

ABSTRAK

PENGARUH APLIKASI PUPUK ORGANIK TANDAN KOSONG KELAPA SAWIT PADA PERTANAMAN JAGUNG (*Zea mays* L.) TERHADAP KEMAMPUAN MENAHAN AIR DI TANAH BERPASIR

Oleh

Erwin Hidayah

Kegiatan pertanian pada tanah berpasir memiliki kendala salah satunya berkaitan dengan sifat fisik tanah. Tanah berpasir memiliki karakteristik sifat fisik yang didominasi oleh pori makro sehingga tanah mudah dalam meloloskan air dan kemampuan tanah menahan air menjadi rendah. Hal ini menyebabkan kesuburan tanah menjadi rendah dan tanaman mudah mengalami kekeringan. Upaya yang dapat dilakukan untuk meningkatkan kemampuan tanah menahan air dapat dilakukan dengan cara pemberian pupuk NPK dan pupuk organik tandan kosong kelapa sawit. Penelitian ini bertujuan untuk mempelajari pengaruh aplikasi pupuk NPK dan pupuk organik tandan kosong kelapa sawit terhadap kemampuan tanah menahan air serta variabel pendukung kemandapan agregat tanah, struktur tanah, C-organik tanah, dan komponen produksi tanaman jagung. Metode penelitian ini menggunakan Rancangan Acak Kelompok (RAK) dengan 4 ulangan dan 7 perlakuan yaitu, A = Kontrol, B = 1 NPK, C = $\frac{3}{4}$ NPK, D = $\frac{3}{4}$ NPK + $\frac{1}{2}$ Pupuk Organik, E = $\frac{3}{4}$ NPK + 1 Pupuk Organik, F = $\frac{3}{4}$ NPK + 1 $\frac{1}{2}$ Pupuk Organik, dan G = 1 NPK + 1 Pupuk Organik. Analisis di laboratorium menggunakan metode *sand box* dan tekanan uap (desikator). Data dianalisis secara kuantitatif dengan membandingkan hasil analisis dengan kriteria kelas penetapan yang ada. Hasil penelitian ini menunjukkan bahwa aplikasi pupuk NPK dan pupuk organik tandan kosong kelapa sawit belum mampu meningkatkan kemampuan menahan air pada tanah berpasir, namun dosis perlakuan F ($\frac{3}{4}$ NPK + 1 $\frac{1}{2}$ Pupuk Organik) menunjukkan nilai tertinggi diantara perlakuan aplikasi pupuk organik tandan kosong kelapa sawit lainnya.

Kata kunci : Tanah berpasir, kemampuan menahan air, pupuk organik, tandan kosong kelapa sawit, *sand box*, pF.

ABSTRACT

THE EFFECT OF APPLICATION PALM OIL EMPTY FRUIT BUNCHES ORGANIC FERTILIZER IN CORN (*Zea mays* L.) CULTIVATION ON WATER HOLDING CAPACITY IN SANDY SOIL

By

Erwin Hidayah

Agricultural activities on sandy soil have constraints, one of which is related to the physical properties of the soil. Sandy soil has physical characteristics which are dominated by macro pores so that the soil can easily pass water and the ability of the soil to hold water is low. This causes soil fertility to be low and plants dry easily. Efforts that can be made to increase the ability of the soil to hold water can be done by applying NPK fertilizer and organic fertilizer of palm oil empty fruit bunches. This study aims to study the effect of the application of NPK fertilizer and organic palm oil empty fruit bunches on the ability of soil to hold water as well as the supporting variables for soil aggregate stability, soil structure, soil C-organic, and components of corn plant production. This research method used a Randomized Block Design (RBD) with 4 repetitions and 7 treatments, namely, A = Control, B = 1 NPK, C = $\frac{3}{4}$ NPK, D = $\frac{3}{4}$ NPK + $\frac{1}{2}$ Organic Fertilizer, E = $\frac{3}{4}$ NPK + 1 Organic Fertilizer, F = $\frac{3}{4}$ NPK + 1 $\frac{1}{2}$ Organic Fertilizer, and G = 1 NPK + 1 Organic Fertilizer. Analysis in the laboratory using the sand box method and steam pressure (desiccator). Data were analyzed quantitatively by comparing the results of the analysis with the existing class determination criteria. The results of this study indicate that the application of NPK fertilizer and organic fertilizer of palm oil empty fruit bunches has not been able to increase the ability to hold water in sandy soils, but the treatment dose of F ($\frac{3}{4}$ NPK + 1 $\frac{1}{2}$ Organic Fertilizer) showed the highest value among the others organic fertilizer applications of palm oil empty fruit bunches.

Keywords : Sandy soil, water holding capacity, organic fertilizer, palm oil empty fruit bunches, sand box, pF.