APLIKASI *BIOCHAR* UNTUK MENGURANGI EROSI PADA LERENG TERJAL DENGAN KANDUNGAN LEMPUNG DAN INTENSITAS HUJAN TINGGI

(INTISARI)

Aplikasi *biochar* dengan metode pengujian langsung di lapangan belum banyak dilakukan. Aplikasi *biochar* dalam penelitian ini digunakan sebagai bahan konservasi untuk mengendalikan limpasan dan erosi. Penelitian dilakukan dengan menggunakan plot lapangan. Penelitian dilakukan pada wilayah yang material tanahnya didominasi oleh lempung (>40%) dan sudut lereng yang curam (>60%). Pola tanam di lokasi penelitian umumnya ubi kayu di musim kemarau dan jagung di musim hujan. Empat petak lahan disiapkan dengan perlakuan *biochar*, batu apung, mikoriza, dan kontrol. Pengamatan limpasan dan erosi dilakukan di bawah tegakan jagung pada saat puncak musim hujan (Maret-April) tahun 2021. Curah hujan tertinggi pada bulan Maret dan April mencapai 441 mm/bulan, dengan intensitas tertinggi mencapai 150 mm/minggu. Aplikasi *biochar* mampu mengurangi laju erosi melalui perubahan karakteristik tanah. Aplikasi *biochar* memberikan hasil yang lebih baik daripada aplikasi batu apung dan mikoriza. Aplikasi *biochar* menghasilkan karakteristik tanah yang lebih baik seperti berat volume (BV), berat jenis (BJ), porositas, kandungan bahan organik (BO), kapasitas tukar kation (KPK), dan stabilitas agregat yang mendukung pertumbuhan tanaman jagung.

Kata Kunci: *Biochar*, Erosi, Batu Apung, Mikoriza

BIOCHAR APPLICATION IN REDUCING SOIL EROSION AT EXTREME SLOPE WITH VERY HIGH CLAY CONTENT SOIL AND HIGH RAINFALL INTENSITY IN REDUCING SOIL EROSION

(ABSTRACT)

Biochar applications using direct testing methods in the field have not been widely carried out. The application of biochar in this study was used as a conservation material to control runoff and erosion. The research was conducted using a field plot. The study was conducted in areas where the soil material is dominated by clay (>40%) and steep slope angles (>60%). The cropping pattern at the research site is generally cassava in the dry season and corn in the rainy season. Four field plots were prepared with biochar, pumice, mycorrhizae, and control treatments. Runoff and erosion observations were carried out under corn stands during the peak period of the rainy season (March-April) in 2021. The highest rainfall in March and April reached 441 mm/month, with the highest intensity reaching 150 mm/week. The application of biochar reduced the rate of erosion through altering soil characteristics. Biochar application provide a better performance than pumice and mycorrhizae application. Biochar application has a better soil characteristics such as Bulk Density (BD), Specific Gravity (SG) porosity, organic matter content (OM), Cation Exchange Capacity (CEC), and aggregate stability to supports the growth of corn plants.

Keywords: *Biochar, Erosion, Pumice, Mycorrhizae,*