

Drip Irrigation in Rice-based Cropping Sequence



Rice-capsicum-baby corn cropping sequence under drip irrigation

Developed by _____

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RELEVANCE

- Low water productivity and profits in rice based cropping system under surface irrigation (SI).
- Drip irrigation (DI) and inclusion of high value crops would enhance water productivity (WP) and profit in rice based cropping system.

DESCRIPTION

- DI (in-line system) with 0.4 m emitter spacing, 2.0 litres per hour emitter discharge and 1.0 m lateral-to-lateral distances was installed and operated.
- The crops such as rice, capsicum and baby corn were grown in sequence under DI and compared with rice-rice system under SI.
- Irrigation was scheduled at 100% crop evapotranspiration rate (ET_c) in different crops.

BENEFITS

- DI in rice-capsicum-baby corn cropping sequence produced 4.63 times higher yield (rice equivalent yield, 48.2 t ha^{-1}) using 59% less water ($7570 \text{ m}^3 \text{ ha}^{-1}$) compared with rice-rice system under SI.
- Rice-capsicum-baby corn under DI resulted 11 times higher WP ($8.72 \text{ kg rice m}^{-3} \text{ water}$) than that in rice-rice system under SI.
- The annual return $\text{₹}435000 \text{ ha}^{-1}$ in rice-capsicum-baby corn under DI was 7.63 times higher than that rice-rice system.