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Micro irrigation-An effective tool to fight against water scarcity and poverty; a thought behind agriculture engineers

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New irrigation technologies are playing a central role in agricultural water use. Water, the natural resource in farming, is tending to become increasingly scarce and costlier. The scarcity of water is the main limiting factor in getting a good yield from the crops. Therefore, the effort now needed is to harness the available quantities and put them to efficient use to realize higher productivity per unit of water. Among the latest water management technologies, drip irrigation is one such system receiving acceptance, particularly in areas of water scarcity, for row crops such as sugarcane, vegetables, cabbage, cassava, mulberry, and potato. Drip irrigation is an effective tool for conserving water resources and studies have revealed significant water saving ranging between 40% and 70% by drip irrigation compared with surface irrigation. Fertigation is a new concept recently practiced in several parts of the world in horticultural crops in which water soluble fertilizers are applied directly to the root zone of the plants through drop irrigation system. Drip fertigation increases the efficiency of the applied fertilizers thus economizing the quantity of fertilizers and water, and cost of labour and energy resulting in reduced cost of cultivation. Fertigation saves nearly 30 to 40% of the fertilisers compared to other methods of fertiliser application. Fertigation allows precise timing and uniform distribution of applied nutrients to meet the crop nutrient demand with ensures substantial saving in fertilizer usage. Drip irrigation and fertigation system are being adopted due to their numerous advantages over traditional methods of irrigation and fertilizer application. Global demand for food is likely to double in the next 25 to 30 years mainly due to population growth and change of diet. Many countries are endeavoring to achieve food security at a national level. A major portion of this increased food demand would be fulfilled from irrigated agriculture. The land and water availability for cultivation is continuously decreasing all over the world. The expansion of irrigated agriculture is ironically limited by freshwater availability particularly in arid and semi-arid regions. Micro-irrigation has shown a promise to tackle such a complex and multivariable situation, by allowing higher water use efficiency, minimizing non-beneficial losses of water, reduced energy requirements for operation and improve agro-technical practices.

Biography

K A Basamma is studying II year M Tech in Soil and Water Engineering, AEC & RI, TNAU Coimbatore. As a part of her degree program, she is doing her research entitled “Effect of drip fertigation and mulching on tomato crop” under the guidance of Dr. K. Shanmugasundarm (Professor, Dept. of SWCE).

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