

**THE RELATIONSHIP BETWEEN THE C-ORGANIC LEVELS OF PADDY  
SOIL AND RICE PRODUCTION IN KALURAHAN SIDOLUHUR,  
KAPANEWON GODEAN, SLEMAN DISTRICT**

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**ABSTRACT**

*Organic matter plays an important role in determining the soil's ability to support plant growth. When the organic matter levels decrease, the soil's ability to support plant productivity also decreases. This research aims to determine the distribution of C-Organic and the relationship between the level of C-Organic availability and rice production in Sidoluhur Village, Kapanewon Godean, Sleman Regency. The method used in selecting the location uses a purposive method. Soil sampling was carried out using a free grid survey method with a size of 500 m x 500 m. The parameters for laboratory analysis are C-Organic using the Walkley and Black method, texture using the hydrometer method, KPK, pH, and Eh. Next, linear regression analysis was carried out on 25 samples to determine the relationship between C-Organic and rice production. The distribution of C-Organik was mapped using ArcGIS 10.4 software. The research results showed that there was a distribution of C-Organic in 222 hectares of total rice fields, namely with a low value of 9 hectares (4.05%), a medium value of 175 hectares (78.8%) and a high value of 38 hectares (17.12%). There is a relationship between C-Organic levels and rice production through the regression equation  $y = 13.95x + 17.61$  with a correlation value ( $r$ ) of 0.888, which means it is very strong.*

**Keywords :** *C-Organic, rice production, linear regression, free grid, Walkley and Black*