

Research Paper

THE ASIAN JOURNAL OF HORTICULTURE

Vol. 6 | Issue 2 | December, 2011 | 474-477



Article history:

Received : 28.09.2011

Revised : 09.11.2011

Accepted : 19.11.2011

Effect of NAA, GA₃, kinetin and ethrel on yield and quality in phalsa (*Grewia sub-inaequalis* DC)

■ ABHIJIT DEBNATH, K. VANAJALATHA¹, UMARFAROOQUE MOMIN² AND MALLIKARJUN REDDY¹

Associated Authors:

¹Department of Horticulture, Central Research Institute for Dryland Agriculture, HYDERABAD (A.P.) INDIA

²College of Horticulture, A.P. Horticultural University, HYDERABAD (A.P.) INDIA

Author for correspondence :

ABHIJIT DEBNATH

Department of Horticulture, Central Research Institute for Dryland Agriculture, HYDERABAD (A.P.) INDIA

Email : abhijit29@hotmail.com

Abstract : A field experiment was carried out during 2009-2010 in Model Orchard at College of Horticulture, Rajendranagar, Hyderabad to assess the influence of NAA 25 and 50 ppm, GA₃ 50 and 100 ppm, kinetin 15 and 50 ppm, ethrel 250 and 500 ppm on yield and quality parameters of phalsa (*Grewia sub-inaequalis* DC)". Among all the treatments, GA₃ 100 ppm was most effective in improving yield per plant (3.05 kg), yield per hectare (7.63 t ha⁻¹) and hundred fruit weight (61.48g). Ethrel 500 ppm recorded maximum total soluble solids content (25.72 %). Maximum reducing sugar (18.91%), TSS to acid ratio (10.98), pulp weight (51.45g), pulp to stone ratio (5.85g) and minimum titratable acidity (2.26 %) and stone weight (8.83g) was recorded with GA₃ 100 ppm. Kinetin 30 ppm recorded maximum shelf life (51.46 hr) of the fruits.

Key words : Phalsa, Plant growth regulators, Yield, Quality, Shelf life

How to cite this article : Debnath, Abhijit, Vanajalatha, K., Momin, Umarfa Rooque and Reddy, Mallikarjun (2011). Effect of NAA, GA₃, kinetin and ethrel on yield and quality in phalsa (*Grewia sub-inaequalis* DC), *Asian J. Hort.*, 6 (2) : 474-477.

Phalsa (*Grewia sub-inaequalis* DC) belongs to the family Tiliaceae is one of the hardy tropical and subtropical fruit plant, withstand drought and grown under adverse climatic conditions. The ripe phalsa fruits are consumed fresh, as desserts or processed into refreshing fruit and soft drinks enjoyed during summer months in India (Salunkhe and Desai, 1984). The fruits are excellent for processing into quality beverages, ready to serve, nectar, syrup and squash.

Application of growth substances *viz.*, auxins and gibberellins has been effective in increasing fruitset and yield in several fruit crops including phalsa (Randhawa *et al.*, 1959). Application of GA₃ results in increased yield and better grade phalsa fruits (Randhawa *et al.*, 1967). Ethrel sprayed at full bloom stage found to be increasing TSS content of the phalsa fruits (Rema and Sharma, 1991) and efficacy of kinetin in increasing shelf life by reducing the physiological loss of weight of fruit crops was shown by various workers (Dedolph *et al.*, 1961; Randhawa *et al.*, 1976).

RESEARCH METHODS

A field experiment was conducted in Model Orchard at College of Horticulture, Rajendranagar, Hyderabad on healthy phalsa bushes during 2009-2010. The experiment was laid out in a Randomized Block Design with nine treatments and replicated thrice. The treatments consisted of two levels each of naphthalene acetic acid 25 and 50 ppm, gibberellic acid 50 and 100 ppm, kinetin 15 and 50 ppm, ethrel 250 and 500 ppm and control. The growth regulators were applied twice *i.e.*, first spray at pre bloom and second spray at post bloom stage.

Data was recorded on fruit weight and yield characters and chemical analysis was done to determine quality parameters of the fruit. The weight of the fruits was recorded in grams taking a random sample of 100 fruits from the harvest of each treated bush using a YAMATO balance. TSS was determined by hand refractometer and acidity was estimated as per the method of Ranganna (1986). Reducing sugars were estimated by Fehling's method using methylene blue as