APLIKASI BUBUK BATUBARA MUDA SUB-BITUMINUS YANG DIAKTIVASI DENGAN UREA DALAM MEMPERBAIKI SIFAT KIMIA ULTISOL DAN PERTUMBUHAN TANAMAN KELAPA SAWIT

(*Elaeis guineensis Jacq.*)

SKRIPSI

OLEH :

TRISA OMILY
1510231005

Pembimbing:

1. **Prof. Dr. Ir. Herviyanti, MS**
2. **Dr. Ir. Teguh Budi Prasetyo, MS**

PROGRAM STUDI ILMU TANAH
FAKULTAS PERTANIAN
UNIVERSITAS ANDALAS
PADANG

2020

APLIKASI BUBUK BATUBARA MUDA SUB-BITUMINUS YANG DIAKTIVASI DENGAN UREA DALAM MEMPERBAIKI SIFAT KIMIA ULTISOL DAN PERTUMBUHAN TANAMAN KELAPA SAWIT (*Elaeis guineensis Jacq*.)

Abstrak

Ultisol merupakan salah satu jenis tanah suboptimal dengan kesuburan rendah sehingga perlu dilakukan penambahan bahan organik untuk meningkatan kesuburan tanah. Penelitian bertujuan untuk melihat pengaruh bubuk batubara muda Sub-bituminus yang diaktivasi dengan Urea dalam memperbaiki sifat kimia Ultisol dan pertumbuhan tanaman kelapa sawit. Penelitian dilaksanakan di Kecamatan Pulau Punjung Kabupaten Dharmasraya menggunakan Rancangan Acak Kelompok (RAK) dengan 6 perlakuan dan 3 kelompok. Dosis perakuan terdiri dari A = 150 g/lubang tanam, B = 300 g/lubang tanam, C = 450 g/lubang tanam, D = 150 g/lubang tanam + 10% Urea, E = 300 g/lubang tanam + 10% Urea, F = 450 g/lubang tanam + 10% Urea. Hasil penelitian ini menujukkan pemberian bubuk batubara muda Sub-bituminus yang diaktivasi dengan Urea pada takaran 450 g/lubang tanam mampu memperbaiki sifat kimia Ultisol seperti meningkatkan nilai pH tanah 0,57 unit; N-total 0,13%; kandungan C-organik 0,69%; kandungan P-tersedia 3,25 ppm; KTK 16,14 me/100g; kation basa seperti K-dd 0,22 me/100g; Ca-dd 0,77 me/100g; Mg-dd 1,29 me/100g dan dapat menurunkan kandungan Al-dd hingga tak terukur. Pemberian bubuk batubara muda Sub-bituminus yang diaktivasi dengan Urea meningkatkan pertumbuhan tanaman Kelapa Sawit (*Elaeis guineensis Jacq*.). Peningkatan pertumbuhan tanaman terdapat pada perlakuan F (450 g/lubang tanam + 10% Urea) dengan peningkatan tinggi tanaman sebesar 48,34 cm, jumlah pelepah sebanyak 4 helai, diameter batang sebesar 1,71 cm, serta kadar hara N 0,014 %, P 0,005 %, dan K 0,003%.

Kata kunci : Kelapa Sawit. Sub-bituminus, Ultisol, Urea.

APPLICATION OF YOUNG COAL POWDER SUB-BITUMINOUS ACTIVATED WITH UREA FOR IMPROVEMENT OF CHEMICAL PROPERTIES OF ULTISOL AND GROWTH OF OIL PALM (*Elaeis guineensis Jacq.*)

Abstract

Ultisol is one of the suboptimal soil types with low fertility, thus it is necessary to add organic matter to improve the fertility. This study was aimed to study the effect of young coal powder sub-bituminous activated with Urea in improving chemical properties of Ultisol and growth of oil palm. This research was conducted in Pulau Punjung, Dharmasraya Regency using a randomized block design (RBD) with 6 treatments and 3 blocks. The doses of treatment consisted of A = 150 g/planting hole, B = 300 g/planting hole, C = 450 g/planting hole, D = 150 g/planting hole + 10% Urea, E = 300 g/planting hole + 10% Urea, F = 450 g/planting hole + 10% Urea. The results of this study showed that the use of young coal powder sub-bituminous activated with Urea at a dose of 450 g/planting hole was able to improve the chemical properties of Ultisol such as increasing soil pH by 0.57 unit, total-N by 0.13%, organic-C content by 0.69%, available-P content by 3.25 ppm, CEC by 16.14 cmol/kg, and alkali cations such as K- exchangeable by 0.22 cmol/kg; Ca- exchangeable by 0.77 cmol/kg; Mg-exchangeable 1.29 cmol/kg and decreasing Al-exchangeable until immeasurable. Application of young coal powder Sub-bituminous which was activated with Urea could improve oil palm (*Elaeis guineensis* Jacq.) growth. Increasing plant growth was found at F treatment (450 g/planting hole + 10% Urea) with an increase in plant height by 48.34 cm, number of fronds by 4 strands, stem diameter by 1.71 cm, and the nutrient content especialy N by 0.014%, P by 0.005%, and K by 0,003%.

Keywords: Palm Oil, Sub-bituminous, Ultisol, Urea.