

**EVALUATION OF RICE FIELD SOIL FERTILITY IN
VARIOUS CROP ROTATIONS IN SUMBERHARJO VILLAGE,
KAPANEWON PRAMBANAN,
SLEMAN DISTRICT**

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ABSTRACT

Sumberharjo Village is the largest village in Kapanewon Prambanan, Sleman Regency. The implementation of intensive rice monoculture system without crop rotation will affect the soil fertility. The decreasing of soil fertility can be overcome by implementing crop rotation with rice-secondary crops/horticulture rotation. The purpose of this study was to determine the chemical characteristics of the soil, the fertility status of paddy fields, and to determine the limiting factors of soil fertility in Sumberharjo Village. The study was conducted in Sumberharjo Village, Kapanewon Prambanan, Sleman Regency. The research method used survey and soil testing methods. The determination of the research location was carried out by purposive sampling on the use of paddy fields. The sampling method was carried out randomly based on the implementation of different crop rotations, so that 11 sample points were obtained. Determination of soil fertility status based on the technical guidelines for soil fertility evaluation of the Soil Research Center in 1995. Based on the analysis results on the rotation of rice-rice-rice, the results obtained were pH 5.53 (sour), K₂O (Very Low), C-organic, P₂O₅, CEC, KB (Low), and N-Total (Medium). The rotation of rice-rice-corn obtained the results of pH 5.68 (slightly sour), C-organic, N-Total (Very Low), P₂O₅, K₂O, CEC, and KB (Low). Rice-Rice-Chili obtained the results of pH 5.77 (slightly sour), C-organic, P₂O₅, K₂O, KB (Very Low), N-Total (Low), and CEC (Medium). Rice-rice-soybean obtained the results of pH 6.02 (slightly sour), P₂O₅ (Very Low), C-organic, K₂O, N-Total, KB (Low), and CEC (Medium). Rice-rice-peanut obtained results of 5.56 (slightly sour), C-organic, K₂O, KPK (Very Low), P₂O₅, KB (Low), and N-Total (Medium). Soil fertility status is dominated by low classes in rice-rice-rice, rice-rice-corn, rice-rice-chili, and rice-rice-soybean rotations and very low classes in rice-rice-peanut rotations. The limiting factors for soil fertility status in Sumberharjo Village are Cation Exchange Capacity (CEC), K₂O and C-Organic.

Keywords: Crop Rotation, Paddy Field Soil, Soil Fertility, Soil Fertility Evaluation.