Integrated Nutrient Management for Higher Productivity and Better Soil Health under Rice (*Oryza sativa*) - based Cropping Systems

M Malla Reddy and M Devender Reddy
Department of Agronomy, College of Agriculture, Acharya N.G. Ranga Agricultural University, Rajendranagar, Hyderabad.

ABSTRACT

An experiment was conducted during *kharif* and *rabi* 1999-2000 and 2000-01 on sandy clay loam soil at College Farm, College of Agriculture, Rajendranagar, Hyderabad to study the effect of conjunctive use of inorganic and organic sources of nitrogen and inorganic nitrogen alone on soil fertility in rice-based cropping systems. Significantly lower soil available N, P_2O_5 , K_2O and higher bulk density were observed with application of 100% N through urea to rice compared to 25 % N through FYM+75% N through urea applied to rice. However, application of 25% N through GM along with 100% N through urea proved to be the best with respect to available N, P_2O_5, K_2O and physico-chemical properties after *kharif* and *rabi* crops. Groundnut grown during *rabi* after rice resulted in significantly higher soil available N, P_2O_5, K_2O, lower BD and EC compared to maize, wheat and soybean. Among cropping systems, rice-maize sequence has produced significantly higher RGEY compared to other cropping systems.

Key words : Bulk Density, EC and Urea,Green Manuring,Rice grain equivalent yield, Soil available N, P_2O_5, K_2O.