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RESEARCH ARTICLE :

Production potential of maize as influenced by crop residue incorporation and nitrogen levels in legume-cereal sequence

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SUMMARY : Field experiments were conducted during 2011-12 and 2012-13 at Agricultural College, Aswaraopet with an objective to find the influence of *Kharif* legume, residue management practices and nitrogen levels on the performance of succeeding maize. The treatments consists of three legume crops, *viz.*, cowpea, fieldbean and greengram as *Kharif* legume crops, two residue management practices *viz.*, residue removal (I_0), Residue incorporation (I_1) as sub plotsand four nitrogen levels (75,150,225 and 300 kg ha^{-1}) as sub-sub plot plots allocated to maize. The growth, yield and yield attributing characters like drymatter accumulation, kernel rows per cob, number of kernels per cob and yield were significantly influenced by *Kharif* legume crops, residue management practices and nitrogen levels. The highest drymatter accumulation of maize was observed when cow pea was taken as a preceding crop to maize followed by field bean and greengram. Incorporation of residues of previous legumes was found to increase the yield of succeeding maize byseven per cent over the residue removal. Application of nitrogen @ 300 kg ha^{-1} was found significantly superior to 75 and 150 kg N ha^{-1} and comparable with 225 kg N ha^{-1}. Incorporation of previous crop residues in conjunction with 300 kg N ha^{-1} may be adopted to enhance the productivity of maize in legume – maize sequence.

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