RINGKASAN

Tanaman padi *(Oryza sativa)* merupakan komoditas strategis di banyak negara dan lebih dari separuh penduduk dunia mengandalkan beras sebagai sumber karbohidrat. Bagi sebagian besar masyarakat Indonesia, padi selain berfungsi sebagai makanan pokok padi juga merupakan sumber mata pencaharian. Tujuan penelitian ini adalah : mengetahui kandungan C-Organik tanah di lahan sawah yang digunakan untuk budidaya tanaman padi di Sub DAS Serayu Kecamatan Susukan, Kabupaten Banjarnegara, mengetahui korelasi C-Organik tanah dengan sifat kimia tanah di lahan sawah Sub DAS Serayu Kecamatan Susukan, Kabupaten Banjarnegara, dan mengetahui rekomendasi pupuk organik di Sub DAS Serayu Kecamatan Susukan, Kabupaten Banjarnegara.

Penelitian dilaksanakan di lahan sawah dengan pertanaman padi di Kecamatan Susukan Kabupaten Banjarnegara pada Desember 2022 hingga Agustus 2023. Metode penelitian yang digunakan ialah survei lapangan *purposive random sampling*. Peta penggunaan lahan, peta administrasi, peta jenis tanah, dan peta kelerenan dijadikan peta satuan lahan homogen (SLH) dengan cara *overlay* dengan skala 1:50.000. Berdasarkan tingkat ketelitian, setiap titik sampel tanah dapat mewakili 100 ha lahan sawah. Sampel tanah diambil dengan melakukan pengeboran tanah pada kedalaman 0-25 cm dan 25-50 cm yang dilakukan secara komposit pada setiap lapisan tanah. Variabel yang diamati meliputi pH H_2O tanah, pH KCl tanah, potensial redoks tanah, daya hantar listrik (DHL) tanah, dan C-organik tanah. Selain itu, diambil sampel malai padi untuk menghitung produktivitas padi.

Hasil penelitian menunjukkan bahwa agihan unsur hara C-organik di lahan sawah memiliki nilai 0,30-1,13% berharkat sangat rendah hingga rendah dengan rerata 0,58 berharkat sangat rendah. Kandungan C-organik tanah memiliki korelasi cukup tinggi dengan beberapa variabel diantaranya; hasil tanaman padi (r = 0,549*) dan C/N rasio (r = 0,791*). Kebutuhan pupuk organik yang direkomendasikan berkisar 17,53-29,70 ton/ha dengan rerata 25,45 ton/ha.

Kata kunci: C-organik tanah, padi sawah, rekomendasi pupuk organik

SUMMARY

The rice plant (Oryza sativa) is a strategic commodity in many countries and more than half of the world's population relies on rice as a source of carbohydrates. For most Indonesian people, rice, apart from functioning as a staple food, is also a source of livelihood. The objectives of this research are: to determine the C-Organic content of soil in rice fields used for rice cultivation in the Serayu Sub-Watershed, Susukan District, Banjarnegara Regency, to determine the correlation of soil C-Organic with the chemical properties of soil in the rice fields of the Serayu Sub-Watershed, Susukan District, Regency. Banjarnegara, and know the recommendations for organic fertilizer in the Serayu Sub-watershed, Susukan District, Banjarnegara Regency.

The research was carried out in rice fields with rice cultivation in Susukan District, Banjarnegara Regency from December 2022 to August 2023. The research method used was a purposive random sampling field survey. Land use maps, administrative maps, soil type maps and slope maps are made into homogeneous land unit (HLU) maps by overlaying them at a scale of 1:50,000. Based on the level of accuracy, each soil sample point can represent 100 ha of rice fields. Soil samples were taken by drilling the soil at a depth of 0-25 cm and 25-50 cm which was carried out compositely in each soil layer. The variables observed included soil H_2O pH, soil KCl pH, soil redox potential, soil electrical conductivity (Ec), and soil organic C. In addition, samples of rice panicles were taken to calculate rice productivity.

The research results showed that the distribution of C-organic nutrients in paddy fields had a value of 0.30-1.13%, which was very low to low, with an average of 0.58, which was very low. Soil organic C content has a fairly high correlation with several variables including; rice yield (r = 0.549) and C/N ratio (r = 0.791*). The recommended need for organic fertilizer ranges from 17.53 to 29.70 tonnes/ha with an average of 25.45 tonnes/ha.*

Key words: C-organic soil, lowland rice, recommendations for organic fertilizer