

***STATUS OF THE PHOSPHORUS NUTRIENT ELEMENT IN INTENSIVE
RICE SOIL IN KEDU VILLAGE, KEDU DISTRICT, TEMANGGUNG
DISTRICT, CENTRAL JAWA***

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ABSTRACT

This study aimed to determine the status and distribution of Fosfor nutrient in intensive paddy soils in Kedu Village, Kedu District, Temanggung Regency, Central Java. Intensive and continuous P fertilization is often carried out without considering the soil nutrient status, potentially leading to P accumulation. The research employed a descriptive-exploratory method through field surveys, soil sampling at 15 points, and laboratory analysis for soil pH, redox potential (Eh), available P, total P, and organic matter. The results indicated that the available P status was in the very high category, ranging from 32.92 to 79.57 ppm, and total P was also high, ranging from 225.99 to 2052.03 ppm. This high available and total P is attributed to the accumulation of inorganic fertilizer residues from intensive fertilization practices. Furthermore, the submerged conditions in paddy fields create a reductive environment (Eh ranging from low to moderate reduction, 10 mV - 279 mV) which triggers the release of Fosfor from iron and manganese mineral bonds, thereby increasing P availability for plants. Therefore, re-evaluation of P fertilization doses is recommended for efficiency and environmental sustainability.

Keywords : *Phosphorus, Available P, Total P, Redox Potential, Intensive Paddy Field*