EVALUATION OF GRAVITY FED DRIP IRRIGATION SYSTEM IN DERA ISMAIL KHAN

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Abstract

Gravity fed drip irrigation systems are a low cost and water use efficient technologies. Such systems run on gravity and do not require any electricity, they also require minimum manual inputs and maintenance. They can be used as a useful means of irrigation for vegetable gardens and orchards in dryland environments where rainfall is low and erratic. In this study, four different designs of gravity operated drip irrigation systems were evaluated on farmer field in Dera Ismail Khan District. The systems vary in design, area of irrigation and crop. The system S1 and S2 are basically drip bucket irrigation systems, whereby buckets elevated at 1 to 1.5 meters, serve as water storage, and drip lines are attached to the base of the buckets for irrigation of the garden. Systems S3 consists of a drum as a source of water elevated at exactly 1 meter height. The main, submain and the laterals are then used to irrigate the field. System S4 has a water storage tank built at the highest point in a field of 2 acres, the main, submain and laterals are then used to irrigate the 2 acres orchard downslope. During the trial CV, EU, DU and CUC of the systems were evaluated using standard methods. It was found that all the systems operated with good efficiency and distribution uniformity regardless of the size of the plot and type of the system.