

TECHNOLOGY BRIEF

Drip-irrigation has been found as a potential water-saving technique producing higher yields in rice-based cropping systems. Drip irrigation (in-line system) with 0.4 m emitter spacing and 2.0 litre per hour emitter discharge is laid out at 1.0 m lateral-to-lateral distances in rice, capsicum, and baby corn sequence.

The drip irrigation in the rice-capsicum-baby corn cropping system produced 4.63-times higher yield (rice equivalent yield, 48.2 t ha⁻¹) using 59% less water (7570 m³ ha⁻¹), resulting in 11-times higher water productivity (8.72 kg rice m³ water), 7.63-times higher annual net income (4,35,000 INR ha⁻¹) and 18-times higher economic water productivity (INR 78.7 m³ water) with a benefit-cost ratio of 2.87 compared with the rice-rice cropping system under surface irrigation. Use of drip irrigation in a multi-cropping sequence is recommended for higher water productivity and net profit in rice-based cropping systems in irrigated commands.

IMPACT / UTILITY

The inclusion of capsicum and baby corn after *kharif* rice sequence makes the drip irrigation system economically viable, provides greater income over rice monocrop or rice-rice sequence.

HIGHLIGHTS

- Rice-capsicum-babycorn cropping system gave 4.6 times higher yield compared to rice-rice system.
- It uses 59% less water than surface irrigation.
- B:C ratio: 2.87



Project Details

Evaluating deficit irrigation under drip system for rice based cropping sequence in canal command area (Project Code: DWM/12/158)

Publication

Panigrahi et al. (2021). *Irrigation and Drainage*, <https://doi.org/10.1002/ird.2612>