

PHOSPHORUS MANAGEMENT IN CROPPING SEQUENCE USING WHEAT-MAIZE-SESAMUM ROTATION

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ABSTRACT

Nutrient management becomes essential when intensive cropping is practised specifically in high pH-calcareous soils. The objective of this study was to determine P requirement of a cropping sequence (wheat-maize-sesamum). In the sequence, 0, 60 80 and 120 kg P_2O_5 ha⁻¹ was applied to wheat and its residual effect was studied on following maize crop. After maize sesamum the last crop in rotation was planted and 0, 30, 60 and 0 kg P_2O_5 ha⁻¹ was applied to it in permanently laid out plots. In the first wheat crop, the grain yields were slightly higher where P was applied. The maize crop after wheat did not receive any P. The residual effect of P was manifested through increased yield in maize fodder succeeding P-fertilized wheat plots. Third crop (sesamum) in the rotation was applied with P. Grain yield response to applied P was significantly higher than control even in the treatment where P @ 120 kg ha⁻¹ was applied to wheat but not to sesamum. In the second cycle of the rotation P was again applied to wheat and all the treatments receiving P (60, 80 and 120 kg P_2O_5 ha⁻¹) gave significantly more grain yields than control. Maize fodder yield was higher in plots previously treated with P than control.