NITROGEN AND PHOSPHORUS REQUIREMENTS OF RICE GROWN AFTER WHEAT AND FIELD PEA

M.H. Baloch*, K.S. Memon** and Y.M. Memon***

ABSTRACT

A preliminary field study was undertaken to assess the nitrogen and phosphorus requirements of rice (cv. IR-6) when grown in succession to a legume (field pea) and non-legume (wheat). Wheat and field pea crops were grown to maturity on adjacent plots. Rice was grown as succeeding crop in both the plots during the next cropping season. On each plot, 13 selected fertilizer treatments were imposed in a factorial combination of four rates of N (0, 34, 68 and 135 kg N ha^{-1}) and four rates of P (0, 34, 68 and 135 kg P_2O_5 ha^{-1}). The soil from the experimental area was clayey (43% clay) in texture, alkaline in pH (7.6) and low in N (0.068%) and organic matter (1.02%). Available P (Olsen) content of the soil was 20 mg kg^{-1}).

The results showed that the nature of preceding crop i.e. wheat and field pea did not influence the grain yield and chemical composition of the succeeding rice crop. The application of P was not beneficial reflecting that the soil content of 20 mg kg^{-1} available P was enough to meet the P needs of rice crop. The rate of N applied was the only factor influencing the yield and N content of rice. Maximum grain yield and N content were obtained at maximum rate of applied N (135 kg·ha^{-1}). Treatments not receiving N, produced on an average, 61.5% of maximum grain yield.