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Effect of Fungicides on Mango Malformation

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Abstract

Present studies were carried out to observe the effect of fungicides on mango malformation. The fungicides i.e. Benla and Topsin-M were used at the rate of 0.2 per cent. Spray was made in July with an idea to control the man malformation which was found more frequent on late season flushes. Both the fungicides reduced the incidence malformation during the next blooming season. More number of malformed panicles were observed on untreated plants th treated ones. Among fungicides, Benlate was found more effective than Topsin-M to reduce the problem of man malformation.

Introduction

Mango (*Mangifera indica* L.) is the most important fruit of the tropical world. Pakistani mangoes are best of all due to their excellent taste and superb flavour. However the crop is affected with different problems such as alternate bearing malformation and fruit drop. Malformation is the most serious which causes heavy losses to growers. In a four year study, it was revealed that a single foliar application of 1000 ppm cobalt sulphate prior to flower bud differentiation successfully reduced the floral malformation by 93 to 94.87 per cent (Zora *et al*., 1993). Growth of *Fusarium moniliform* thought to be the cause of mango malformation, was inhibited by Benomyl and Captan when sprayed at fruit bud differentiation but these fungicide did not show any effect when sprayed on diseased trees (Ibrahim *et al*. 1975). Mango malformation was controlled with Fytolan (Copper oxychloride) at 0.02 per cent in two mango cultivars, Bombai and Himseagar inoculated with *Fusarium moniliform*. Spray was applied once before inoculation followed by two further sprays at five and eight days interval (Chattopadhaya and Nandi, 1977). Three varieties of Mango, Dusehri, Sammer Bahisht and Bombay Green having 100 per cent floral malformation in previous season were sprayed with 100-200 ppm NAA in October. The treatments considerably reduced the incidence of malformation in the following season particularly at the higher rate of NAA (Majunder *et al*., 1970).

These studies were undertaken to control the incidence of mango malformation, the most serious malady of mango with the foliar application fungicides. Increase in productivity is also expected with the control of malformation.

Materials and Methods

The studies were carried out in experimental fruit garden of the Horticulture Department during 1996-98. Benlate and Topsin-M @ 0.2 per cent were sprayed on mango cv. langra in the first week of July which coincide with the time of bud differentiation and their effect on malformation was studied in the next blooming season. There were three replications for each treatment. The data were obtained for number of total flushes, bloomed flushes and number malformed panicles from treated and control trees a analysed according to the method described by Steel a Torrie (1980). The treatments were comprised T_1 (Contr T_2 (Benlate) 0.2 per cent and T_3 (Topsin-M) 0.2 per cen

Results and Discussion

Fungicides were found effective to reduce the problem incidence of floral malformation (Fig. 1). Benlate Topsin-M were found equally good, however Benlate g marginally better results. Two trees were u independently, one for spray of Benlate and other Topsin-M. Each tree was divided into four equal portio Three parts of the first tree were sprayed with Benlate of the second tree with Topsin-M while the fourth part left untreated in each case. Although the number of flu tagged in the previous season were almost equal on tre and untreated parts of the trees yet, the frequency of f malformation was found different on control and tre portions in the next blooming season.

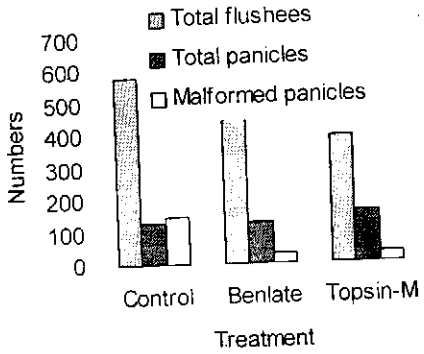

Fig. 1: Effect of benelate and topsin-M on malformation

In case of control part the average malformed panicle 46 out of 130.00 bloomed flushes from 562.50 flus the previous season whereas the Benlate treated produced only 30 malformed panicles out of

bloomed flushes from 530.66 flushes of the last year on average basis. Similarly in case of other tree, treated with Topsin-M, on the treated part, the average number of malformed panicles was only 32.66 out of 164.75 panicles from 595 vegetative flushes emerged in the previous growth period. Our results are in accordance with the findings of Zora *et al.* (1993) and Ibrahim *et al.* (1975) who also reported control of malformation through spray of fungicidal material.

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