ABSTRACT

The Rate of Carbon Dioxide (CO_2) Emission and Ground Water Content of Paddy Land at Generatif Phase because of Cultivation Technique and Rice Straw. This research has done at paddy land on Pertambangan St., Medan Baru District, Medan.

This research used Main Separated Design with cultivation technique as main treatment and the sub-treatment is rice straw with 3 treatments and 2 replications. The treatments were J_0 (control), J_1 (fresh rice straw = 10 ton/ha), and J_2 (rice straw compost = 10 ton/ha).

The results showed that cultivation technique and rice straw had significant effect to the amount of CO_2 emission and ground water content. Conventional cultivation technique produce CO_2 and ground water content bigger than SRI (*System of Rice Intensification*) technique. The use of fresh rice straw produce CO_2 and ground water content bigger than rice straw compost. Interaction of both had really significant to the amount of CO_2 emission and ground water content which is the highest value of both produced from interaction of conventional cultivation technique and fresh rice straw and the lowest value of both produced from interaction of SRI technique and rice straw compost.

Key words : CO_2 emission, ground water content, paddy land, cultivation technique, rice straw

ABSTRAK

Laju Emisi Gas Karbondioksida (CO_2) dan Persentase Kadar Air Tanah pada Lahan Padi Sawah saat Fase Generatif akibat Teknik Budidaya dan Pemberian Jerami. Penelitian ini dilakukan pada lahan sawah di Jl. Pertambangan, Kecamatan Medan Baru, Medan.

Penelitian ini menggunakan rancangan petak terpisah dengan petak utama adalah teknik budidaya dan anak petak adalah pemberian jerami dengan 3 taraf dan 2 ulangan. Setiap perlakuan terdiri dari J_0 (kontrol), J_1 (jerami segar = 10 ton/ha), dan J_2 (kompos jerami = 10 ton/ha).

Hasil penelitian menunjukkan bahwa teknik budidaya dan jerami berpengaruh nyata terhadap emisi CO_2 dan persentase kadar air tanah. Teknik budidaya konvensioal menghasilkan emisi CO_2 dan kadar air tanah yang lebih tinggi daripada teknik budidaya SRI (*System of Rice Intensification*). Pemberian jerami segar menghasilkan emisi CO_2 dan persentase kadar air tanah yang lebih tinggi dibandingkan dengan pemberian kompos jerami. Interaksi antara teknik budidaya dan jerami berpengaruh sangat nyata terhadap emisi CO_2 dan persentase kadar air tanah dimana emisi CO_2 dan kadar air tanah tertinggi terdapat pada interaksi antara teknik budidaya konvensional dan jerami segar dan yang terendah pada interaksi teknik budidaya SRI dan kompos jerami.

Kata kunci : emisi CO_2, kadar air tanah, lahan padi sawah, teknik budidaya, jerami

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