DETERMINATION OF OPTIMUM PHOSPHORUS RATE IN RICE-WHEAT CROPPING SYSTEM: GROWTH AND YIELD PARAMETERS

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ABSTRACT

A field experiment was conducted to evaluate how much P should be applied to the rice and wheat crops under rice-wheat cropping system. Phosphorus doses were set in such a way that each crop in the rice-wheat rotation received 0- 100 kg P_2O_5 ha^{-1} i.e., 0-0, 100-0, 75-25, 50-50, 25-75, and 0-100 kg P_2O_5 ha^{-1} , respectively. Nitrogen and potassium were applied uniformly to all the plots @120 and 60 kg ha^{-1}, respectively. A total of six treatments were repeated four times in randomized complete block design. Plant height and number of tillers $plant^{-1}$, paddy/wheat grain and straw yields were influenced significantly by the application of P. On the basis of overall results, 50-50 kg P_2O_5 ha^{-1} gave results statistically close to 100 kg P_2O_5 ha^{-1}.These results suggest that it is appropriate to apply half of recommended P to rice and other half to wheat instead of applying all P either to rice or wheat. Therefore, keeping in view, the economics and objectives of the experiment, application of 50-50 kg P_2O_5 ha^{-1} may be recommended for rice and wheat in rice-wheat cropping system.

Kev Words: Optimum phosphorus, rice, wheat, cropping system.