

## **ABSTRACT**

### **APPLICATION OF GEL SOIL AMANDEMENT(WATER HOLDING CAPACITY) IN SANDY SOILS**

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Gel soil amendments such as BOCP can be used to improve the condition of sandy soil. Providing this soil amendment can improve the physical properties of the soil, especially its ability to hold water. The ability to hold water can change the pore size of the soil so that it can increase the soil's capacity to store water, change the capacity of the soil to hold and conduct water and improve the soil's ability to hold water and nutrients so that they are not easily lost. This research was conducted to determine the effectiveness of the application of BOCP soil amendment on water holding capacity. This research was conducted at the Soil Science Laboratory, Faculty of Agriculture, University of Lampung from November 2022 to May 2023. This research was designed using a completely randomized design (CRD) with 5 treatments and 5 replications. The first treatment is P0: no soil amendment, second treatment (P1): 7.5 mg.L-I BOCP, third treatment (P2): 15 mg.L-I BOCP, fourth treatment (P3): 22.5 mg. L-I BOCP, fifth treatment (P4): 30 mg. L-I BOCP. Observation variables include water holding capacity, macro pores, aggregate distribution, soil texture and aggregate stability. Data were analyzed using quantitative analysis. The research results showed that the application of BOCP soil amendment had no effect on water holding capacity before and after treatment.

*Key words: Water holding capacity, gel soil improver and sandy soil*

## ABSTRAK

### APLIKASI PEMBENAH TANAH GEL TERHADAP KEMAMPUAN MENAHAN AIR (*WATER HOLDING CAPACITY*) PADA TANAH BERPASIR

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Bahan pembenah Tanah Gel seperti BOCP dapat dijadikan bahan untuk memperbaiki kondisi tanah berpasir. Pemberian bahan pembenah tanah ini dapat memperbaiki sifat fisik tanah khususnya kemampuan menahan air. Kemampuan menahan air dapat merubah ukuran pori tanah sehingga mampu meningkatkan kapasitas tanah dalam menyimpan air, mengubah kapasitas tanah menahan dan melalukan air serta memperbaiki kemampuan tanah dalam memegang air dan hara agar tidak mudah hilang. Penelitian ini dilakukan untuk mengetahui efektivitas pengaplikasian pembenah tanah BOCP *terhadap water holding capacity*. Penelitian ini dilakukan di Laboratorium Ilmu Tanah, Fakultas Pertanian, Universitas Lampung pada bulan November 2022 sampai dengan Mei 2023. Penelitian ini dirancang menggunakan rancangan acak lengkap (RAL) dengan 5 perlakuan dan 5 ulangan. Perlakuan pertama yaitu  $P_0$  : tanpa pembenah tanah, perlakuan kedua ( $P_1$ ): 7,5 mg. L<sup>-1</sup> BOCP, perlakuan ketiga ( $P_2$ ): 15 mg.L<sup>-1</sup> BOCP, perlakuan keempat ( $P_3$ ): 22,5 mg. L<sup>-1</sup> BOCP, perlakuan kelima ( $P_4$ ): 30 mg.L<sup>-1</sup> BOCP. Variabel pengamatan meliputi kemampuan menahan air, pori makro, sebaran agregat, tekstur tanah dan kemantapan agregat. Data dianalisis dengan analisis kuantitatif. Hasil penelitian menunjukkan bahwa aplikasi pembenah tanah BOCP belum memberikan pengaruh terhadap *water holding capacity* sebelum dan sesudah perlakuan.

Kata kunci : *Water holding capacity*, Pembenah tanah gel dan Tanah pasir