



RESEARCH ARTICLE

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Response of wheat (*Triticum aestivum* L.) to integrated nitrogen management and their residual effect on succeeding forage cowpea (*Vigna unguiculata* L.)

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ABSTRACT : Field experiment was conducted at B. A. College of Agriculture, Anand (Gujarat) during *Rabi* season of 2012-13 and 2013-14 to evaluate Response of wheat (*Triticum aestivum* L.) to integrated nitrogen management and their residual effect on succeeding forage cowpea (*Vigna unguiculata* L.). Seven nitrogen management treatments through chemical fertilizer and manures and three levels of bio-fertilizer inoculation were replicated three times. Result of the experiment revealed that 75% RDN + 25% RDN from FYM when applied in the wheat it produced higher growth, yield attributing characters, grain yield (3716 kg ha⁻¹) and net returns (Rs. 29304 ha⁻¹) while, application of 100% RDN (120 kg N) produced higher straw yield (7771 kg ha⁻¹) of wheat. The seed inoculation with *Azotobacter chroococum* and *Azospirillum lipoferum* maximize the growth, yield attributing characters, yields of wheat (3328 kg ha⁻¹) and secured higher net return (Rs. 21932 ha⁻¹). However, green fodder (275 q ha⁻¹), dry matter yield of succeeding forage cowpea (66 q ha⁻¹) were significantly influenced by residual effect of treatment 25% RDN + 25% from FYM + 25% from VC + 25% from CC. *Azotobacter* + *Azospirillum* inoculation treatment were maximize green fodder 250 and dry fodder yield 60 q ha⁻¹ of wheat-forage cowpea sequence in sandy loam soils under middle Gujarat agro-climatic conditions.

KEY WORDS : Wheat, Forage cowpea, INM, Biofertilizer inoculation, Residual effect

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