

KAJIAN KEMAMPUAN DOSIS *BIOCHAR* SERBUK Gergaji TERHADAP BEBERAPA SIFAT KIMIA TANAH DAN PENINGKATAN HASIL JAGUNG MANIS PADA ULTISOL LEMPUNG LIAT BERDEBU

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ABSTRACT

Ultisol is classified as marginal land, namely its productivity level is low, its nutrient content is generally low, and its organic matter content is low. The provision of organic matter is needed to overcome the problem of low soil chemical properties and suboptimal plant productivity on Ultisol soil, one of which is sawdust *Biochar*. This research was conducted in Rengas Bandung Village, Jambi Luar Kota District, Jambi Province from October 2023 to January 2024. This study used a Randomized Group Design (RAK) based on non-uniform experimental unit conditions. Consisting of 4 treatments, namely P0 = Without Biochar, P1 = 10 tons/ha Sawdust Biochar, P2 = 20 tons/ha Sawdust Biochar, and P3 = 30 tons/ha Sawdust Biochar. The treatment was repeated 6 times, so that in the study using 24 experimental plots, each plot contained 40 plants as well as 6 sample plants and the number of sample plants was 144 plants. The observed variables were soil pH, C-Organic, CEC, Al-dd, Ca-dd, Mg-dd, Plant Height, Weight Per Cob, Length of Cob, Diameter of Cob, and Crop Yield. Data were analyzed using analysis of variance and further tests using DMRT at 5% level. The results showed that the provision of sawdust Biochar with various doses had an effect on increasing soil pH, C-Organic, CEC, Ca-dd, Mg-dd, Plant Height, Weight Per Cob, Length of Cob, Diameter of Cob, and Crop Yield of sweet corn and reducing Al-dd levels in the soil.

Keywords: *Ultisol, Sawdust Biochar, Sweet Corn*

ABSTRAK

Ultisol tergolong lahan marginal, yaitu tingkat produktivitasnya rendah, kandungan unsur hara umumnya rendah, serta kandungan bahan organik rendah. Diperlukan pemberian bahan organik dalam mengatasi permasalahan sifat kimia tanah yang rendah dan produktivitas tanaman yang tidak optimal pada tanah Ultisol salah satunya yaitu *Biochar* serbuk gergaji. Penelitian ini dilaksanakan di Desa Rengas

Bandung, Kecamatan Jambi Luar Kota, Provinsi Jambi pada bulan Oktober 2023 hingga bulan Januari 2024. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) berdasarkan kondisi unit percobaan yang tidak seragam. Terdiri dari 4 perlakuan yaitu P0 = Tanpa *Biochar*, P1 = 10 ton/ha *Biochar* serbuk gergaji, P2 = 20 ton/ha *Biochar* serbuk gergaji, dan P3 = 30 ton/ha *Biochar* serbuk gergaji. Perlakuan diulangan 6 kali, sehingga pada penelitian menggunakan 24 petakan percobaan setiap petaknya terdapat 40 tanaman sekaligus 6 tanaman sampel dan jumlah tanaman sampel sebanyak 144 tanaman. Variabel yang diamati yaitu pH tanah, C-Organik, KTK, Al-dd, Ca-dd, Mg-dd, Tinggi Tanaman, Berat Per Tongkol, Panjang Tongkol, Diameter Tongkol, dan Hasil Tanaman. Data dianalisis menggunakan sidik ragam dan uji lanjut menggunakan DMRT taraf 5%. Hasil penelitian memperlihatkan bahwa pemberian *Biochar* serbuk gergaji dengan berbagai dosis berpengaruh dalam meningkatkan pH tanah, C-Organik, KTK, Ca-dd, Mg-dd, Tinggi Tanaman, Berat Per Tongkol, Panjang Tongkol, Diameter Tongkol, dan Hasil Tanaman jagung manis serta menurunkan kadar Al-dd dalam tanah.

Kata Kunci: *Ultisol; Biochar serbuk gergaji; Jagung Manis*