

Studies on the comparative behaviour of different treatments for the control of malformation in mango (*Mangifera indica* L.) blossoms

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ABSTRACT

In order to find out the most effective control measures of malformation, an experiment was carried out for two years, with a view to study the comparative behaviour of different treatments for the control of malformation in Amrapali mango blossoms. Results revealed that of all the treatments applied in the study, exogenous application of NAA 200 ppm in the first fortnight of October (before bud break stage) and deblossoming at bud burst stage was found to be the most effective treatment (-64.63% reduction over control) than NAA application alone without deblossoming, shoot pruning, acaricide application and stalk pruning for reducing the incidence of floral malformation and improving the fruit yield and quality of 'Amrapali' mango under the climatic conditions of Western Uttar Pradesh. The treatments, namely, NAA application alone without deblossoming (-57.91% reduction over control) and pruning of 20 cm shoot bearing malformed panicle in January (-55.10% reduction over control) were the next best ones in suppressing the disorder. The deblossoming alone without NAA application or NAA application alone without deblossoming and shoot pruning treatments did not prove better than deblossoming in combination with NAA in reducing the incidence of malformation. Among the treatments of shoot pruning, moderate pruning of shoot (20 cm) bearing newly emerged malformed panicle at early stage of panicle emergence was found to be more effective than other treatments of shoot pruning in suppressing the incidence of malformation which is usually very high in early emerging flower buds and panicles.

Mohan, Braj and Prakash, Satya (2011). Studies on the comparative behaviour of different treatments for the control of malformation in mango (*Mangifera indica* L.) blossoms. *Internat. J. agric. Sci.*, 7(2): 259-299.

Key words : Mango, NAA, Deblossoming, Acaricide, Pruning

INTRODUCTION

Mango (*Mangifera indica* L.) occupies a premium position at national and international levels. It is an important fruit crop of Western Uttar Pradesh, which has the reputation in producing quality mango. In spite of these facts, mango is affected by a number of insects/pests, diseases and physiological disorders at all stages of development, right from the plants in the nursery to the fruits in transit and storage. The most serious diseases and physiological disorders infecting mango trees are powdery mildew, anthracnose, die-back, sooty mold, gummosis, internal fruit necrosis, bacterial disease, malformation, fruit drop, alternate bearing, black tip, scorching of leaves, jelly seed, vivipary and spongy tissue. They cause heavy losses to the orchardists if not managed properly. However, among these diseases and disorders found in mango crop, the century old most important recurring annual problem 'malformation' is undoubtedly posing a serious threat to the mango industry particularly in subtropical regions because of its most destructive and wide spread nature and also because of its effective control yet to be discovered with uniform results (Kumar *et al.*, 1980; Sirohi *et al.*, 2006). Out of two forms of

malformation *i.e.* Vegetative and floral, it is the floral malformation which directly affects the productivity. During the past 4 decades many approaches have been tried to initiate possible control measures of this important recurring annual problem. The control measures advocated to date have been either controversial or are impractical for wide scale application under severe disease conditions. Owing to lack of uniformity in recommendation for the control of malformation, the investigation was carried out to study the comparative behavior of different treatments and to find out the most effective control measures of floral malformation among the existing control measures in Amrapali mango, which is the most popular, dwarf, regular and highly susceptible cultivar to the disorder of mango blossom. During the study period, the effectiveness of different chemicals (including acaricide and growth promoter) and mechanical (Deblossoming, shoot pruning and stalk pruning) treatments on the control of malformation was compared.

MATERIALS AND METHODS

The present investigation was conducted at Horticultural Research Centre of Sardar Vallabhbhai Patel

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