

Influence of integrated nutrient management and split application of nitrogen on productivity, uptake of *Kharif* sorghum and soil fertility status

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SUMMARY

A field experiment was conducted during *Kharif* season of 2002-2007 at the farm of Sorghum Research Unit Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola to find out the effect of integrated fertilizer management and number of splits on productivity, nutrient uptake of sorghum and soil fertility status under rainfed condition. The significantly highest grain yield (31.25 q ha⁻¹)and fodder yield(79.12q/ha) of sorghum(Pooled mean) was obtained with application of 75% RDF (60:30:30 kg NPK ha⁻¹) FYM @ 5 t ha⁻¹and use of *Azospirllum* and PSB and the 60 kg nitrogen through urea(T_4) was applied in three split doses *viz.*, 20 N at 10 DAS, 20 kg N at 30 DAS and 20 kg N at 45 DAS. This treatment also increased total uptake of N (92.11 kg/ha), P (22.85 kg/ha) and K (106.50 kg/ha). This treatment also improved soil fertility status with the increased OC (6.33g/kg), available N(283/ha), available P_2O_5 (25.00kg/ha) and K_2O (424 kg/ha), sustained soil ph (7.56) and EC (0.23 dSm⁻¹) and bulk density (1.28cm³) over all other treatments. Continues use of organic manure along with 75 per cent dose of fertilizer in combination with seed inoculants and application of N in three splits was beneficial in enhancing crop productivity and soil fertility. The, INM with organic manure, inoculants and chemical fertilizer and use of N fertilizer in the splits not only improved the productivity but also sustained the soil fertility.

Key Words : Integrated nutrient management, Number of splits, Yield, Uptake, Soil properties

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