

Effect of Irrigation Methods and Fertigation on Yield and Quality of Tomato

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ABSTRACT

Field experiments was conducted during *rabi* seasons of 2007 and 2008 to study the effect of methods of irrigation and fertilizer application on the dry matter, 100 fruit weight, fruit yield, quality and economics in tomato in *Alfisols* of Hyderabad. The experiments was conducted in R.B.D with treatment combination involving three methods of irrigation and fertigation application replicated seven times. Treatments were ridge and furrow method of irrigation with soil application of recommended dose of fertilizers (T_1), drip irrigation at three days interval with soil application of recommended dose of fertilizers (T_2) and drip irrigation at three days interval with fertigation of recommended dose of N and K at 12 days interval (T_3). The pooled results revealed that drip irrigation with fertigation of recommended dose of N and K at 12 days interval (T_3) gave significantly higher dry matter production (5.9 t ha^{-1}), 100 fruit weight (8.4 kg), fruit yield (33.3 t ha^{-1}), ascorbic acid ($19.3 \text{ mg } 100 \text{ g}^{-1}$), reducing sugars (2.7%), non-reducing sugars (1.35%), total soluble solids (4.9%), lycopene ($30 \text{ mg } 100 \text{ g}^{-1}$), acidity (0.61%) and pulp ratio (0.94) followed by drip irrigation with soil application of RDF and ridge and furrow method of irrigation with soil application of RDF in that order. Maximum net returns (Rs. 81,645 ha^{-1}) and B: C ratio (2.46) was recorded in drip irrigation with fertigation of recommended dose of N and K and least under ridge and furrow method of irrigation with soil application of RDF (Rs. 48, 235 ha^{-1} and 1.58 respectively).

Key words : Fertigation, Irrigation methods, Tomato, Yield and quality parameters.