



Effect of bio-K and inorganic fertilizers on physical and quality parameters of tomato (*Lycopersicon esculantum* Mill) fruits

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ABSTRACT

The present study was conducted at department of Horticulture, Marathwada Agricultural University Parbhani (M.S.) during the year 2004-05. Treatment of Bio-K 1ml/l of water + RDF of NP and 50% of K gave best results in terms of shape index of fruit, juice percentage, peel percentage, seed weight per fruit, total soluble solid and ascorbic acid content of fruit as compared to control and rest of the treatments under study.

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Key words : Bio-K, RDF, Tomato

Among the different vegetables, tomato is one of the most important vegetable crop which belongs to genus *Lycopersicon*. The role of inorganic fertilizers in increasing growth and yield of plant is well known. Biofertilizers not only play an important role in maintaining good health of plant, but also served as natural source of plant nutrient to increase productivity. Great deal of work has been carried out recently to increase growth and yield of tomato by using inorganic and biofertilizers, but their effect on quality attributes has not been studied especially under mild subtropical region of Marathwada. Hence, the present investigation was carried out to study the effect of inorganic fertilizers and biofertilizers (Bio-K) on physical and quality parameters of tomato crop in Marathwada region.

MATERIALS AND METHODS

The present experiment was carried out in Randomized Block Design. There were thirteen treatments and three replications. The treatment details are given below : T₁ - Bio-K 1ml/l of water + RDF of NP and K, T₂ - Bio-K 1ml/l of water + RDF of NP and 75% of K, T₃ - Bio-K 1ml/l of water + RDF of NP and 50% of K, T₄ - Bio-K 1ml/l of water + RDF of NP and 25% of K, T₅ - Bio-K 2ml/l of water + RDF of NP and K, T₆ - Bio-K 1ml/l of water + RDF of NP and 75% of K, T₇ - Bio-K 2ml/l of water + RDF of NP and 50% of K, T₈ -

Bio-K 2ml/l of water + RDF of NP and 25% of K, T₉ - Bio-K 3ml/lit. of water + RDF of NP and K, T₁₀ - Bio-K 3ml/l of water + RDF of NP and 75% of K, T₁₁ - Bio-K 3ml/l of water + RDF of NP and 50% of K, T₁₂ - Bio-K 3ml/l of water + RDF of NP and 25% of K and T₁₃ - Recommended dose of NP and K

The plot size was 3 x 2.4 m and spacing was 60 x 60 cm. The variety used was 'Parbhani Yashashri'. The recommended dose of fertilizer 100:50:50 kg NPK ha⁻¹ was considered as RDF. In this for NPK, the urea, single super phosphate and murate of potash, respectively were used. Potassium was used at four different levels *i.e.* at 100, 75, 50 and 25 per cent of recommended dose and applied one day before transplanting with half dose of nitrogen and full dose of phosphorus. Amrut-Akash (Bio-K) a homeoptic formulation by using *Adathoda vasakas* 1ml (0.01%), *officinalis* 1ml (0.01%), *Bnbebin ribens* 1ml (0.01%) and aqua solvenent (99.97%). Bio-K was sprayed at three levels *i.e.* 1ml/l of water, 2ml/l of water and 3ml/lit of water. It was applied at 15, 30 and 45 DAT.

For taking quality parameter observation, fifteen fruits were selected after 90 days after transplanting. Juice percentage was calculated by extracting fruit juice from fruit, peel was removed from fruit by giving blanching treatment to fruit. Total soluble solids was calculated by hand refractometer and ascorbic acid by 2,6-Dichlorophend indophend visual titration method. The