

**PEMBERIAN BIOCHAR BAMBU (*Gigantochloa sp.*) DALAM  
MEMPERBAIKI SIFAT KIMIA TANAH BEKAS TAMBANG  
EMAS DI KABUPATEN DHARMASRAYA UNTUK  
TANAMAN JAGUNG**

**SKRIPSI**

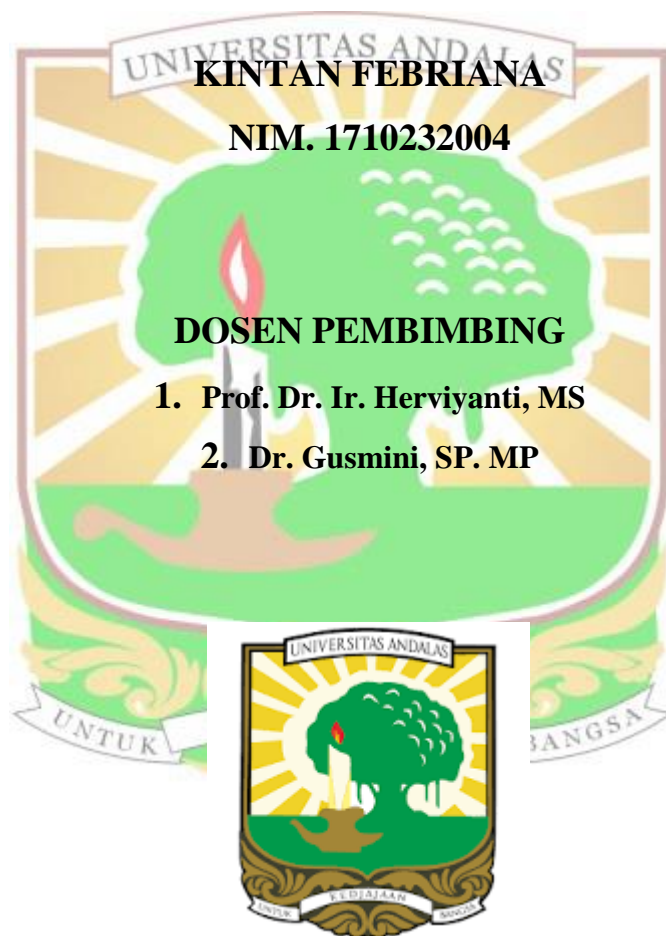


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**Oleh**



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# PEMBERIAN BIOCHAR BAMBU (*Gigantochloa sp.*) DALAM MEMPERBAIKI SIFAT KIMIA TANAH BEKAS TAMBANG EMAS DI KABUPATEN DHARMASRAYA UNTUK TANAMAN JAGUNG

## Abstrak

Penambangan emas dapat menimbulkan dampak negatif terhadap lingkungan karena mengganggu keseimbangan permukaan tanah. Hal ini mengakibatkan lahan bekas tambang emas umumnya tidak dapat digunakan lagi sebagai lahan pertanian. Tujuan penelitian ini adalah mengkaji pengaruh pemberian biochar bambu dalam memperbaiki sifat kimia tanah bekas tambang emas di Kabupaten Dharmasraya untuk tanaman jagung. Penelitian dilakukan di Rumah Kawat dan analisis tanah dilakukan di Laboratorium Kimia dan Kesuburan Tanah Fakultas Pertanian Universitas Andalas. Penelitian ini terdiri dari 5 perlakuan. A (Kontrol); B (10 T/ha Biochar Bambu); C (20 T/ha Biochar Bambu); D (30 T/ha Biochar Bambu); E (40 T/ha Biochar Bambu) dengan 3 ulangan. Parametr yang diamati adalah pH, P-tersedia, N-total, C-organik, K-dd, Ca-dd, Mg-dd, KTK, dan Hg. Hasil penelitian menunjukkan bahwa aplikasi biochar bambu mampu memperbaiki sifat kimia tanah bekas tambang emas, peningkatan sifat kimia tanah cenderung terjadi pada perlakuan E, dimana pada perlakuan 40 ton/ha mampu meningkatkan pH tanah sebesar 3,1 unit, nilai P-tersedia sebesar 3,06 ppm, nilai N-total sebesar 0,031%, nilai C-organik sebesar 0,46%, nilai K-dd sebesar 0,21  $\text{cmol kg}^{-1}$ , nilai Ca-dd sebesar 0,0016  $\text{cmol kg}^{-1}$ , nilai Mg-dd sebesar 0,328  $\text{cmol kg}^{-1}$ , nilai KTK sebesar 3,34  $\text{cmol kg}^{-1}$ , dan mampu menurunkan kadar Hg pada tanah sebesar 1,52 ppm jika dibandingkan dengan kontrol. Pertumbuhan optimum tanaman terjadi pada pengaplikasian 40 ton/ha biochar Bambu dapat memberikan peningkatan tinggi tanaman hingga 81,66 cm, berat kering tanaman sebanyak 68,65 g, peningkatan kadar hara N sebanyak 0,033%, hara P sebanyak 0,001%, dan hara K sebanyak 0,134%, serta juga dapat menurunkan kadar Hg tanaman hingga 1,12 ppm dibandingkan dengan kontrol.

Kata Kunci : Biochar Bambu, Bekas Tambang Emas, Tanaman Jagung, Sifat Kimia

# APPLICATION OF BAMBOO BIOCHAR (*Gigantochloa sp.*) IN IMPROVING THE CHEMICAL PROPERTIES OF EX-Gold MINING SOIL FOR CORN CULTIVATION IN DHARMASRAYA REGION

## Abstract

Gold mining can have a negative impact on the environment because it disturbs the land surface. Therefore, the ex-gold mining land was generally abandoned. The purpose of this study was to determine the effect of bamboo biochar in improving the chemical properties of ex-gold mining land for corn cultivation in Dharmasraya Regency. The research was conducted at the Wire House and soil analysis was carried out at the soil Chemistry and Fertility Laboratory, Agriculture Faculty Andalas University. This study consisted of with 5 treatments, those were A (Control); B (10 T/ha Bamboo Biochar); C (20 T/ha Bamboo Biochar); D (30 T/ha Bamboo Biochar); E (40 T/ha Bamboo Biochar) with 3 replicates. Parameter analyzed were pH, available-P, total-N, organic-C, K exchangeable, Ca exchangeable, Mg exchangeable, CEC, and Hg levels. The results showed that the application of bamboo biochar was able to improve the chemical properties of ex-gold mining soil. Improvements in soil chemical properties tended to occur in treatment E, it was indicated by increasing soil pH by 3.1 units, available-P by 3.06 ppm, total-N by 0.031%, organic-C by 0.46%, K exchangeable by 0.21 cmol kg<sup>-1</sup>, Ca exchangeable by 0.0016 cmol kg<sup>-1</sup>, Mg exchangeable by 0.328 cmol kg<sup>-1</sup>, CEC by 3.34 cmol kg<sup>-1</sup>, and reducing soil Hg levels by 1.52 ppm at 40 T/ha bamboo biochar compared to the control. At that dosage, corn crops also showed the optimum growth. It increased plant height by up to 81.66 cm, plant dry weight by 68.65 g, N uptake by 0.033%, P uptake by 0.001%, and K uptake by 0.134%, and reduced Hg absorbed at up to 1.12 ppm when compared to the control.

*Keywords: Bamboo Biochar, Corn Plants, Former Gold Mine, Soil Chemical Properties*

