

Status of Nitrogen and Carbon Nutrients in Agroforestry Plots of Elephant Grass - Acacia, Teak, and Indigofera in Wanagama, Playen, Gunungkidul, Special Region of Yogyakarta

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ABSTRACT

Limited agricultural land is one of the problems in sustainable agriculture in the Special Region of Yogyakarta. One effort to overcome this problem is the introduction of agroforestry systems. This study aimed to determine the content of nitrogen and carbon in the soil and litter in elephant grass agroforestry plots with Acacia, Teak and Indigofera trees. The method used in this study was a survey method with purposive sampling of soil and plant litter sampling, in each plot 3 samples were taken that were more than 3 years old. The results of this study showed that the soil carbon content of Elephant Grass-Indigofera was 2,19%, Elephant Grass-Teak was 2.64%, and Elephant Grass-Acacia had an average of 2.85%, all of which were classified as moderate. Soil nitrogen content of Elephant Grass-Indigofera was 0.42%, Elephant Grass-Teak is 0.41%, and Elephant Grass-Acacia had an average of 0.41%, all of which were classified as moderate. The C content and biomass in the litter from the agroforestry Elephant Grass-Indigofera plots were respectively 31.91% and 27.72 g/m², in Elephant Grass-Teak plots 33.00% and 30.88 g/m², and in Elephant Grass-Acacia plots 30.17%. While N total content and biomass in litter of the agroforestry Elephant Grass-Indigofera plots were respectively 2.35% and 2.1 g/m², in the Elephant Grass-Teak plots 2.99% and 2,68 g/m², and in the Elephant Grass-Acacia plots 2.67% and 2.42 g/m².

Keywords: Nitrogen, Carbon, C/N Ratio, Acacia, Teak, Indigofera