Research Note

THE ASIAN JOURNAL OF HORTICULTURE
Vol. **6** | Issue 2 | December, 2011 | 538-539

Article history:
Received : 17.08.2011
Revised : 15.09.2011
Accepted : 05.10.2011

Regulation for off season flowering and fruiting habit in mango with paclobutrazol

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Abstract : Field experiment were conducted at Agricultural College and Research Institute, Killikulam, Tamil Nadu Agricultural University to study the influence of Paclobutrazol on 'off' season flowering of Mango and also to standardize the doze and time and application The results suggested a positive effect of treatment T_6 - 3 ml/m diameter applied during May recording highest mean number of inflorescences / tree(28.83), lengthier inflorescence(29.38), maximum number of fruits per tree (33.00 No.) highest yield per plant (9.92 kg) and an average fruit weight of 275.35 grams. Application of paclobutrazol preponed the flower initiation and fruit harvest, thereby inducing production out of season, fetching higher prices and more profitability

Key words : Fruiting habit, Off season, Flowering and fruiting, Mango, Pactabutrazole, PBZ

How to cite this article : Jasmine, A. Jaya, Nainar, P., Kennedy, R. Richard, Paramaguru, P. and Balasubramanyan, S. (2011). Regulation for off season flowering and fruiting habit in mango with paclobutrazol, *Asian J. Hort.*, **6** (2) : 538-539.

Mango (*Mangifera indica.* L.) is an important fruits crop grown for a very long time and cultivation is increasing but in India the productivity is still low and irregular. In Tamil Nadu the productivity is only around 4.3 T/ha (2005-2006). Neelum is one of the popular and regular bearing variety of Tamil Nadu which also bears during the off season in Tirunelveli and Kanyakumari districts of Tamil Nadu thus fetching higher returns to the farmer. Off season flowering is observed during September October months in Tirunelveli and Kanyakumari districts with the fruiting period during January February - a very early start with good demand for the fruits. The flowering process is the critical point for the fruit production. The induction of flowering in mango through chemical substances, such as paclobutrazol, blocks the biosynthesis of gibberellins (GA_1), and reduces the growth of plants thereby leading to blossoming (Rademacher, 1991). Several attempts on flowering induction show significant results in regulating off-season production of mango. The application of paclobutrazol followed by application of a dormancy-breaking substance has forced mango, citrus and mango stein trees to produce off-season flowers and with this technique, mango trees can be forced to flower practically at any time (Poerwanto *et al.*, 2008). Such action can induce off season production of mango for times of the best prices. Hence, a study was conducted to analyse the effect of paclobutrazol (PBZ) in regulation of off-season flowering and to standardize the dose and time of application of paclobutrozol to induce off-season flowering on mango production.

The trial was carried out over four years at Agricultural College and Research Institute, Killikulam, Thoothukudi district, Tamil Nadu during 1999 to 2002 under rainfed condition in the variety Neelum. This zone is characterized by a mean maximum temperature of 35^0C, a mean minimum temperature of 24^0C and annual precipitation of 640 mm. The experimental design used was randomized block with five replicates. Each replicate had five plants. Paclobutrozol was applied as soil drenching. Seven treatments were applied *viz.*, T_1- Control, T_2- Paclobutrazol@3ml/m diameter 120 days before bud break, T_3- Paclobutrazol @ 5ml/m diameter 120 days before bud break, T_4- Paclobutrazol @ 3ml/m diameter 90 days before bud break, T_5- Paclobutrazol @ 5ml/m diameter 90 days before bud break, T_6-