

**Effect of 2,4-d on Fruit Quality of Pomegranate
(*Punica granatum* L.) cv. Ganesh at Different Stages of
Fruit Growth**

K. Venkatesan¹ and M. Kader Mohideen²

Horticultural College and Research Institute
Tamil Nadu Agricultural University
Coimbatore-641 003, Tamil Nadu
South India.

Pomegranate (*Punica granatum* L.) is a favourite table fruit of the tropical region, valued very much for its refreshing juice consisting of nutritional and medicinal properties. 'Ganesh', a promising selection from Maharashtra has rapidly gained popularity in Tamil Nadu by virtue of its 'soft seed' nature. An investigation was taken up during 1992-93 at the Horticultural College and Research Institute, Periyakulām of Tamil Nadu Agricultural University, on the effect of five growth regulators viz., 2,4-D, NAA, GA₃, Ethrel and CCC on quality of fruit with reference to different stages of development. Three concentrations in each growth regulator were used with 3 spraying, viz., first at flowering, second at 45 days and third at 90 days after flowering. The fruits were analysed at eight stages of development upto maturity for total soluble solids (TSS), total sugars, reducing sugars, acidity, ascorbic acid and tannin contents.

The TSS increased as maturity advanced, which was similar to the findings of Shulman *et al.* (1984) and Kumar and Purohit (1989). Among the growth regulators, 2,4-D (20 ppm) recorded the highest TSS at maturity followed by NAA (25 ppm). The total and reducing sugar contents were also significantly enhanced by the same treatment followed by 25 ppm.

¹ Present address: Lecturer, Faculty of Agriculture, Annamalai University of Agricultural Sciences, Annamalai Nagar, Chidambaram, South Arcot District, Tamil Nadu.

² Chairman, Advisory Committee and professor of Horticulture, Horticultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore - 641 003, Tamil Nadu State, South India.

Acidity generally declined in fruit with maturity. The highest TSS:acid ratio was recorded with the application of 2,4-D (20 ppm) followed by NAA (20 ppm). This is mainly attributed to rapid reduction in acidity with a higher accumulation of sugars at the advancement of fruit maturity.

Ascorbic acid content was significantly enhanced in 2,4-D treated fruits (20 ppm), which may be attributed to the catalytic conversion of sucrose or hexose sugars (Chinoy, 1968). This conversion process may have been triggered by 2,4-D in the plant system. No clear trend was observed in the tannin content of the peel of pomegranate fruit influenced by different growth regulators. This is in agreement with Khodade *et al.* (1990).

The study revealed that the quality attributes *viz.*, total soluble solids (TSS), total and reducing sugars, TSS:acid ratio and ascorbic content were favourably enhanced by 2,4-D, 20 ppm sprayed at flowering, 45 and 90 d thereafter. All the above attributes except acidity and tannin content increased with maturity of the pomegranate fruit. Acidity and tannin contents declined with fruit maturity.

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