

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Water management
Keyword 2	: Nutrient management
Keyword 3	: Precision Agriculture
Title of Entry	: Adaptation of drip irrigation and fertigation for Rice cultivation- a brief of last 10 years field work
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Affiliation 2	: Same as above
Select only one type of presentation	: 15 minute oral presentation

Abstract : ABSTRACT Rice is in ever-increasing demand in India, and in South, South East Asian and African countries. A hectare of rice in conventional puddle cultivation uses 1300-1600 mm per season as per the literature. But in actuality farmers use much more volume (up to 2000 mm) in many delta areas in India. As the demand for water for domestic, municipal, industrial and environmental purposes rises in the future, less water will be available for agriculture. Water availability for agriculture in India which is 83.3% of total water used today, will shrink to 78.2% in 2010, to 71.6% 2025 and to 64.6% in 2050 . We are almost exhausting irrigation water to bring any more land under conventional irrigation. The future of rice production which consumes a lion's share of water (85% in India) used in irrigated agriculture will therefore depend heavily on developing and adopting technologies and practices which will use less water with highest use efficiency. Rice is cultivated usually in a puddled soil condition with large volumes of water and grown in standing water. The water productivity is hardly 0.15 kg/m³ of water which is very low. Way back in 2008 we began introducing drip irrigation (both surface drip and sub surface drip systems) and fertigation for rice cultivation. During the last 10 years, this input management method is tried over several rice ecologies in India and over several rice varieties spanning both Dry seeded (DSR) and Transplanted rice (TPR) growing systems (sole rice or rotation with other crops). Under drip –fertigation , the water productivity rose to 0.46 to 0.67 kg/m³ across varieties and locations. Rice yields were higher (13-80%) across varieties compared to the yields recorded in the respective conventional methods. Panicle number, grain number and test weights (grain) were found to be superior under water and fertilizer management through drip systems. Similarly, higher N, P and K efficiencies were also recorded under drip –fertigation A standard rice growing package with drip fertigation is made available to farmers. The benefit costs worked out in individual farms ranged from 1.4 to 2.1 across varieties when the seasonal

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