The Asian Journal of Horticulture, 3 (1) : 18-20 (June-2008)

Effect of plant growth substances on fruit size of pomegranate (*Punica granatum* L.) cv. MRIDULA

V.S. SUPE AND S.K. MARBHAL

See end of the article for authors' affiliations

Correspondence to :
V. S. SUPE
Onion and Grape Research Station, Pimpalgaon Baswant, Niphad, NASHIK, (M.S.) INDIA

Accepted : Feb., 2008

ABSTRACT

In pomegranate, the parameters like average weight of fruit, volume of fruit, per cent fruit crop, number of fruits/tree and yield of tree were significantly influenced by the application of plant growth regulators at various intervals. CCC @ 250 ppm applied at 30th, 60th and 90th days after first irrigation resulted in higher yield with maximum number of fruits/tree. The treatment 6-BA @ 10 ppm produced maximum fruit drop when applied at 60th days after first irrigation.

Key words : Pomegranate, CCC, 6-BA, CPPU, Brassinosteroid, Ethrel.

Pomegranate (*Punica granatum* L.) is one of the famous table fruit mainly cultivated in tropical and sub-tropical eco-system. It is shrub commercially grown for its sweet and slight acidic fruit mainly used for dessert purpose (Hays, 1953). In India, the crop is commercially grown in arid and semi arid areas of Maharashtra, Gujrat, Rajastan, Karnataka, Andhra Pradesh and Madhya Pradesh.

Beneficial effect of various plant growth regulators have been reported on many fruit crops and proved beneficial for improving quality and yield. Mostly the plant growth substances have been used for various beneficial effects such as promoting root growth, number of flowers, increasing the fruit set, fruit size and quality for inducing early uniform fruit ripening.

The main objectives of present study were to assess the quantitative parameters, stages of application and ultimately the yield influenced by application of various plant growth regulators.

MATERIALS AND METHODS

The field experiment was laid out in Randomized Block Design (RBD) with three replications and fifteen treatments at the Instructional-cum-Research orchard of Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri during the year 2003. The experiment was carried out in *Mrig* bahar Ninety representative uniform Mridula pomegranate plants were selected for the study. The proper bahar treatment *viz*., water stress for two months April and May, ploughing, harrowing, cleaning, training and spraying operations were given to those plants.

The data was recorded on two plants unit per treatment per replication. The five plant growth regulators *viz*., CCC, 6-BA, CPPU, Brassinosteroid and Ethrel at different concentrations were sprayed at three intervals *i.e.* 30th, 60th, 90th day after first irrigation (DAFI). The stock solution for each plant growth regulator was prepared by dissolving 1 g in 100 ml distilled water and the volume made to 1000ml. Observations on physical and quantitative parameters *viz*., length, diameter and volume of fruit, average weight of fruit, rind thickness, number of arils in 100g, aril percentage, rind percentage per cent fruit drop, number of fruits/tree and yield/tree(kg) were recorded.

RESULTS AND DISCUSSION

The data in the Table 1 indicates that most of the physical parameters like length of fruit, diameter of fruit, rind thickness, number of arils/100g, aril percentage and rind percentage are not influenced by the various plant growth application. Similar results were obtained by Phad *et al.* (1980) in Daulatabad fig. However, Pawar (2001) reported contradictory results in which application of GA_3 increased the length and diameter of fruit.

Among the physical parameter, the application of plant growth regulators at various intervals significantly influenced the volume of fruit and average weight of fruit. The application of CCC@ 250 ppm at all the intervals recorded maximum volume of fruit followed by 6-BA@ 10 ppm and ethrel 500 ppm at 60th and 90th DAFI. The results are in agreement with the results of Pawar (2001).