RINGKASAN

C-organik merupakan sistem kompleks dan dinamis yang berasal dari sisa tanaman dan atau binatang yang terdapat didalam tanah yang mengalami perubahan bentuk secara terus menerus yang dipengaruhi oleh berbagai faktor, baik faktor biologi, kimia, maupun fisika yang digunakan sebagai pendukung kesuburan suatu tanah. Kecamatan Mandiraja merupakan kecamatan dengan produksi padi tertinggi yang terdapat di Kabupaten Banjarnegara. Penelitian ini bertujuan untuk 1) mengkaji pola sebaran C-organik tanah, 2) mengetahui nilai korelasi antar variabel pengamatan, dan 3) mengetahui rekomendasi pemupukan organik di Kecamatan Mandiraja, Kabupaten Banjarnegara.

Penelitian ini dilaksanakan secara survei di lahan sawah pada budidaya tanaman padi Kecamatan Mandiraja, Kabupaten Banjarnegara dan Laboratorium Tanah Sumberdaya Lahan, Fakultas Pertanian, Universitas Jenderal Soedirman**,** Purwokerto. Penentuan titik sampel didasarkan atas satuan lahan homogen dengan memperhatikan penyebaran lokasi yang didasarkan pada garis tegak lurus memotong aliran sungai utama (Sungai Serayu). Pengambilan sampel tanah dan jaringan tanaman dilakukan secara komposit di setiap lokasi pengamatan. Variabel yang diamati meliputi pH H_2O, pH KCl, Daya Hantar Listrik (DHL), potensial redoks, C-organik, Kapasitas Tukar Kation (KTK), tekstur tanah, dan wawancara dengan petani.

Hasil penelitian menunjukkan bahwa rerata kandungan C-organik yang terdapat di lahan sawah Kecamatan Mandiraja berkisar antara 0,48-2,26% pada SLH 1 dengan nilai rerata 1,22 yaitu termasuk pada kategori rendah. Pada SLH 2 kandungan C-organik tanah berkisar antara 0,06-2,4% dengan nilai rerata 1,21 yaitu termasuk pada kategori rendah. Didapatkan hasil korelasi antar variabel pada setiap kedalaman, memiliki nilai korelasi yang lemah. Rekomendasi pemupukan organik di lokasi penelitian berkisar antara 2,6-11,1 ton/ha dengan menggunakan pupuk kompos. Rekomendasi pemupukan ini ditentukan berdasarkan kandungan C-organik yang kemudian dilakukan peningkatan satu tingkat dari harkatnya.

SUMMARY

C-organic is a complex and dynamic system that originates from plant and/or animal remains found in the soil which undergo continuous changes in shape which are influenced by various factors, both biological, chemical, and physical factors which are used to support the fertility of a soil. Mandiraja District is the district with the highest rice production in Banjarnegara Regency. The objectives of this research were to: 1) acknowledge the distribution pattern of soil organic carbon, 2) acknowledge the correlation value between observed variables, and 3) acknowledge recommendations for organic fertilization in Mandiraja District, Banjarnegara Regency.

This research was conducted by survey method in rice field at Mandiraja District, Banjarnegara Regency and the Soil Resources Laboratory, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto. Sampling technique determined based on the homogeneous land unit system regarding the distribution of location, based on perpendicular line intersecting the main river flow (Serayu River). Soil sampling and plant tissue were conducted compositely at each sampling point. Variables observed in this research are, pH H_2O, pH KCl, electrical conductivity (EC), oxidation/reduction potential (Eh), organic carbon, Cation Exchange Capacity (CEC), soil texture, and interviews with farmers.

The results of the research show that the average C-organic content found tn the rice fields of Mandiraja Distict ranges from 0.48-2.26% at land unit 1 with an average value of 1.22, which is included in the low category. At land unit 2 the soil C-organic content ranges from 0.06-2.4% with an average value of 1.21% which is included in the low category. The correlation results between variables at each depth were found to have weak correlation value. Recommendations for organic fertilization at the research location range from 2.6-11.1 tonnes/ha using compost. This fertilizer recommendation is determined based on the C-organic content which is then increased by one level of value.