ASSESSING OF SOIL QUALITY ON RICE FIELDS WITH DIFFERENT FERTILIZATION IN DELANGGU VILLAGE, DELANGGU DISTRICT KLATEN REGENCY, CENTRAL JAVA PROVINCE

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ABSTRACT

The rice fields in Delanggu Village have limiting factors, namely the texture of the Regosol soil, which has poor water holding capacity, and the content of nutrients and soil organic matter is low. Farmers in Delanggu Village overcome these limitations by carrying out a muddying process before the land is put into use and making efforts to improve the soil by adding organic fertilizer to organic and semi-organic rice fields. The addition of organic fertilizer has been carried out since 2016. This research aims to determine the value of soil quality in rice fields. The research method uses survey methods and soil tests. The systematic random sampling method was determined based on different fertilizers, namely organic, semi-organic and inorganic fertilizers. Determination of sample points is based on the area of rice fields and the amount of chemical fertilizer applied. Soil Quality Index assessment is based on the criteria of Mausbach and Seybold (1998). The physical characteristics of the soil in paddy fields in Delanggu Village are that it has shallow to deep root depth, a volumetric weight value of 0.745 to 0.887 g/cm3, good porosity, a clay and silt texture, an NPD value that is resistant to erosion. The chemical characteristics of the soil are that it has a slightly acidic to neutral pH, moderate to high N-available, moderate to very high P-available, moderate to very high exchangeable K. Soil biological characteristics are medium to high organic C, very low to high total N, and medium to very high C/N ratio. The research results show differences in the Soil Quality Index according to fertilization. The average Soil Quality Index for paddy fields with semi-organic fertilization has a value of 0.605 with good marks, organic fertilization is 0.567 with medium marks, and inorganic fertilization is 0.435 with medium marks.

Keywords: differences fertilization, inorganic, organic, semi-organic, soil quality, rice fields.