



Research Paper

Article history :

Received : 21.09.2012

Revised : 17.05.2013

Accepted : 29.05.2013

To study the effect of plant growth regulators on quality traits of pomegranate cv. SINDURI

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ABSTRACT : Studies on the effect of plant growth substances on quality components were carried out on pomegranate. Total 15 treatments were used, out of which only ethrel 200 ppm treatment was found effective on all the five quality traits. Application of ethrel 200 ppm has improved the TSS (17.18 %), reducing sugar (10.83 %), non-reducing sugar (1.68 %), total sugar (12.50 %), and ascorbic acid content (14.85%).

KEY WORDS : Pomegranate, PGRs, Quality traits

HOW TO CITE THIS ARTICLE : Goswami, J.D., Patel, N.M., Bhadauria, H.S. and Wankhade, V.R. (2013). To study the effect of plant growth regulators on quality traits of pomegranate (*Punica granatum* L.) cv. SINDURI, *Asian J. Hort.*, 8(1) : 361-363.

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The pomegranate (*Punica granatum* L.) is sub tropical fruit tree, growing best in semi-arid climate, where cool winter and hot summer prevails. Pomegranate is an important tropical fruit belongs to family Punicaceae. It is originated from Persia, Afghanistan and Baluchistan and it found well established in the western region of India. Dried seeds with pulp are called Anar-dana which is important condiment. The importance of synthetic plant growth regulators in achieving higher yield and better quality of horticultural crop has been well recognized in recent time. Plant growth regulators have given encouraging results in case of pomegranate fruit crop.

RESEARCH METHODS

The experiment was conducted in pomegranate orchard planted at 3 x 3 m distance in Department of Horticulture, C. P. College of Agriculture, S.D. Agricultural University, Sardarkrushinagar. The experimental trees were four years old. Total 15 different treatments of 2,4-D, NAA, GA₃ and etherel were used in pomegranate orchard with three replications and

Randomized Block Design was used as an experimental design. Two sprays of 2,4-D, NAA, GA₃ and etherel *i.e.* 1st spray of 2,4-D, NAA, GA₃ and etherel treatments just after pruning in 2nd fortnight of September and 2nd spray of GA₃ (25 ppm) was done at the time of minimum 20 number of fruit sets on the plant were used.

RESEARCH FINDINGS AND DISCUSSION

The application of ethrel 200 ppm significantly increased total sugar, reducing sugar, non-reducing sugar and TSS in pomegranate (Table 1). The increase in total soluble solids and sugar percentage may be caused due to starch hydrolysis and early maturation of fruits. The present findings are in conformity with those reported by Sandhu *et al.* (1989) in ber. The data revealed that the effect of different levels of plant growth regulators on ascorbic acid content of pomegranate fruit was found to be non-significant.

In present investigation, both concentrations of NAA increased the fruit quality *i.e.*, total soluble solids, reducing, non-reducing, total sugars and ascorbic acid contents as