

**AKTIVASI BUBUK *Subbituminus* DENGAN UREA DAN DOLOMIT
DALAM MEMPERBAIKI SIFAT KIMIA OXISOL SERTA
MENINGKATKAN PERTUMBUHAN BIBIT TANAMAN KELAPA
SAWIT (*Elaeis guineensis jacq.*)**

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**PROGRAM STUDI ILMU TANAH
FAKULTAS PERTANIAN
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ABSTRAK

Penelitian ini telah dilaksanakan di Kebun Percobaan Fakultas Pertanian Universitas Andalas, tanah yang digunakan merupakan tanah berordo Oxisol yang diambil di Kenagarian Gunung Selasih, Kecamatan Pulau Punjung, Kabupaten Dharmasraya. Tujuan dari penelitian ini adalah untuk mempelajari interaksi antara batubara bubuk *Subbituminous* dengan urea dan dolomit untuk memperbaiki sifat kimia Oxisol serta meningkatkan pertumbuhan bibit kelapa sawit (*Elaeis guineensis* Jacq.). Penelitian ini dilakukan pada bulan Desember 2016 sampai Agustus 2017. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dalam Faktorial 3 x 3 dengan 3 kali ulangan. Faktor pertama adalah takaran bubuk *Subbituminus* yaitu A₁: 10 ton/ha; A₂ : 20 ton/ha ; A₃ :30 ton/ha. Faktor kedua adalah jenis bahan pengaktif yaitu B₀ : Tanpa pengaktif, B₁ : Urea 10%, B₂: Dolomit 10%. Parameter yang dianalisis adalah pH tanah, N-total, C-organik,, CEC, P-tersedia dan kation basa. Data hasil analisis tanah dan tanaman diuji secara statistik berdasarkan uji F pada taraf 5%. Hasil penelitian menunjukkan bahwa : (1) Urea dan Dolomit berinteraksi dalam meningkatkan nilai KTK Oxisol, dimana nilai KTK tertinggi pada takaran 30 ton/ha bubuk *Subbituminus* yang diaktifkan dengan dolomit, dan peningkatan nilai KTK hampir sama dengan bahan pengaktif urea. (2) Pemberian bubuk *Subbituminus* pada takaran 30 ton/ha dapat memperbaiki sifat kimia Oxisol dan meningkatkan kelapa sawit sebesar pH 0,21unit; 0,05% N; 2,43 ppm P; 0,12 me/100g Mg; 0,06 me/100g Ca; 3,89 cm; 2 helai dibandingkan dengan takaran 10 ton/ha. (3) Pemberian bahan pengaktif Urea dapat memperbaiki sifat kimia Oxisol seperti; peningkatan pH sebesar 0,32 unit; C-organik sebesar 0,35%, N-total sebesar 0,09%; KTK sebesar 5,65 me/100g; P-tersedia sebesar 3,01 ppm dan penurunan kadar Fe-dd sebesar 69 ppm serta meningkatkan pertumbuhan pembibitan utama tanaman kelapa sawit seperti; Tinggi tanaman dan Jumlah helaian daun dibandingkan dengan tanpa bahan pengaktif.

Kata kunci : Oxisol, Bubuk *Subbituminus*, Urea, Dolomit, Kelapa Sawit

**ACTIVATION OF *Sub-bituminous* COAL POWDER WITH UREA and
DOLOMITE TO IMPROVE CHEMICAL PROPERTIES OF OXISOL AND
GROWTH OF OIL PALM (*Elaeis guineensis* Jacq) SEEDLINGS.**

ABSTRACT

This experiment was conducted in experimental field, Faculty of Agriculture Andalas University, Padang. The soil being used was Oxisol which was taken in Gunung Selasih, Subdistric of Pulau Punjung, Regency of Dharmasraya, West Sumatra. This research was aimed to study interaction between *Sub-bituminous* coal powder (SCP) and the activators to improve chemical properties of Oxisol and growth of oil palm (*Elaeis guineensis* Jacq) seedlings. It was conducted from December, 2016 until August, 2017. The experiment was designed in Completely Randomized Design consisting of 2 factors (*Sub-bituminous* coal powder and types of activator) with 3 replications. The first factor (*Sub-bituminous* coal powder) consisted of 3 levels, those were A₁: 10 ton/ha; A₂: 20 tons/ha; A₃: 30 tons/ha. The second factor (types of activator) consisted of 3 types, those were B₀ = without activators; B₁ = 10% Urea; B₂ = 10 % Dolomite. The parameters analyzed were soil pH, total-N, Organic-c, CEC, P- available and Cation Exchange. The data resulted were statistically analysed the variance (F-test) at 5% level of significance. The results showed that : (1) there was an interaction between SCP and the activators in increasing soil CEC. The highest soil CEC was found under application of 30 tons SCP/ha with 10% dolomite, and the effect was almost the same as the effect of Urea activator, (2) *Subbituminous* coal powder applied at a dose of 30 tons SCP/ha improved chemical properties of Oxisol such as pH by 0.31 units, organic-C by 0.1% , available-P by 2.43 ppm, N-total by 0.05%, CEC by 34.01 cmol/kg, Ca by 0.06 cmol/kg and Mg by 0.12 cmol/kg compared to a dose of 10 tons SCP/ha, (3) Application of Urea as an activating material improved chemical properties of Oxisol such as pH by 0.32 units; organic-C by 0.35%; N by 0.09%; CEC by 5.65 cmol/kg, available-P by 3.01 ppm and decrease of exchangeable-Fe by 69 ppm, and the growth of oil palm seedlings such as plant height by 8.55 cm and number of leaves by 5 compared to that without activator.

Keywords: Oxisol, *Sub-bituminous* coal powder, Urea, Dolomite, Palm Oil