



Effect of foliar sprays of growth regulators and micronutrients on incidence of mango malformation

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Abstract : Malformation disease is not merely a serious threat but a menace to the mango industry in several mango growing areas of the world. It does not result in any malformation of mango fruits as may become notated from its name, but produces abnormal vegetative shoots and inflorescence which do not bear fruits. Floral malformation is a major problem in mango cultivation in India causing heavy loss in yield. Therefore, an incite was made to minimize the menace by the foliar application of different growth regulators and micronutrients at the flower bud initiation/flower bud stage. It was found that spraying 200ppm NAA increased the leaf index, length of flower panicles, fruit set, reduction of malformation and even the bio-chemical status like carbohydrate, nitrogen and enhanced RNA and DNA level. Whereas length of terminal shoots, percentage of hermaphrodite flower and level of mangiferin was enhanced by 50ppm GA₃. Foliar application of 50ppm AgNO₃ reduced the duration of flowering and intensity of floral malformation, yet increased the RNA and DNA and magnese content. Even the micronutrient like 0.3% ZnSO₄ effect on increase of leaf index and sex ratio was noticed.

Key Words : Microtomy, Malformation, Biochemical status, Micronutrients, Amrapali

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INTRODUCTION

Mango (*Mangifera indica* L.) occupies a pre-eminent role in development of economic status of the country and better linkage in the international trade. Among several limitations in mango cultivation, the most serious and challenging national problem in mango malformation which pose a great threat to the mango industry. Floral malformation is characterized by the deformation of panicles, suppression of apical dominance shortened primary and secondary axis, thickened rachides of the panicles. The counteracting effect of antimalformin chemicals *i.e.* silver nitrate in control of malformation (Ram, 1992) and spray of chelated Zn and Fe. For control sporadic results have been reported with the use of growth regulators *viz.*, GA₃, cycocel, ethrel, cytokinins and the malady (Das *et al.*, 1988; Bist and Ram, 1988 and Shawky *et al.*, 1978) So, the present investigation was initiated to find

out the most effective chemical on expression of bio chemical activities in malformed and healthy shoots/ panicles and to make comparative study of magnitude of causes and manipulation of severity of floral malformation.

MATERIALS AND METHODS

Experiment was carried out during the year 2010-11 and field studies were conducted at nursery of Horticulture Department, Khandwa (M.P.) and Biochemical studies were undertaken in the research laboratory Deptt. of Horticulture, College of Agriculture, Khandwa (M.P.).

Ten years old tree of Amarpali of uniform in size and vigour infested with malformation were selected from the orchard. Thirty trees one for each treatment were marked in the first week of march 2010 with recommended agronomical trials. The present investigation was conducted in Randomized

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