

**KAJIAN KANDUNGAN KARBON ORGANIK TANAH PADA
BERBAGAI POLA TANAM LAHAN SAWAH DI KECAMATAN
PASAMAN KABUPATEN PASAMAN BARAT**

SKRIPSI

OLEH

ANNA SULISTIYA NINGSIH

1310231004

DOSEN PEMBIMBING:

- 1.Prof.Dr.Ir.Azwar Rasyidin,MSc**
- 2.Prof.Dr.Ir.Amrizal Saidi,MS**



**FAKULTAS PERTANIAN
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ABSTRAK

Penelitian ini bertujuan untuk mengetahui kandungan karbon organik tanah pada berbagai pola tanam (Padi-padi-padi, padi-padi-jagung dan padi-padi-bayam dan kangkung) pada lahan sawah dilaksanakan pada bulan Mei 2017 sampai dengan Desember 2018. Metode yang digunakan adalah metode survei dengan teknik purposive random sampling. Sampel tanah di ambil berdasarkan horizon tanah. Parameter yang dianalisis yaitu Tekstur Tanah, % C-Organik, Berat Volume, pH, Kapasitas Tukar Kation, Kation Basa dan Pori Air Tersedia. Konsentrasi karbon organik tanah ditentukan dengan metode Walkley –Black. Kandungan karbon organik tanah di hitung dari % C-organik, berat volume tanah dan kedalaman tanah. Hasil Penelitian ini menunjukkan jumlah karbon tersimpan pada pola tanam padi-padi-padi terbesar pada horizon B kedalaman tanah 20-35 cm sebesar 15,76 C kg/m² dan pola tanam padi-padi-jagung terbesar pada horizon B3 kedalaman tanah 25-50 cm sebesar 7,32 C kg/m² serta pola tanam padi-padi-kangkung dan bayam terbesar pada horizon B1 kedalaman 35-55 cm sebesar 21,43 C kg/m². Berdasarkan analisis laboratorium % C-Organik mempengaruhi nilai Berat Volume, semakin tinggi %C-organik semakin rendah nilai Berat Volume, karena berat fraksi organik lebih rendah dibandingkan fraksi mineral tanah. Nilai Kapasitas Tukar Kation berbanding lurus dengan %C-Organik. Hasil penelitian ini juga menemukan bahwa padi-padi-kangkung dan bayam merupakan tanaman selingan yang dapat menyerap CO₂ paling banyak di dalam tanah dari pada pola tanam padi dan jagung.

Kata kunci : Karbon Organik Tanah, lahan sawah, pola tanam

STUDY ON SOIL ORGANIC CARBON CONTENT AT DIFFERENT PATTERNS OF RICE FIELD CULTIVATION IN PASAMAN DISTRICT WEST PASAMAN REGENCY

ABSTRACT

A research on soil organic carbon content at different pattern (Rice-rice-rice, rice-rice-corn and rice-spinach and water spinach) in rice fields was conducted from May 2017 until December 2018. The method used for this research was survey method at which soil samples were taken based on purposive random sampling technique. The parameters analyzed were soil texture, % organic- C, bulk density, pH, cation exchange capacity, basic cation, and plant available water. The concentration of soil organic carbon was determined by the Walkley-Black method. Soil organic carbon content was calculated from % organic-C, bulk density, and soil depth. The results of this study showed that the largest amount of carbon stored (15.76 C kg/m^2) was found on horizon B (20-35 cm soil depth), the rice-rice-rice cultivation pattern, then followed by the rice-rice-corn patterns (7.32 C kg/m^2) which was found on horizon B3 (25-50 cm soil depth) and the rice-rice-spinach and water spinach cultivation pattern (21.43 kg C / m^2) which was found on horizon B1 (35-55 cm soil depth). Based on the data collected the soil bulk density decreased as the % organic-C increased. The value of cation exchange capacity (CEC) was directly proportional to % organic-C. This study also found that rice-rice-water spinach and spinach was the best pattern that could absorb the more CO_2 than the rice and corn cultivation pattern.

Keywords: Soil Organic Carbon, Rice Field, Cultivation Pattern

