



Invitation

INTERNATIONAL RESEARCH CONFERENCE ON
DRIP FERTIGATION IN RICE

Coimbatore, Tamil Nadu, India,

17 - 19 October, 2013



India's food security depends largely on the irrigated rice fields, which produces 75% of all rice harvested. But rice is a profligate user of water, consuming half of all developed fresh water resources. The increasing scarcity of water threatens the sustainability of the irrigated rice production system and hence the food security and livelihood of rice producers and consumers.

Traditionally rice cultivation in India involves transplanting of seedlings into puddled fields that is kept continuously flooded with 5 – 10 cm of water throughout the growing season. Unproductive water losses in the form of seepage & percolation from flooded rice fields are very high accounting for 50 to 60% of the total water input to the field. Irrigated rice with continuous flooding results in low water use efficiency as it consumes 3000–5000 liters of water to produce 1 kg of unprocessed rice. The traditional rice production system not only leads to wastage of water but also causes environmental degradation and reduces fertilizer use efficiency. Therefore, every drop of water received at the farmer's field by way of rainfall, canal irrigation or pumped from aquifers, is valuable and needs to be used effectively.

A fundamentally different approach to reduce water inputs in rice is to grow the crop like an irrigated-dry crop, such as wheat or corn using modern irrigation technologies such as drip irrigation. Unlike lowland rice, drip irrigated rice crop is grown in non-puddled, non-saturated aerobic soil with an optimally balanced soil-water-air conditions in the rhizosphere, but with the use of high yielding new varieties well-adapted to aerobic conditions and responsive to external inputs such as assured supplementary irrigation and fertilizers, and aiming at high yields. Irrigation scheduling is ET-based with water applied equivalent to replenish the soil water content in the root zone back to the field

capacity during each irrigation event after it has reached a certain lower permissible threshold. Thus the field water supply matches the evapotranspiration requirements of the crop (plus any application inefficiency losses). Field experiments indicated that the seasonal water requirement ha^{-1} of low land rice and drip irrigated aerobic rice was 16700 m^3 and $7716 \text{ m}^3 \text{ ha}^{-1}$, respectively with a yield potential of 5 to 7 tons ha^{-1} . Potential water savings under drip irrigated rice (surface and subsurface drip) were primarily due to irrigation of smaller portion of the soil volume by providing water to match crop requirements, increased irrigation water application efficiency, no puddling and nursery raising, no runoff, negligible seepage and percolation losses, and generally keeping the soil drier, reducing soil evaporation and increasing the capacity to capture rainfall. Drip irrigation also enables precise delivery of essential plant nutrients (fertigation) in small amounts, frequently (daily or weekly) according crop developmental phases and physiological function. Additional benefits of drip ferti-irrigation include energy & labour savings, no leaching, higher water productivity and nutrient use efficiency etc.

Emission of methane gas in rice eco-system is a major environmental issue today. Stagnation of water and anaerobic decomposition of organic matter are the major factors contributing to methane emission from rice fields. The global annual emission of methane is estimated to be 500 Tg (1 Tg=1 million tonnes) with an apparent net flux of 40 Tg year^{-1} . Continued increase in atmospheric methane concentrations at the current rate of approximately 1.0% per year is likely to contribute more to future climatic change than any other gas except carbon dioxide. Drip irrigated rice cultivation were shown to curb methane production and conserve water without affecting the productivity. Additionally it is expected that fertigation of plant nutrients via drip system in multiple small doses would also bring down nitrate pollution in community water bodies.



“ Drip FERTIGATION in rice ”



Thus, drip irrigated aerobic rice is more than a technological package and represents a paradigm shift in that the way the rice crop production is understood and practiced based on the biological potential. In several countries viz., the USA, Australia, China, Italy, Taiwan etc., including India during the last few seasons many research institutes and universities across the world have started conducting field trials on various aspects of drip ferti-irrigation method to cultivate rice. There seems to be quite a range of experiences among scientists. Regular national dialogues among drip irrigated rice researchers, farmers and civil society will help cross-sharing and learning.

THE MAIN OBJECTIVES ARE:

- To review the current tools and knowledge used to optimize water and nutrient management for drip ferti-irrigated rice from researchers of various countries and across India
- To identify and discuss constraints and opportunities based on practical field experiences for further expansion of drip ferti-irrigated rice
- To deliberate on the policy and institutional interventions for increasing the area under rice cultivation with drip ferti-irrigation technology

This conference is being jointly organised by the Water Technology Centre, Tamil Nadu Agricultural University (TNAU) and Netafim Ltd., and will be held at TNAU, Coimbatore, Tamilnadu, India during 17-19 October, 2013. The University is located in the Maruthamalai main road, which is well connected by air, train and road. The climate during the month of October will be pleasant at Coimbatore. Maximum temperature ranges from 24.6 to 30.5 °C & the minimum temperature from 20.4 to 23.5 °C.



Programme

It is proposed to have invited presentations on field experiences, success stories and panel discussions in the conference. Invited participants from the other South Asian countries such as China, Thailand and Taiwan will also attend and share their experiences and lessons learnt in drip ferti-irrigated rice crop. The presentations shall address various issues covering the present status, progress, research results and current debates of drip adoption in rice and its impact in enhancing water saving, input use efficiency, and production and productivity of rice. Panel discussions will address topics like policy implications of scaling-up drip adoption in rice in different states of India for various rice ecosystems. There will be one day-field visit to drip ferti-irrigated rice fields in Tamilnadu to gain first-hand practical field information.

Venue:
RASI SEEDS CONFERENCE HALL
Tamil Nadu Agricultural University,
Coimbatore, India - 641003.



ORGANIZERS

Dr.B.J.Pandian, Ph.D, Director, WTC, TNAU, Coimbatore

Dr.S.Mohandass, Ph.D, Professor (Crop Physiology), TNAU, Coimbatore

Eli Vered, Chief Agronomist, R&D, Agriculture Division, Netafim, Israel

Dr.CLN.Rao, DGM, Agronomy Divison, Netafim Irrigation India, Vadodara

"Participation in this conference is by invitation only"

For practical information about the conference, please contact:-

Dr. B. J. PANDIAN

Director, Water Technology Centre, Tamil Nadu Agricultural University
Coimbatore 641 003, Tamil Nadu, INDIA.

e-mail : directorwtc@tnau.ac.in

Telephone : +91 - 422-6611278, 6611378

Fax : +91 - 422-6611478

Mobile : +91 94432 86711