

**PENGARUH DOSIS LIMBAH ABU TERBANG BATU BARA
DAN LAMA INKUBASI TERHADAP SIFAT KIMIA
TANAH GAMBUT**

SKRIPSI



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**FAKULTAS PERTANIAN
UNIVERSITAS ANDALAS
PADANG
2020**

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Abstrak

Penelitian ini bertujuan untuk mempelajari pengaruh interaksi antara dosis limbah abu terbang batu bara dan lama inkubasi terhadap sifat kimia tanah gambut, mempelajari pengaruh utama dosis limbah abu terbang batu bara serta mempelajari pengaruh utama lama inkubasi terhadap sifat kimia tanah gambut. Penelitian ini menggunakan polybag dan memakai Rancangan Acak Lengkap (RAL) dengan 2 Faktor yaitu dosis abu terbang batu bara yang terdiri dari 5 perlakuan (0 ton/ha; 10 ton/ha; 20 ton/ha; 30 ton/ha; 40 ton/ha) dan lama inkubasi yang terdiri dari 4 perlakuan (2 minggu; 4 minggu; 6 minggu; 8 minggu) dengan tiga ulangan. Pengamatan yang dilakukan pada penelitian ini terdiri dari pH H₂O, P-tersedia, KTK, Al-dd dan basa-basa. Data hasil pengamatan dianalisis dengan menggunakan uji F dan dilanjutkan DNMRT pada taraf 5 %. Hasil penelitian menunjukkan bahwa kombinasi perlakuan berinteraksi terhadap sifat kimia tanah seperti Kapasitas Tukar Kation, Mg-dd dan Na-dd. Dosis abu terbang batu bara dengan takaran 30 ton/ha merupakan dosis terbaik, mampu memperbaiki sifat kimia tanah gambut seperti menaikkan pH (0,19); menurunkan KTK tanah (34,37 me/100g); meningkatkan nilai Ca-dd (0,273 me/100g); Mg-dd (1,465 me/100g); K-dd (0,441 me/100g); Na-dd (0,481 me/100g), dan menurunkan Al-dd (1,294 me/100g). Lama inkubasi 2 minggu memberikan pengaruh yang terbaik dalam memperbaiki sifat kimia tanah gambut. Perlakuan lama inkubasi 2 minggu mampu meningkatkan nilai pH (4,38); KTK tanah (98,675 me/100g); P-tersedia (67,47 ppm); Ca-dd (1,104 me/100g); Mg-dd (1,933 me/100g); K-dd (1,153 me/100g); Na-dd (0,883 me/100g) dan menurunkan nilai Al-dd tanah (1,119 me/100g).

Kata kunci: *abu terbang batu bara, lama inkubasi, gambut, sifat kimia tanah*

THE EFFECT OF DOSAGE OF FLY ASH WASTE AND INCUBATION TIME ON PEAT CHEMICAL PROPERTIES

Abstract

This study aims to study the effect of interactions between the dose of coal fly ash waste and incubation time on the chemical properties of peat soils, to study the main effects of coal fly ash waste dosage and to study the main effects of incubation time on the chemical properties of peat soils. This study uses a polybag and uses a Completely Randomized Design (CRD) with 2 factors, namely the dose of coal fly ash consisting of 5 treatments (0 tons/ha; 10 tons/ha; 20 tons/ha; 30 tons/ha; 40 tons/ha) and incubation time consisting of 4 treatments (2 weeks; 4 weeks; 6 weeks; 8 weeks) with three replications. Observations made in this study consisted of pH H₂O, P-available, CEC, exchangeable Al, and bases. Observation data were analyzed using the F test and followed by DNMRT at the 5% level. The results showed that there was an interaction between the combination of treatments on peat soil and the chemical properties of CEC, exchangeable Mg, and exchangeable Na. The results showed that the combination of treatments interacted with the soil chemical properties such as Cation Exchange Capacity, exchangeable Mg, and exchangeable Na. The dose of 30 tons/ha of coal fly ash is the best because the application of coal fly ash at a dose of 30 tons/ha can improve the chemical properties of peat soils as increasing pH (0.19); reduce the value of CEC (34.37 me/100g); the availability of P-available in soils is not significantly reduced (5.35 ppm); increasing exchangeable Ca values (0.273 me/100 g); exchangeable Mg (1.465 me/100g); exchangeable K (0.441 me/100g) and exchangeable Na (0.481 me/100g) and the amount of Al are in the low criteria (1.294 me/100g). Incubation time of 2 weeks is the best time to improve the chemical properties of peat soils because it increases the pH value (4.38); CEC of soil (98.675 me/100g); P-available (67.47 ppm); exchangeable Ca (1.104 me/100g); exchangeable Mg (1.933 me/100g); exchangeable K (1.153 me/100g); exchangeable Na (0.883 me/100g) and soil exchangeable Al value (1.119 me/100g).

Keywords: *fly ash, incubation time, peat soils, the chemical properties.*