

WATER USE EFFICIENCY AND SAVING THROUGH PITCHER AND POLYETHYLENE BAG IRRIGATION

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ABSTRACT

A field study was carried out at the Muhammad Khaskheli Farm, located, Taluka Thanu Bula Khan, District Jamshoro during the year 2008. The picture polyethylene bag and furrow irrigation methods were compared on the basis of water uses efficiency, yield, and water saving. The experimental setup for three irrigation methods was established. Irrigation to furrows was supplied through a watercourse and quantity of water was measured through a cutthroat e. While a measured quantity of water to the pitcher and polyethylene bag methods was manually supplied.

The results indicated that the water holding capacity of the pitchers ranged between 7.9 to 9.0 liters, whereas the seepage rate was between 1.1 and 1.5 lit/day. The wetting front vertically moved to a maximum of 13.4 cm depth and it reached to a distance of 22.6 cm laterally.

The results further suggest that the highest yield and WUEs water achieved under pitcher irrigation method as compared to furrow and polyethylene bag methods. The pitcher method had the WUE. It was higher by 90% and 40% as compared to polyethylene and furrow irrigation methods, respectively. An overall yield increase under pitcher over furrow was about 58% while, it was 18% over polyethylene bag method. The yield increase under polyethylene bag over furrow irrigation was calculated to about 49%.

Pitcher irrigation method saved water by about 75.4% as compared to furrow irrigation method while it saved water by about 26.5% as compared to polyethylene bag method. Similarly, the polyethylene bag, saved 66.5% compared to furrow method. Thus, the highest water saving was achieved under pitcher irrigation method as compared to both under furrow and polyethylene bag irrigation methods.

Keywords: Pitcher, polyethylene, furrow, irrigation systems, water use efficiency, water saving.