



Evaluation of chickpea varieties under compartmental bunding in rainfed situation

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Received: 30-03-2015

Accepted: 19-12-2015

DOI:10.18805/lr.v0iOF.9379

ABSTRACT

Compartmental bunding (CB) and improved chickpea varieties were evaluated in ten farmers' fields during rainy-winter (*khariif-rabi*) seasons of 2012-13 in Vertisols at Bellary, India. Adopting improved chickpea varieties of BGD103 and JG11 during winter season increased the grain yields from 12.5 to 15.9%, respectively over locally cultivated A1 variety. The CB that was laid out during July (rainy season) conserved rainwater *in-situ* and further increased the grain yield of chickpea up to 36.7% in BGD103 and 43.9% in JG11. The increase in grain yield from 24.2% (JG11) to 27.8% (BGD103) indicates that CB is effective for *in-situ* rainwater conservation and improving profile soil moisture in Vertisols. However technology gap during study period was higher compared to extension gap and it was attributed to drought situation with only 81.2% of mean annual rainfall. Technology index was higher in this study and varied from 48.3% (Cultivation of BGD103 variety with CB) to 60.6% (Cultivation of JG11 variety without CB) indicating that technology index can be reduced and chickpea yields can be increased and sustained with adoption of improved chickpea production technologies including *in-situ* rainwater conservation practices at farmers fields. Correlation studies also indicate that grain weight, stover weight and total dry matter production per plant ultimately determine the chickpea grain and stover yields in the Vertisols of Bellary region during winter season. Higher gross and net returns with greater B:C ratio was observed with layout of farmers fields with CB and cultivation of JG11 variety.

Key words: Chickpea, Compartmental bunding, Varieties, Vertisols, Winter season.