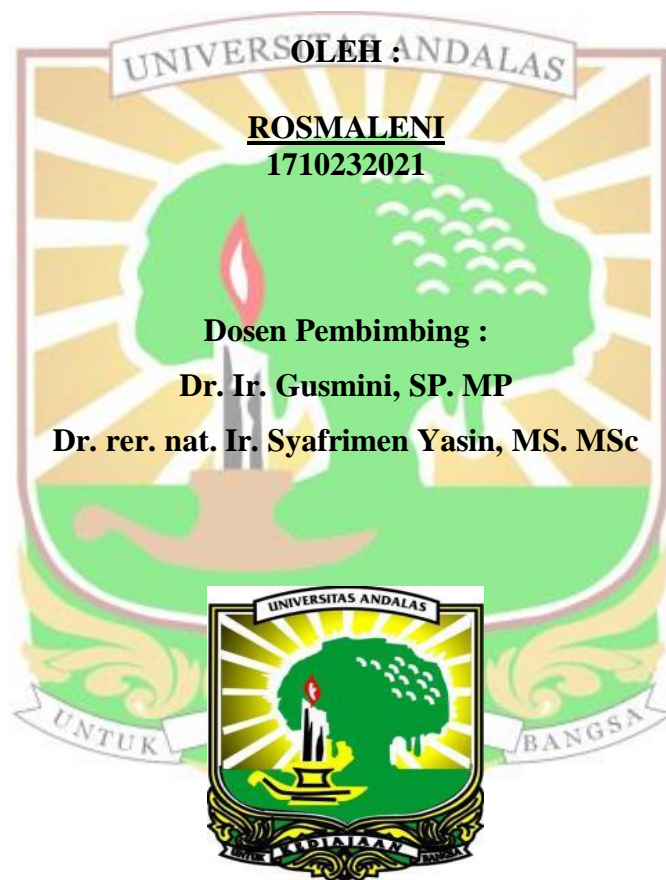


**PERBAIKAN TANAH BEKAS TAMBANG EMAS DENGAN
KOMBINASI KOMPOS PELEPAH KELAPA SAWIT DAN
BIOCHAR SEKAM PADI TERHADAP PRODUKSI TANAMAN
BUNGA MATAHARI (*Helianthus annuus L.*).**

SKRIPSI



**DEPARTEMEN ILMU TANAH DAN SUMBERDAYA LAHAN
FAKULTAS PERTANIAN
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Perbaikan Tanah Bekas Tambang Emas dengan Kombinasi Kompos Pelepah Kelapa Sawit dan *Biochar* Sekam Padi Terhadap Produksi Tanaman Bunga Matahari (*Helianthus annuus L.*)

ABSTRAK

Kegiatan pertambangan memberikan kontribusi positif terhadap perekonomian, namun menimbulkan dampak negatif terhadap lingkungan. Akibat yang ditimbulkan antara lain kondisi fisik, kimia dan biologis tanah menjadi buruk. *Tailing* hasil penambangan emas mengandung merkuri (Hg). Kondisi ini menyebabkan lahan menjadi tidak produktif. Penggunaan amelioran merupakan salah satu upaya reklamasi untuk memperbaiki kondisi lahan pasca tambang. Tujuan penelitian untuk mempelajari pengaruh interaksi, jenis amelioran kompos pelepah kelapa sawit dan *biochar* sekam padi dan dosis amelioran terhadap perbaikan tanah bekas tambang emas di Kabupaten Dharmasraya. Penelitian telah dilakukan di Rumah Kaca dan Laboratorium Kimia Tanah Fakultas Pertanian, Universitas Andalas, Padang, Sumatera Barat. Penelitian ini merupakan percobaan dengan 2 faktor (2 jenis amelioran kompos pelepah kelapa sawit dan *biochar* sekam padi dengan 3 dosis amelioran 0 ton/ha (kontrol), 10 ton/ha dan 20 ton/ha) dengan 3 ulangan (18 satuan percobaan) yang dialokasikan secara acak lengkap (RAL). Hasil penelitian menunjukkan bahwa pada dosis 20 ton/ha kompos pelepah kelapa sawit berperan dalam meningkatkan nilai pH H₂O menjadi 6,28, C-organik 0,462%, P-tersedia 26,91 ppm, N-total 0,40%, Ca-dd 2,3659 cmol/kg, Mg-dd 0,8253 cmol/kg, K-dd 1,0234 cmol/kg dan menurunkan Hg sampai 2,39 ppm. Perlakuan yang mampu meningkatkan kandungan KTK dan Na-dd adalah perlakuan pada dosis 20 ton/ha *biochar* sekam padi, nilai KTK menjadi 15,60 cmol/kg dan Na-dd 0,424 cmol/kg. Pertumbuhan optimum tanaman bunga matahari (*Helianthus annuus L.*) didapatkan pada perlakuan dosis 20 ton/ha kompos pelepah kelapa sawit dengan tinggi tanaman 189 cm, jumlah daun 25 lembar dan Hg tanaman 1,16 ppm namun Hg masih pada batas kritis.

Kata Kunci : Lahan Bekas Tambang Emas, Kompos Pelepah Kelapa Sawit, *Biochar* Sekam Padi, Bunga Matahari, Merkuri

**Improvement of Ex-Gold Mined Soil using Combination of Oil Palm Midrib
Compost and Rice Husk Biochar on the Production of Sunflower Plants
(*Helianthus annuus L.*)**

ABSTRACT

Mining activities make a positive contribution to the economy, but they cause a negative impact on the environment. The consequences of mining were poor physical, chemical, and biological condition of the soil. Tailings from the gold mining contain mercury (Hg), which impacts land productivity. The use of ameliorant is one of the reclamation efforts to improve the condition of post-mining land. This study was aimed to study the interaction effect, type of ameliorant compost from oil palm midrib and dose of rice husk biochar on soil improvement of ex-gold mined soil in Dharmasraya Regency. The research was conducted at the Greenhouse and Soil Chemistry Laboratory, Faculty of Agriculture, Andalas University, Padang, West Sumatra. This study was in form of experiment having 2 factors (2 types of ameliorant compost from oil palm midrib and rice husk biochar with 3 doses of ameliorant 0 tons/ha (control), 10 tons/ha and 20 tons/ha) with 3 replicates. There were 18 experimental units allocated based on completely randomized design (CRD). Parameters analyzed were pH, Organic-C, P-available, total-N, Ca-exch, Mg-exch, K-exch, Na-exch, and Cation Exchange Capacity. The results showed that application of 20 tons/ha of oil palm midrib compost, increased the soil pH value to 6.28, Organic-C to 0.46 %, P-available to 26.91 ppm, total-N to 0.40%, Ca-exch to 2.37 cmol/kg, Mg-exch to 0.83 cmol/kg, K-exch to 1.02 cmol/kg and reduced Hg to 2.39 ppm. The application of 20 tons/ha of rice husk biochar was able to increase the CEC and Na-exch content. The CEC value was 15.60 cmol/kg and Na-exch was 0.42 cmol/kg. The optimum growth of sunflower (*Helianthus annuus L.*) was obtained under 20 tons/ha of oil palm midrib compost application. This was indicated by the highest plant height (189 cm), number of leaves (25 pieces) and the lowest plant Hg (1.16 ppm) even though the concentration Hg was still above the critical limit.

Keywords: Ex-gold Mines, Palm Midrib Compost, Rice Husk Biochar, Sunflower, Mercury