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RESEARCH NOTE

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Surve of automation irrigation systems in Maharashtra

V.T. BOMBALE, P.G. POPALE , A.P. MAGAR AND M.L. CHAVAN

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Water is prime source required for all biological activities of the plant and is most valuable input particularly in irrigated agriculture. Water saving and efficient irrigation methods have great scope in irrigated agriculture with help of automation. Comparative study between micro-irrigation and traditional irrigation methods had been conducted several times but once the 'automation irrigation system's is installed farmer seldom get chance in production. But he does not get any feedback regarding its operation and maintenance from the manufacturer. In order to asses the actual situation in regards with the 'automation irrigation system's and its adoption on the field of farmer and Govt. Hence it is necessary to survey of 'automation irrigation system's.

There are three basic automation systems namely time based system, volume based system and sensor based system.

Time based system :

In time based system, time is the basis of irrigation. Time of operation is calculated according to volume of water required and the average flow rate of water. The duration of individual valves has to be fed in the controller along with system start time; also the controller clock is to be set with the current day and time. As the clock of the controller knocks the start time of programmed, it starts sending signals to the first automatic valve in the programme sequence; the pump also starts up at the same time. As soon as duration of first valve is over the controller either stops or switches ON to next valve. When the operation of last valve is over, controller stops sending signals to valves and pump. The same process is repeated at next run time.

Volume based system :

In volume based system, the preset amount of water can be applied in the field segments by using automatic volume controlled metering valves. Automation using volume based systems are of two types. In first type of system, automatic metering valve with pulse output provides one pulse after completing one dial of the automatic metering valve. Thus, by counting the number of pulses received by the controller, it can count the volume of water passed through. After providing required volume of water through first valve, it closes down and controller switches on the next valve in the sequence. In second type of system, no controller is required. Automatic metering valves are positioned near each field segment. All automatic metering valves are interconnected in series with the help of control tube. For automatic closing and opening of the metering valves with the help of water pressure signal, components like t-connector, shuttle valve and a three way relay (called Shastomit) are also installed along the circuit. During sequential operation only one automatic metering valve remains open. The next valve

Address for correspondence :
V.T.BOMBALE, Department of Soil and Water Conservation Engineering Adity College of Agricultural Engineering and Technology, BEED, (M.S.) INDIA
E.mail : bombale4@gmail.com

Authors' affiliations :
P.G. POPALE AND M.L.CHAVAN, Department of Irrigation and Drainage Engineering, Adity College of Agricultural Engineering and Technology, BEED (M.S.) INDIA
E.mail : pramod.popale@gmail.com

A.P. MAGAR, Department of farm pawar and Machinery, Adity College of Agricultural Engineering and Technology, BEED (M.S.) INDIA
E.mail : ajitmagar@indiatimes.com