

7th Global Summit on

Agriculture & Horticulture

October 17-19, 2016 Kuala Lumpur, Malaysia

Perspective of micro irrigation in future agriculture

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Agricultural sector is the largest consumer of water. The demand for water has also been consistently increasing in non-agriculture sectors including, municipal use and industry etc., and such uses can often be at the cost of agriculture. The dominant method of irrigation practiced in large parts of the country is surface irrigation under which crop utilize only less than one half of the water released and remaining half gets lost in conveyance, application, runoff and evaporation. In order to reach anywhere close to so-called water smart agriculture all these water losses in irrigation need to be minimized. Micro-irrigation offers a scientific alternative for reducing irrigation water losses practically to a zero level. Micro-irrigation conventionally has been considered useful only for a limited number of widely spaced crops. During the last decade micro-irrigation systems have been evolved to efficiently irrigate orchards, vegetables, cereals, pulses and other crops too. A large number of research studies have shown that micro-irrigation can be adopted successfully in most crops including so-called water guzzling crops like sugarcane and rice. Many farmers have validated research findings and have demonstrated that almost all crops can be grown with drip irrigation not only successfully but profitably too. We need to look beyond the mindset of micro-irrigation for widely spaced crops and innovative steps need to be initiated for large scale adoption of micro-irrigation methods for saving water for extending irrigation facility to hitherto un-irrigated fields. Hon'ble Prime Minister of India has launched an ambitious irrigation plan (namely, Prime Minister Krishi Sinchai Yojna, PMKSY) to take irrigation water to each cultivated field. The Indian States like Gujarat, Andhra Pradesh, Tamil Nadu, Maharashtra and Karnataka have evolved several successful models for large scale adoption of micro-irrigation in the past. In recent times, the efforts of State of Karnataka in launching large micro-irrigation projects with thousands of hectare command namely Sehare and Ramthal may provide lead for others to follow. Integration of micro-irrigation with major irrigation projects, particularly in their tail end reaches, are likely to become a reality soon to bring at least 10 percent canal command areas under micro-irrigation as envisaged under PMKSY. Integration of micro-irrigation with watershed projects particularly for utilization of harvested water as aimed under PMKSY too are likely to result in efficient utilization of available water resources in agriculture with significant savings of water for extending the irrigation facilities to hitherto un-irrigated areas. India has already achieved a distinction of having the largest area under micro-irrigation. India already stands first in area coverage under micro-irrigation (exceeding 8 Mha) and is likely to surge ahead in its adoption in future in view of the increasing food demand and shrinking land and water resources availability for agriculture. The article presents the development and adoption of micro irrigation in India and its likely role in future agriculture.

Biography

T B S Rajput earned a Doctorate degree in Soil and Water Conservation Engineering (IARI, New Delhi-1985) after graduating in Agricultural Engineering from GBPUAT Pantnagar in 1973. He has done his Post-graduation in Soil and Water Conservation Engineering from IIT Kharagpur-1976 and has over 40 years of experience in Research, Post-graduate teaching and training of professionals at different levels in the field of Agricultural Water Management. He has joined the Water Technology Centre as a Scientist through the first batch of ARS in 1976. Currently, he is working as an Emeritus Scientist at the Centre.

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