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Efficient irrigation management for sustainability of agriculture and environment

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Irrigated agriculture is playing a major role in enhancing food and livelihood security of the country. Issues related to water resources are directly linked to cropping pattern of a particular area. The crop water requirements help us in arriving at the volume of water utilised for irrigation purposes and defining deficiency or surplus of storage of surface water as well as ground water recharged. It also indicates the nature of interventions required for bringing about water use efficiency. Now, conveyance of water through underground pipelines instead of open water channel has also been recommended for undulating land and highly permeable soils. In view of the urgent need to maximize use of the available resources, it is imperative to effect utmost economy in water use by adopting efficient and advanced methods of irrigation. Pressurized irrigation methods such as through Sprinkler, Drip, Micro Sprinklers and Rainguns, which is run by solar energy, offer possibilities of achieving higher efficiencies of water use through controlled water distribution. In pressurized irrigation methods, water is applied more frequently, which in turn reduces the moisture stress to the plants and thus enhances the crop growth. In micro irrigation, the water is applied at a very low rate almost matching the evapo-transpiration requirement resulting into significant water savings. The main pathways for enhancing Water use efficiency in irrigated agriculture are to increase the output per unit of water, reduce losses of water to unusable sinks, reduce water degradation, and reallocate water to higher priority uses.

Keywords: Water use efficiency, Water conservation, Irrigation methods, Crop production

Biography

I have completed M.Sc Soil Science in the year 2012 at the age of 25 years from Punjab Agricultural University, Ludhiana, PUNJAB. Worked as Soil Conservation Officer at Department of Soil and Water Conservation, PUNJAB for 7 year and 7 months. I have presented a poster in International Conference on " Sustainable Agriculture for Food and Livelihood Security". And Publish a Abstract in 77th Annual Convention of Indian Society of Soil Science. I have published 4 research papers in reputed journals.

At present, I am working as Sub-Divisional Soil Conservation Officer, in the Department of Soil and Water Conservation, Punjab, INDIA. Brief Duties concerned to my work is to implement various techniques for Soil and Water Conservation and Watershed Management to enhance Sustainability of Agriculture and Natural resources (i.e Soil and Water) and to increase Soil Productivity, Soil fertility and Water Use Efficiency (Canal water, Pond water and Ground water). Different irrigation methods which reduce the seepage losses, Evapo-transpiration losses and conveyance losses and increase the area under crop.

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