

SRI- as sustainable intensification of rice production system for enhancing the water productivity

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Every 1^o C rise in mean temperature, there is a corresponding 7% decline in rice yield and climate change induced higher temperatures will increase crops' water requirements (IWMI, 2007). With this background experiments were conducted at different irrigated rice sites in India and in sandy clay loam soil at the Directorate of Rice Research farm during 2004-10 to assess the potential of System of Rice Intensification (SRI) in comparison to transplanting (TP) under flooded condition. SRI performed well at majority of the locations tested and recorded higher grain yield ranging from 6 to 65% over transplanting under flooded situation. SRI performed consistently with reduced inputs such as less seed, less water. Even though SRI resulted in higher productivity, the nutrient uptake was similar with marginally higher nutrient use efficiency (8, 8 and 12 % of N, P and K) without depleting the available nutrients compared to TP during the initial four seasons. Long term experiments, clearly indicated that grain yield was significantly higher in SRI-organic + inorganic (12-23% and 4-35% in Kharif and Rabi seasons, respectively) while in the SRI-organic, the yield was found higher (4-34%) only in the Rabi seasons over best management practice (BMP). An average of 31% and 37% of irrigation water saved during Kharif and Rabi seasons, respectively in both SRI method of rice cultivation over BMP. With SRI method, using less water for rice production can free up water for other crops, promote crop diversification and for other sectors and mitigates the stress of water depletion in the coming years.

Biography

R.Mahender Kumar has completed his Ph.D at the age of 26 years from Acharya NG Ranga Agriculture University in the year 1990. At present he is the head of the Department of Agronomy and Principal Investigator of the Agronomy, All India Coordinated Rice Improvement Program, AICRIP-Directorate of Rice Research, Rajendranagar, a premier ICAR organization. He has published more than 50 papers in reputed journals, and presented more than 80 papers in National and International symposia and conferences, guided 5 MSc and Phd students of ANGRAU and serving as Councillor- South Zone for Oryza International Rice magazine, CRRI, Cuttack for the past 5 years. He has expertise in System of Rice Cultivation and handling the SRI Project funded by Ministry of Water Resources, New Delhi.

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