

Entry No. IRRC-0119

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Water management
Keyword 2	: Sustainable management practices
Keyword 3	:
Title of Entry	: TRADE-OFF IN TILLAGE, ESTABLISHMENT METHODS AND WATER MANAGEMENT PRACTICES ON PERFORMANCE OF RICE (<i>Oryza sativa</i> L.)
Presenting author	: Dr B. K. Desai
Presenting author email	: bkdesai6263@rediffmail.com
Co author 1	: Sudhir Yadav
Co author 2	: Satyanarayanrao
Affiliation presenting author	: Professor and University Head, Department of Agronomy
Affiliation 1	:
Affiliation 2	:
Select only one type of presentation	: 3-5 minute flash talk
Abstract	: Direct seeding rice has been proposed as one means of achieving sustainable management. Field study was conducted for three seasons on a clay loam soil in Gangavathi, India, during monsoon and post monsoon (2015-16). The design used was Split-split plot, tillage treatments were Dry (No puddling) and wet tillage (puddling) in main plot, establishment methods were Direct seeding (DSR, WSR) and Transplanting (NPTR, PTR) in sub plots, Irrigation treatments were based on soil water tension (SWT) ranging from continuous flooding/saturation (daily irrigation) to alternate wetting and drying (AWD) with irrigation thresholds of

10 and 40 kPa at 18-20cm soil depth in sub-sub plots. Pooled results indicated that with methods of establishment practices, direct seeding crop matures earlier in 115 days in comparison with transplanted delayed crop maturity by 13 d. direct seeding was more affected than transplanting and more so in the drier year. Crop performance in terms of tiller density, leaf area index and growth rate and yield components were also similar in both establishment methods when irrigation was scheduled daily or at 10 kPa, but crop growth and yield parameters were significantly lower at 40 kPa in both direct seeding and transplanting methods. In each season, yield of direct seeding and transplanting were similar when irrigation was scheduled daily or at 10 kPa. Yields of both direct seeding and transplanting declined under higher water deficit stress (40 kPa irrigation threshold), but more so in direct seeding, and more so in drier year. There was a very large and significant decline in irrigation water input with irrigation at 10 kPa compared to daily irrigation in both establishment methods, but only a very small decline in irrigation amount when the threshold was increased from 10 to 40 kPa. (32% water saving in direct seeding compared to transplanting). The results suggest the feasibility of reducing irrigation amount while maintaining yield by replacing transplanting with DSR with AWD during wet season and WSR with AWD during dry season, than 10 kPa at 20cm depth, but that threshold needs to be tested over wider range of site conditions and varieties.

[Read Less»](#)

Uploaded Files »

No files found.