

**APLIKASI CAMPURAN BUBUK BATUBARA MUDA
SUBBITUMINUS DENGAN UREA, KCl, NaOH, NaCl UNTUK
MEMPERBAIKI SIFAT KIMIA ULTISOL DAN KADAR
HARA SERTA PERTUMBUHAN TANAMAN JAGUNG**
(*Zea mays. L*)

ABSTRAK

Penelitian dilaksanakan pada bulan November 2014 – April 2015 di Laboratorium Jurusan Tanah dan Rumah Kaca Fakultas Pertanian Universitas Andalas. Tujuannya adalah mempelajari pengaruh interaksi dan pengaruh utama dari campuran bubuk batubara muda *Subbituminus* dengan Urea, KCl, NaOH dan NaCl untuk memperbaiki sifat kimia Ultisol dan kadar hara pertumbuhan tanaman Jagung (*Zea Mays L.*). Penelitian ini berbentuk Faktorial 2x5 dengan 3 kali ulangan dalam Rancangan Acak Lengkap (RAL). Faktor A adalah A_1 = bubuk batubara muda dengan takaran 0,25% (25 g/pot), A_2 = bubuk batubara muda dengan takaran 0,50% (50 g/pot) dan Faktor B adalah pengaktif yang digunakan yaitu B_0 = tanpa pengaktif, B_1 = Urea dengan takaran 125% R (5,62 g/pot), B_2 = KCl dengan takaran 125% R (4,68 g/pot), B_3 = NaOH dengan takaran 0,25N (2,5 g/pot) dan B_4 = NaCl dengan takaran 0,25 N (3,6 g/pot). Data hasil pengamatan dianalisis secara statistik dengan uji F pada taraf 5%. Hasil penelitian menunjukan bahwa pemberian bubuk batubara muda *Subbituminus* dengan Urea, KCl, NaOH, NaCl tidak memberikan interaksi terhadap sifat kimia Ultisol dan kadar hara pertumbuhan tanaman jagung. Selanjutnya pengaktif NaOH dan Urea lebih baik dibandingkan dengan pengaktif lainnya terhadap sifat kimia Ultisol. Pemberian pengaktif NaOH menaikkan nilai pH dari 4,97 menjadi 5,72, menurunkan Al-dd, meningkatkan C-Organik 0,57%, P-tersedia 0,26 ppm, KTK 11,34 me/100g, N-total 0,1%, juga meningkatkan pertumbuhan tinggi tanaman Jagung 18,58 cm, N tanaman 0,18% dan P- tanaman 0,31% dibandingkan tanpa pengaktif. Pemberian takaran bubuk *Subbituminus* 0,5% dapat meningkatkan pH 0,35, menurunkan Al-dd, dan meningkatkan C-Organik 0,28% dibandingkan *Subbituminus* dengan takaran 0,25%.

Kata kunci : Ultisol, bubuk *Subbituminus*, pengaktif

**APPLICATION OF A MIXTURE OF POWDERED *SUBBITUMINUS*
WITH UREA, KCl, NaOH, AND NaCl TO IMPROVE CHEMICAL
PROPERTIES OF ULTISOL AS WELL AS NUTRIENT UPTAKE AND
GROWTH OF CORN (*Zea mays* L.)**

ABSTRACT

A research was conducted from November 2014 to April 2015 in the Laboratory of Soil and Greenhouse Faculty of Agriculture, University of Andalas. The aim of the research was to study the interaction between powdered lignite *Subbituminus* and Urea, KCl, NaOH as well as NaCl to improve chemical properties of Ultisol as well as plant growth and nutrient content of maize (*Zea mays* L.). This research consisted of 2 factors (2x5) with three replications in a completely randomized design (CRD). Factor A was powdered lignite (A1 = 25 g/pot, A2 = 50 g/pot) and factor B was activator (B0 = without activator, B1 = 5.62 g Urea/pot, B2 = 4.68 g KCl/pot, B3 = 2.5 g NaOH/pot , and B4 = 3.6 g NaCl/pot). The data were statistically analyzed by F test at 5% level of significance. The results showed that there was no interaction between powdered lignite *Subbituminus* and activator (Urea, KCl, NaOH, NaCl) on chemical properties of Ultisol, nutrient content, and growth of maize. More over, NaOH and Urea were better activators than the others for the chemical properties of Ultisol. Application of NaOH as an activator could raise soil pH from 4.97 to 5.72,decreased Al_exchangeable into unmeasured, increased organic-C by 0.37%, P-available by 12.26 ppm, CEC by 11.34 me/100g, N-total by 0.1% also improved plant height by 18.58 cm, N content by 0.18%, and P content by 0.31% of plant compared to plant without activator. Application of *Subbituminus* powder 0.5% increased pH value by 0.35, decreased the Al_exchahngeable into unmeasured, and increased organic-C by 0.28% compared to 0.25% *Subbituminus* application.

Keywords: Ultisol, *Subbituminus* powder, activators