

Influence of organic mulches and irrigation levels on growth, yield and water use efficiency of pomegranate (*Punica granatum* L.)

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ABSTRACT

A field experiment was carried out at Solapur, Maharashtra during 2015-2017 on 4 and 5 year old plants of pomegranate having treatments composing of 4 organic mulches (*i.e.* No mulch, wheat straw, sugarcane baggass and safflower straw) and 5 different irrigation levels (*i.e.* 0.30 to 0.80 * ET_r) through drip irrigation under split plot design. Amount of applied irrigation water for different treatments varied from 2597 to 9218 Liters per season per tree. The results indicated that organic mulches and irrigation level had significant effect on leaf area index, nos. of fruits, yield and water use efficiency. The highest water use efficiency was estimated with sugarcane baggass while the lowest WUE was estimated in no mulch. The mean maximum plant height, number of fruits, weight, growth, LAI, yield and WUE was evaluated at 0.50*ET_r and 0.60*ET_r irrigation level and sugarcane baggass mulch is the best for 4 and 5 old age pomegranate tree.

Keywords: Pomegranate, phenophase, reference crop evapotranspiration(ET_r), crop coefficient(K_c), organic mulches and water use efficiency (WUE).