

Category	: International Rice Research Conference
Select Theme	: Disruptive technologies and innovations
Endorsement email	:
Keyword 1	: Knowledge intensive agriculture
Keyword 2	: Precision agriculture
Keyword 3	:
Title of Entry	: Effect of irrigation scheduling and N application on yield, water and N use efficiency of direct-seeded rice
Presenting author	: Anita Kumawat
Presenting author email	: akumawat333@gmail.com
Co author 1	: Seema Sepat
Co author 2	: Dinesh Kumar
Affiliation presenting author	: Student
Affiliation 1	: Scientist
Affiliation 2	: Principal scientist
Select only one type of presentation	: 3-5 minute flash talk
Abstract	: Direct-seeded rice (DSR) is one of the resource-conservation technologies which is sown under aerobic environment. DSR could be a best alternative to TPR in terms of saving of irrigation water, labour and energy without any significant yield reduction. Likewise, nitrogen-use efficiency (NUE) in rice is very low ~33%, as applied N is lost from the soil-plant system via denitrification, leaching, surface runoff and volatilization. The field experiment was laid out in split plot design with 12 treatments combination of irrigation scheduling (0 kPa; 10 kPa, 20 kPa and 40 kPa maintained between tillering to flowering stages) in main plot and N application of 120 kg ha ⁻¹ as (control (N ₀), ½ RDN basal+ ¼ at 2 week+ ¼ at 5 week and ¼ RDN basal+ ¼ at 2 week+ ¼ at 5 week+ ¼ at 9 week after sowing) in sub plot with three replications. The soil of experimental site was clay loam having organic C (0.38%), available N (240 kg/ha), available P (11 kg/ha) and K (172.2 kg/ha) and pH 7.6. The highest grain yield was observed at 0 kPa followed by 10 kPa and N application of ¼ RDN basal+ ¼ at 2 week+ ¼ at 5 week+ ¼ at 9 week followed by ½ RDN basal+ ¼ at 2 week+ ¼ at 5 week. Thereafter at higher threshold i.e. 20 kPa and 40 kPa recorded a decline in grain yield. The highest WUE was recorded with 10 kPa throughout the growing season except 40 kPa during tillering to flowering stage which was at par with 10 kPa. Likewise, the split application of N as ¼ basal+ ¼ at 2 week+ ¼ at 5 week+ ¼ at 9 week gave the highest N uptake and N use efficiency. The present results conclude that alternative irrigation threshold of 0 kPa could be 10 kPa without any reduction in grain yield of DSR. Likewise, split application of recommended dose of N as ¼ basal + ¼ at 2 week + ¼ at 5 week + ¼ at 9 week gave the highest grain yield, water and NUE in DSR.

Uploaded Files »

No files found.