PENGARUH TINGKAT KEMATANGAN DAN KADAR LENGAS GAMBUT TERHADAP EMISI GAS KARBONDIOKSIDA (CO_2) DAN SIFAT KIMIA TANAH GAMBUT KALIMANTAN TENGAH

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ABSTRAK

Pemanasan global merupakan persoalan lingkungan dan menjadi ancam sejak beberapa tahun belakangan ini. Sumber gas utama pemanasan global ialah gas karbondioksida (CO_2). Keberadaan dan konsentrasi gas CO_2 di atmosfer terus meningkat, sehingga perlu mendapatkan perhatian serius. Gambut yang memiliki tingkat kematangan dan kadar lengas yang berbeda akan menentukan besarnya emisi CO_2 yang dihasilkan selama pembukaan lahan gambut untuk budidaya pertanian. Tujuan penelitian ini yaitu mengetahui pengaruh tingkat kematangan dan kadar lengas gambut terhadap sifat kimia tanah gambut dan produksi gas karbon dioksida (CO_2). Penelitian ini dilaksanakan di Balai Penelitian Tanah Cimanggu, Bogor. Rancangan percobaan yang digunakan adalah Rancangan Acak Lengkap (RAL) dua faktor dengan 3 ulangan. Masing-masing faktor yaitu tingkat kematangan gambut (Fibrik, Hemik dan Saprik) dan kadar lengas gambut (100%, 150%, 200%, 250%, 300%). Data hasil penelitian dianalisis dengan ANOVA dan dilanjutkan dengan uji DMRT *(Duncan's Multiple Range Test)* pada jenjang 5%. Hasil penelitian menunjukkan tingkat kematangan gambut saprik berpengaruh terhadap penurunan emisi CO_2, C-Organik dan peningkatan kadar abu, tetapi tidak berpengaruh terhadap nilai Eh. Perlakuan kadar lengas tidak berpengaruh terhadap emisi CO_2, C-Organik dan kadar abu, tetapi pada kadar lengas 300% berpengaruh terhadap penurunan Eh. Terjadi interaksi pada kombinasi perlakuan gambut saprik dengan kadar lengas 300% memberikan perubahan nilai pH tanah dan N total tertinggi, serta C/N paling rendah.

Kata kunci : *Emisi CO_2, Kadar Lengas, Kematangan, Gambut*

EFFECTS OF PEAT MATURITY AND MOISTURE CONTENT ON CARBON DIOXIDE (CO_2) EMISSION GASSES AND SOIL CHEMICAL PROPERTIES AT CENTRAL KALIMANTAN PEAT

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ABSTRACT

Global warming is an environmental problem and has become a threat since the last few years. CO_2 gases are part of the greenhouse effect on global warming. The presence of CO_2 gases in the atmosphere is more abundant and the concentration of these two gases continues to increase, so it needs serious attention. Peat soils that have different levels of maturity and moisture content will determine the amount of CO_2 emissions generated during the clearing of peatlands for agricultural cultivation. The study aimed to find out and identify the effect of maturity and moisture content on soil chemical properties and the production of carbondioxide (CO_2) gasses. The research was conducted on Soil Research Institute Cimanggu Bogor from July until September 2020. This study was designed by completely randomized design in two factors with 3 replications. The first factor was peat maturity (Fibrik, Hemik, Saprik) and the second factor was moisture content (100%, 150%, 200%, 250%, 300%). All datas were analysed with 5% grade of DMRT. The research show sapric peat maturity has an effect on reducing CO_2 emissions, C-Organic and increasing ash content, but does not affect the Eh value. Treatment of moisture content did not affect CO_2 emissions, C-Organic and ash content, but at 300% moisture content has an affect on decreased Eh. An interaction occurred in the combination of sapric peat treatment with a water content of 300% giving the highest change in soil pH and total N, and the lowest C / N.

Keyword : *CO_2 and CH_4 emission, Moisture Content, Peat, Peat Maturity*