

Studies of Mango Malformation Diseases (MMD) in Darbhanga district and its control and management to minimize losses

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ABSTRACT

The present work has been done in and around Benipur subdivision located around 21 kilometer from district head quarter. The main objective of the study was to investigate the extent the mango mal formation disease in the district and to find out the managerial and agronomical practices to reduce the extent of damage. The control measures of mango malformation have shown inconsistent results because a reduction in the incidence of the disease was observed in some orchards and not in others (Chakrabarti *et al.*, 1997). However, a combination of some of these individual measures resulted in a better control of the disease.

Keywords: *Mangifera indica*, *Fusarium mangiferae*, Pruning, Deblossoming.

INTRODUCTION

The mango is a fleshy stone fruit belonging to the genus *Mangifera*, family Anacardiaceae consisting of numerous tropical fruiting trees in the flowering plant. The mango is native to the Indian subcontinent from where it spread all over the world. It is one of the most cultivated fruits of the tropical world. While other *Mangifera* species (*e.g.* Horse mango, *M. foetida*) are also grown on a more localized basis, *Mangifera indica* – the 'common mango' or 'Indian mango' is the only mango tree commonly cultivated in many tropical and subtropical regions, and its fruit is distributed essentially worldwide. It is recognized and honored by the Government of India as the National Fruit of India. It is also the National Fruit of Philippines and Pakistan. Mango is often referred as "King of Fruits".

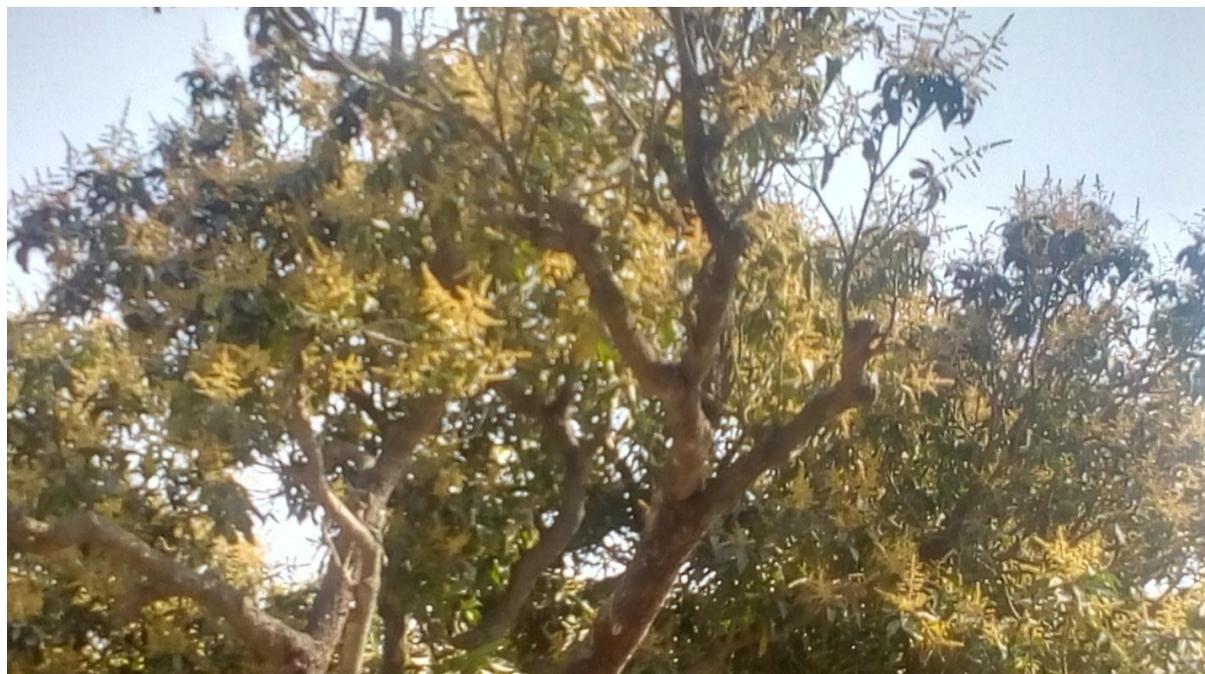
Mango (*Mangifera indica* L.) malformation disease (MMD) is one of the most important diseases affecting this crop worldwide, which causes severe economic losses because of the reduction of productivity. Different *Fusarium*-like strains were isolated from infected tissues (Crookes and Rajkenberg, 1985; Gamliel *et al.*, 2009a and Lahav *et al.*, 2001). Colonies from single-spored isolates possessed dark purple-to-salmon-colored mycelium when grown on potato dextrose agar medium. On fresh carnation leaf agar medium, mycelium contained aerial conidiophores possessing three to five celled macroconidia and abundant microconidia in false heads from mono-and polyphialides.

MATERIALS AND METHODS

The place of work were selected based on the location where different kind of mango were grown at large scale on commercial and personal level (Fig. 1). The identification, extent of disease were based on standard form of literature and previous review of literature.

Various agronomic practices to reduce the extent of diseases are as follows':

1. Management through use of different growth regulators.
2. Management of disease through deblossoming.
3. Disease manage through use of chemical fertilizer.
4. Management through pruning.



RESULTS AND DISCUSSION

Various methods and agronomical practices have been practiced to know the extent of control of mango mal formation through different practices. Yield can be reduced as much as a tune of 40-75%. The present work was to reduce the extent of damage below the damage of economic level. Disease management practices through different approach as standard practice are as follows. Reduction in the malformation of panicles was observed by the use of GA3 at flower but differentiation stage (Lima *et al.*, 2012; Marasas *et al.*, 2006 and Newman *et al.*, 2012). Deblossoming at bud burst stage gave substantial reduction in malformation. Result of continuous use of NPK showed panicle formation in mango. Pruning reduced malformation as studied by some workers (Ansari, 2004; Bhatnagar and Beniwal, 1977; Britz *et al.*, 2002 and Youssef *et al.*, 2007).

CONCLUSION

Fusarium is one of the most heterogeneous fungal genera and classification of this genera is very difficult. Currently the differentiation of Fusarium species is based on physiological and morphological characteristic such as the shape and size of Microconidia. On the basis of above discussion it may be concluded that pruning, use of growth regulators, use of nutrients, through deblossoming.

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