

Mango

Disorders

Spongy Tissue :

It is a major problem in Alphonso, where a pulp patch fails to ripen. This malady is caused due to inactivity of ripening enzymes due to high temperature, convective heat and post harvest exposure to sunlight.

Control : Use of mulching and post harvest exposure to low temperatures between 10-15° C for 10-18 hours has been useful in reducing the malady.

Mango Malformation :

Malformation is widely prevalent in northern India, particularly in the states of Punjab, Delhi and western U.P. where more than 50% of the trees suffer from this malady. The malformed panicles remain unproductive and are characterized by a compact mass of male flowers, greenish in colour and stunted in growth. The main and secondary rachis is thick and short and bears flowers with relatively larger bracts, sepals and petals as compared to normal flowers. The malformed panicles remain intact on the trees for a considerable long period. The complexity of the disorder is attributed to cultural, nutritional and factors like, mites, fungal, viral, hormonal imbalance etc. The exact cause and control of the malady is yet to be established.

Control : Spraying of Planofix (200 ppm) during the first week of October followed by deblossoming at bud burst stage is recommended as a remedial measure against malformation.

Biennial Bearing :

The term biennial, alternate or irregular bearing generally signifies the tendency of mango trees to bear a heavy crop in one year (On year) and very little or no crop in the succeeding year (Off year). Most of the commercial varieties of north India, namely, Dashehari, Langra and Chausa are biennial bearers, while south Indian varieties like Totapuri Red Small, Bangalora, and Neelum are known to be regular bearers. When a tree produces heavy crop in one season, it gets exhausted nutritionally and is unable to put forth new flush thereby failing to yield in the following season. The problem has been attributed to the causes like genetical, physiological, environmental and nutritional factors.

Control : For overcoming biennial bearing, deblossoming is recommended to reduce the crop load in the 'On' year so that it is balanced in the 'Off year'. Proper maintenance of orchard by way of effective control of pests and diseases and regular cultural operations may also result in better performance of the tree every year.

Soil application of Paclobutrazol (PP₃₃₃) or Cultar @ 4 g/tree in the month of September resulted in early flowering with higher fruit set and yield. It may be applied every year for regular fruiting, particularly in young trees.

Ringling of branches is recommended as means of inducing flowering in the 'Off' year. However, Weak, stunted, unhealthy trees should not be ringed to force flowering. It involves removal of 1 cm wide ring of bark on a branch of about 15 cm thickness. Ringling stops vegetative growth and results in accumulation of carbohydrates and other metabolites in the portion of the branch above the ring, thereby creating physiological condition for flowering. Ringling should be done in August or early September, well before the time of fruit-bud differentiation.

Fruit Drop :

The intensity of fruit drop varies from variety to variety. Among the commercially grown varieties, Langra is more susceptible to drop, while Dasherri is the least. The fruit drop is more or less a continuous process and can be classified into three phases, viz. (i) pinhead drop, (ii) post-setting drop and (iii) May-month drop. The fruit drop in first two phases are insignificant compared to the third phase which affects the final yield significantly and needs more attention. Embryo abortion, climatic factors, disturbed water relation, lack of nutrition, attack of disease and pest and hormonal imbalances are the major factors that lead to fruit drop.

Control : The foliar application of Alar (B-nine) @ 100 ppm or NAA 20 ppm at pea stage of fruit was found effective in controlling fruit drop in mango.

Black Tip :

Black tip is a serious disorder, particularly in the cultivar Dasherri. The affected fruits become unmarketable and reduce the yield to a considerable extent. The damage to the fruit gets initiated right at marble stage with a characteristic yellowing of tissues at distal end. Gradually, the colour intensifies into brown and finally black. At this stage, further growth and development of the fruit is retarded and black ring at the tip extends towards the upper part of the fruit. Black tip disorder has generally been detected in orchards located in the vicinity of brick kilns. It has been reported that the gases like carbon monoxide, sulphur dioxide and ethylene constituting the fumes of brick kiln are known to damage growing tip of fruits and give rise to the symptoms of black tip. Apart from these factors, irrigation, condition of the tree and management practices also play important role in deciding the severity of the disorder.

Control : Planting of mango orchards in North-South direction and 5-6 km away from the brick kilns may reduce incidence of black tip to a greater extent. The incidence of black tip can also be minimized by spraying Borax (1%) or other alkaline solutions like caustic soda (0.8%) or washing soda (0.5%). The first spray of Borax should be done positively at pea stage followed by two more sprays at 15 days interval.

Clustering in Mango ('Jhumka') :

A fruiting disorder, locally known as 'Jhumka', is characterised by the development of fruitlets in clusters at the tip of panicles. Such fruits cease to grow beyond pea or marble stage and drop down after a month of fruit set. Absence of sufficient population of pollinators in the orchards is the major reason. The other reasons causing the disorder are old and overcrowding of trees, indiscriminate spraying against pests and diseases, use of synthetic pyrethroids, monoculture of Dashehari and bad weather during flowering.

Control : Introduction of beehives in the orchards during flowering season for increasing the number of pollinators and restrict insecticidal sprays at full bloom to avoid killing of pollinators.

Pests and diseases should be controlled in time by spraying the recommended pesticides and concentrations. Spraying of NAA (300 ppm) during October-November is recommended.

The practice of monoculture of a particular variety may be avoided. Particularly in case of Dashehari, 5-6% of other varieties should be planted in new plantations.