RINGKASAN

Tanaman padi (*Oryza sativa.* L) merupakan komoditas utama yang selalu dibudidayakan oleh petani Indonesia, karena tanaman padi merupakan tanaman pokok yang dimanfaatkan sebagai kebutuhan primer masyarakat luas. Tetapi banyak hal yang menjadi kendala dalam produktivitas budidaya tanaman padi salah satunya adalah pemupukan. Karbon organik (C-organik) dalam ekosistem tanah merupakan komponen penting yang mempengaruhi sifat-sifat tanah lainnya untuk mendukung pertumbuhan tanaman, yaitu sebagai sumber energi dan pemicu ketersediaan unsur hara bagi tanaman. Kadar karbon organik (C-organik) didalam tanah mencerminkan kandungan bahan organik tanah yang merupakan parameter penting untuk pengelolaan tanah-tanah pertanian. Kandungan bahan organik dalam tanah merupakan salah satu faktor yang berperan dalam menentukan keberhasilan suatu budidaya tanaman. Tujuan dilaksanakannya penelitian di Kecamatan Jatilawang, Kabupaten Banyumas yaitu: 1) Mengetahui agihan C-organik di lahan sawah irigasi Kecamatan Jatilawang, Banyumas. 2) Mengetahui kandungan C-organik pada tanah sawah irigasi terhadap produksi tanaman padi (*Oryza sativa* L.) di Kecamatan Jatilawang, Banyumas. 3) Mengetahui status ketersediaan C-organik dan sebarannya di lahan sawah irigasi Kecamatan Jatilawang, Banyumas.

Penelitian ini dilakukan pada mulai dari bulan Juni 2020 sampai Oktober 2020. Metode penelitian yang digunakan adalah survei tinjau mendalam dengan skala peta 1:50.000, satu titik sampel mewakili 50-150 hektar. Peta SLH dibuat dengan menumpang tindihkan peta (*overlay*) peta administrasi, peta jenis tanah, peta kelerengan dan peta penggunaan lahan di Kecamatan Jatilawang. Hasil *Overlay* peta memperoleh 2 (dua) SLH. Penentuan titik sampel didasarkan atas SLH dengan memperhatikan penyebaran secara proposional, mengikuti metode transek. Pengambilan sampel tanah dilakukan secara komposit di setiap lokasi pengamatan. Sampel tanah diambil dengan melakukan pengeboran tanah pada kedalaman 0-25 cm dan 25-50 cm. Pengeboran dilakukan sebanyak 4 (empat) titik secara acak dengan jarak antar titik 2-3 m (*zig-zag*). Variabel yang diamati meliputi pH (potensial hidrogen) H_2O (air), pH KCl (kalium clorida), DHL (daya hantar listrik) tanah, Potensial redoks, C-Organik, N Total, CN Ratio, dan Hasil tanaman padi.

Hasil penelitian menunjukkan bahwa agihan C-Organik tanah di Kecamatan Jatilawang, Kabupaten banyumas tergolong kedalam harkat sangat rendah sampai sedang dengan kisaran nilai 0,46%-2,29%. Hubungan antara C-Organik tanah dengan hasil tanaman padi memiliki nilai r sebesar 0,70 yang artinya memiliki hubungan korelasi positif. Ketersediaan C-Organik di lahan sawah irigasi pada budidaya tanaman padi di titik 1 desa Tunjung memiliki harkat sangat rendah, di titik 2 desa Bantar berharkat sedang, di titik 3 desa Kedungwringin berharkat rendah, di titik 4 desa Adisara berharkat rendah, di titik 5 desa Karanglewas berharkat sedang, di titik 6 desa Karanganyar berharkat sedang, di titik 7 desa Margasana berharkat sangat rendah, di titik 8 desa Gentawangi berharkat rendah, di titik 9 desa Bantar berharkat rendah, dan di titik 10 desa Gentawangi berharkat sangat rendah.

SUMMARY

The rice plant (Oryza sativa. L) is the main commodity that is always cultivated by Indonesian farmers, because the rice plant is a staple crop that is used as the primary need of the wider community. However, many things become obstacles in the productivity of rice cultivation, one of which is fertilization. Organic carbon (C-organic) in the soil ecosystem is an important component that influences other soil properties to support plant growth, namely as a source of energy and a trigger for the availability of nutrients for plants. The content of organic carbon (C-organic) in the soil reflects the content of soil organic matter which is an important parameter for the management of agricultural soils. The content of organic matter in the soil is one of the factors that plays a role in determining the success of a plant cultivation. The purpose of carrying out research in Jatilawang District, Banyumas Regency:) to perceive the distribution of C-Organic in irrigated rice fields in Jatilawang District, 2) the content of C-organic in irrigated Rice Fields soil on rice production (Oryza sativa L.) in Jatilawang District, Banyumas, 3) Status of C-organic availability and distribution in irrigated rice fields in Jatilawang District, Banyumas .

This research was conducted from June 2020 to October 2020. The research method used was an in-depth survey with a map scale of 1:50,000, one sample point representing 50-150 hectares. The SLH map was created by overlaying the administrative map, soil type map, slope map and land use map in Jatilawang District. The results of the map overlay obtained 2 (two) SLH. Determination of sample points is based on SLH by taking into account the proportional distribution, following the transect method. Soil samples were taken in a composite manner at each observation location. Soil samples were taken by drilling the soil at a depth of 0-25 cm and 25-50 cm. Drilling is carried out as many as 4 (four) points randomly with a distance between points of 2-3 m (zigzag). The variables observed included pH (potential hydrogen) H2O (water), pH of KCl (potassium chloride), DHL (electrical conductivity) soil, redox potential, C-Organic soil, total N, CN Ratio, and rice yield.

The results showed that the soil organic C-agition in Jatilawang District, Banyumas Regency was classified as very low to moderate with a value range of 0,46% -2,29%. The correlation between soil C-Organic and rice yields has an r value of 0,70 which means that it has a positive correlation. The availability of C-Organic in irrigated rice fields in rice cultivation at point 1 in Tunjung village is very low, at point 2 Bantar village is moderate, at point 3 Kedungwringin village is low, at point 4 Adisara village is low, at point 5 villages Karanglewas has medium grade, at point 6 is Karanganyar village is moderate, at point 7 is Margasana village is very low grade, at point 8 is Gentawangi village is low grade, at point 9 is Bantar village is low grade, and at point 10 is Gentawangi Village is very low.