

# **STUDY OF SOME CHEMICAL AND BIOLOGICAL PROPERTIES OF GRUMUSOL SOIL IN A MIXED GARDEN OF TRIWIDADI PAJANGAN BANTUL**

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## **ABSTRACT**

Agroforestry on Grumusol consist of three groups of different rates of decomposition, these differences will have significant effects on soil chemical and biological properties. This study aims to determine the effect and the best results of some chemical and biological properties of Grumusol soil overgrown with vegetation of different decomposition rates in Triwidadi sub-district, Kapanewon Pajangan, Bantul regency. The method used in this research is survey method with purposive sampling. The results of the analysis of chemical and biological properties of mixed gardens showed that the highest value of each parameter was in the area planted with vegetation groups with rapid decomposition with the respective values of C-organic by 1.47%, N-total by 0.14%, P-available by 76 ppm, K-available by 198 ppm, humic acid by 0.0804%, field capacity moisture content by 27.75%, the number of soil microorganisms by  $1.951 \times 10^5$  CFU/g soil and soil respiration by 14.55 mg C-CO<sub>2</sub>/g soil/day. The results of the research that have been analysed show the effect of different vegetation on the speed of overhaul of the chemical and biological properties of soil as indicated by the real difference in the chemical and biological properties of Grumusol between the control and vegetation different speed of overhaul and there is a real difference in the chemical properties of the results of the analysis between different vegetation speed of overhaul, namely on the parameters of C-organic and humic acid. The results of the analyses that have been carried out show that the easy-to-remodel vegetation group consisting of tolo beans has the best average value of all research parameters even though there are differences that are not significant in several parameters that have been statistically analysed.

Keywords: Grumusol, agroforestry, chemical and biological properties, Triwidadi