SOIL ORGANIC CARBON *TYPIC HAPLUDERTS* ON DIFFERENT SLOPES AND LAND USES IN CANDIREJO VILLAGE, SEMIN DISTRICT, GUNUNGKIDUL REGENCY

By: Shofiana Kholifatul Fathonah Aulia
Supervised by: Mohammad Nurcholis

ABSTRACT

Organic carbon is a key component in the carbon cycle that plays an important role in determining soil quality. The study aims to find out the level of organic carbon in the soil on the different slopes and land uses in Candirejo Village, Semin District, Gunungkidul Regency. Soil sampling is done by making a soil mini-pit sample and taking two soil samples based on the difference in soil color, as well as on soil processing layers with depths of 0-10 cm and 10-20 cm. This study uses a survey method with the determination of the sample point through purposive sampling on the soil Typic Hapluderts based on differences in slope and land uses. The observed parameters are: C-organic and organic matter use Walkley and Black methods; soil texture use pipette methods; soil bulk density use volumetric ring method; pH H_2O use potentiometric method; and soil color Munsell methods. The results of the research showed that soil organic C levels at different slopes and land uses showed different results. Organic C content at the flat slope was 1.64% (low), while the gentle slope was 1.21% (low). The bushes were 1.55% (low), the fields were 1.20% (low), the settlements were 1.31% (low), the rice fields were 0.86% (very low), and the gardens were 2.19%. (medium). The slopes have no significant effect on soil organic C levels. Land uses have a significant effect on soil organic C levels, thus causing significant differences in soil organic C levels at rice fields (0.86%) lower than gardens, bushes, settlements, and fields. Soil organic C has a strong and significant relationship with the soil color L* (lightness), so the soil color is darker.

Keywords: *Typic Hapluderts*, organic carbon, slope, land use