference (LSD) test at a 5% significance level. The results of this study showed that the application of a combination of Rock Phosphate and single NPK fertilizer had a significant effect on reducing the soil dispersion ratio. However, it was not yet optimal in significantly lowering the percentage dispersion ratio. Treatment E ($\frac{3}{4}$ *Rock Phosphate* + $\frac{3}{4}$ Single N, P, K Fertilizer) produced the lowest dispersion ratio percentage among the treatments, making it the best fertilizer combination dosage in this study. Treatment A resulted in the highest dispersion ratio because the soil that was not fertilized experienced a decline in quality due to the low content of cations that form soil aggregates.

Keywords: Ultisol soil, Soil physical properties, Dispersion ratio, Rock Phosphate fertilizer.