

**ASSESSMENT OF CHEMICAL FERTILITY STATUS OF
RICE FIELDS IN NGRAJEK VILLAGE, MUNGKID DISTRICT,
MAGELANG REGENCY, CENTRAL JAVA**

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ABSTRACT

Ngrajek Village has natural water sources for rice fields irrigation so that rice cultivation is carried out without crop rotation. Land intensification without crop rotation and excessive use of chemical fertilizers can affect soil fertility. The purpose of this research was to determine the chemical properties of soil, assess soil fertility status, and to determine the limiting factors of rice field soil fertility without crop rotation in Ngrajek Village. The study was conducted in Ngrajek Village, Mungkid District, Magelang Regency, Central Java. The research method used survey and soil testing methods. Determination of sampling points used the purposive sampling method based on the use of rice fields without crop rotation and the age of the plants in the vegetative phase. The parameters analyzed included CEC, Base Saturation, C-Organic, P_2O_5 , and K_2O . Determination of soil fertility status was carried out based on the Technical Guidelines for Soil Fertility Evaluation of the Soil Research Center in 1995. The results of the analysis of the chemical properties of paddy soil obtained a Cation Exchange Capacity value of 22.00–28.00 Cmol (+) Kg^{-1} with a medium to high value, a Base Saturation value of 20.45–29.68% with a low value, a C-Organic value of 1.81–2.57% with a low to medium value, a P_2O_5 value of 10.12–16.68 mg/100g with a low value and a K_2O value of 273.12–333.54 mg/100g with a very high value. The results of the assessment of the fertility status of paddy soil in Ngrajek Village are classified as low. Low base saturation and low phosphorus content were identified as major limiting factors.

Keywords: *Chemical, Crop Rotation, Fertility, Limiting Factors, Ngrajek Village, Rice Fields, Soil.*