



Integrated Pest Management Strategies for Insect Pest Mealy Bug in Mango

(*Mood Suguna, Gaje Singh, Rajendra Singh and Ashish Pal)

Department of Entomology, Sardar Vallabhbhai Patel University of Agriculture &
Technology, Meerut, Uttar Pradesh, India

*Corresponding Author's email: moodsuguna13@gmail.com

The total Horticulture crop production during 2022-23 (350.87) Million Tonne (Mt). Among that Mango is the top 1st cultivated fruit in the area. Mango (*Mangifera indica*) is the main fruit crop of India and is considered the king of fruits. Besides delicious and excellent in taste and attractive aroma, it is rich in vitamin A&C. The tree is hardy in nature and requires comparatively low maintenance costs. India is home to about 1,000 varieties. But only a limited varieties are grown commercially across India. Most Indian mango cultivars necessitate particular eco-geographical conditions to achieve optimal growth and yield. Among them, Andhra Pradesh stands first in mango production with a share of 23.89 percent and highest productivity in 2021-22. followed by Uttar Pradesh, Karnataka and Bihar. There are a number of pests of this fruit and more than 200 species of insects have damaged mango tree. In that few are major economic importance. These include leafhopper, stem borers, fruit flies, stone weevil mealybugs and gall midges. The fruit flies and nut weevils are of quarantine pest and restrict the international trade of mangoes. Among the pests mango mealy bug (*Drosicha mangiferae*) is one of the major pests of mango in the states of Punjab, Uttar Pradesh, Bihar and Delhi. Biology, nature of damage and management given below.

Common name : Mango mealy bug (Giant mealy bug)

Scientific name : *Drosicha mangiferae*

Order : Hemiptera

Family: Margarodidae

Distribution: China, India, Bangladesh and Pakistan. In India this mealy bug is widely prevalent across major mango-growing regions, including Uttar Pradesh, Bihar, Punjab, Haryana, Rajasthan, Maharashtra, and West Bengal.

Host Range: Mango, Jack-Fruit, Mulberry, Guava, Cherry, Phalsa, Fig, Grapevine, Lichi, Grapevine and Pomegranate.

Morphology: During April and May, the female deposited eggs up to 400 -500 in clusters within ovisacs buried 5-15 cm deep in the soil beneath the trees. Female are wingless and male have one pair of wings. body covered with a white powdery wax layer, giving them a white or grayish appearance and Pest active from the month of December to May. The insect has one generation life cycle.

Nymphs: The newly hatched nymphs are called as crawler, which are actively move and climb up on the tree.

Nature and Damage: Nymphs and adults settle on various parts of mango trees such as tender shoots, leaves, flowers, and fruits, where they extract sap by sucking.

- The hoppers feed on sap from inflorescences, fruit stalks, and fruits, causing issues such as flower drop and premature fruit drop.
- Their excretion of honeydew promotes the growth of sooty mould, which further impedes fruit development and further reduces the plant's ability to photosynthesize and can affect fruit quality. And causes the drying of leaves and inflorescence and presence of pinkish mealy bugs on fruit and fruit stalk.

Management

Cultural practice:

- Practices proper sanitation, pruning affected plant parts, and maintaining overall plant health to reduce susceptibility to infestation.
- Removing weeds from orchards helps eliminate alternate hosts for mealybugs.
- Flooding orchards with water in October can effectively eliminate eggs.
- Deep summer ploughing during June – July. up to base of the tree trunks, after harvesting to expose eggs of mealy bugs.

Mechanical control:

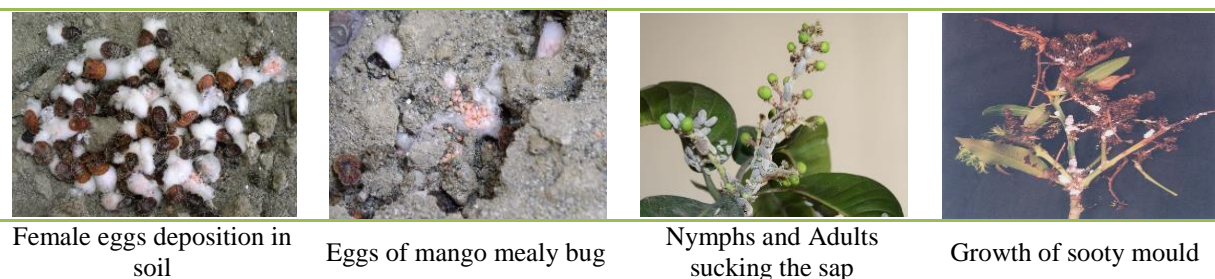
- Handpicking and physically removing mealybugs from affected plants can help reduce their numbers.
- Crawlers collecting beneath the polythene sheet may be scraped with a knife.
- Apply grease band of 25 cm wide around tree trunks to prevent mealy bugs from climbing up. These bands act as barriers to restrict their movement, especially during the crawling stages.

Biological control:

- Conserve predators like *Menochilus sexmaculatus*, and *Cryptolaemus montrozier* (Coccinellidae) and *Chrysopas celestes*, *Brinckochryascelestes* (Chrysopidae) and parasitoids like *Phygadeuon sp.* (Ichneumonidae).

Chemical control:

- Application of Chloropyriphos 20 % EC 500 – 1000 ML Per acre or *Beauveria bassiana* 750 ml-1 liter/acre or Imidacloprid 17,8% SL 100 – 150 ml / acre.
- Spraying of buprofezin 25% SC @ 1.25ml/ 1 of water.



Female eggs deposition in soil

Eggs of mango mealy bug

Nymphs and Adults sucking the sap

Growth of sooty mould

References

1. Amin, R., Khan, M.S.I., Hossain, M.E. and Sultana, R. (2023). Study on Biology of Mango Mealybug and Their Chemical Control in Laboratory. Int. J. Bus. Soc. Sci. Res. 11(2): 27–31.
2. Venkat Rami Reddy, P., Gundappa, B. and Chakravarthy, A.K.(2018). Pests of Mango. In: Omkar (eds) Pests and Their Management. Springer, Singapore.
3. Subramanian, S., Boopathi, T., Nebapure, S.M., Yele, Y., Shankarganesh, K. (2021). Mealybugs. In: Omkar (eds) Polyphagous Pests of Crops. Springer, Singapore.