

ABSTRAK

Produktifitas Inceptisol umumnya masih rendah, karena Inceptisol memiliki kandungan bahan organik yang rendah dan akan menyebabkan kuliatas fisik tanah kurang baik. Pemberian bahan organik berupa pupuk kotoran ayam pada tapak residu *biochar* merupakan salah satu upaya untuk memperbaiki sifat fisika tanah. Penelitian ini dilaksanakan selama 4 bulan yaitu dimulai dari Oktober 2022 sampai Januari 2023 di desa Panca Mulya, Kecamatan Sungai Bahar, Kabupaten Muaro Jambi, Provinsi Jambi. Penelitian ini berupa percobaan (eksperimen) dengan 6 perlakuan dan 4 ulangan sehingga memperoleh 24 percobaan, setiap percobaan terdiri dari 4 tanaman. Perlakuan yang diberikan adalah P_0 = Residu tanpa perlakuan, P_1 = (Residu *biochar* 20 ton ha⁻¹) + Pupuk kotoran ayam 0 ton ha⁻¹, P_2 = (Residu *biochar* 10 ton ha⁻¹ + Pupuk kotoran ayam 10 ton ha⁻¹) + pupuk kotoran ayam 10 ton ha⁻¹, P_3 = (Pupuk kotoran ayam 20 ton ha⁻¹) +Pupuk kotoran ayam 20 ton ha⁻¹, P_4 = (Residu *biochar* 20 ton ha⁻¹ + pupuk kotoran ayam 10 ton ha⁻¹) + pupuk kotoran ayam 10 ton ha⁻¹, P_5 = (Residu *biochar* 10 ton ha⁻¹ + pupuk kotoran ayam 20 ton ha⁻¹) + pupuk kotoran ayam 20 ton ha⁻¹. Hasil penelitian menunjukkan bahwa pemberian pupuk kotoran ayam pada tapak residu *biochar* janjang kosong kelapa sawit dan pupuk kotoran ayam berpengaruh nyata terhadap meningkatkan bahan organik, total ruang pori, laju infiltrasi, kapasitas infiltrasi dan menurunkan bobot volume tanah serta meningkatkan pertambahan dan jumlah lingkaran batang.

Kata kunci: *Inceptisol, Infiltrasi, Residu Biochar, Pupuk kotoran ayam, Kelapa sawit*

ABSTRACT

The productivity of Inceptisols is generally still low, because Inceptisols have a low organic matter content and will cause the soil's physical quality to be unfavorable. Applying organic matter in the form of chicken manure to the biochar residue site is one of the efforts to improve the physical properties of the soil. This research was conducted for 4 months, starting from October 2022 to January 2023 in Panca Mulya Village, Sungai Bahar District, Muaro Jambi Regency, Jambi Province. This research was in the form of an experiment (experiment) with 6 treatments and 4 replications so as to obtain 24 trials, each experiment consisting of 4 plants. The treatments given were P0 = Residue without treatment, P1 = (20 ton ha⁻¹ biochar residue) + 0 ton ha⁻¹ chicken manure, P2 = (10 ton ha⁻¹ biochar residue + 10 ton ha⁻¹ chicken manure fertilizer) + 10 ton ha⁻¹ chicken manure, P3 = (20 ton ha⁻¹ chicken manure) + 20 ton ha⁻¹ chicken manure, P4 = (20 ton ha⁻¹ biochar residue + 10 ton ha⁻¹ chicken manure) + chicken manure 10 ton ha⁻¹, P5= (Residual biochar 10 ton ha⁻¹ + chicken manure 20 ton ha⁻¹) + chicken manure 20 ton ha⁻¹. The results showed that the application of chicken manure fertilizer to the empty palm biochar residue site and chicken manure had a significant effect on increasing organic matter, total pore space, infiltration rate, infiltration capacity and reducing soil volume weight and increasing the increase and number of stem circumferences.

Keywords: *Inceptisol, Infiltration, Biochar residue, Chicken manure, Oil palm*