

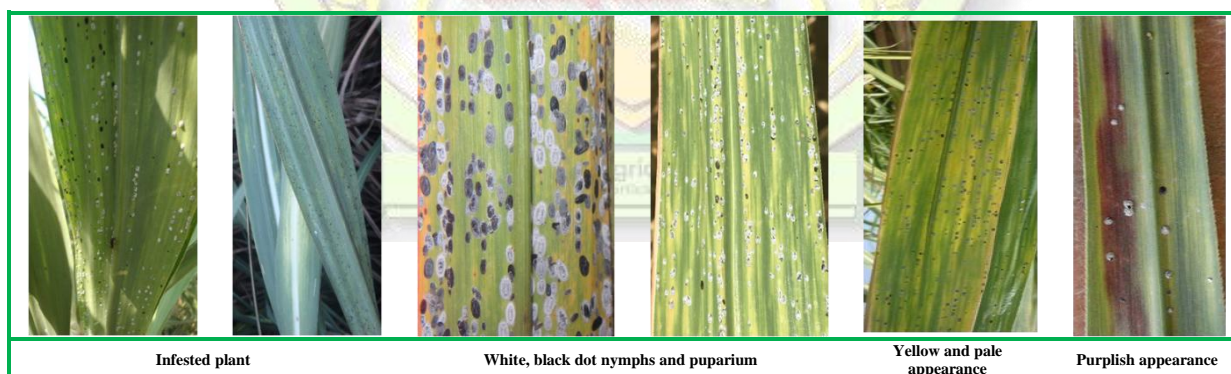
## **Symptoms, Biology, and Integrated Management of Whiteflies (*Aleurolobus barodensis* and *Neomaskellia bergii*), (Aleurodidae: Hemiptera) in Sugarcane**

**\*M. Punithavalli, N. Geetha, T. Rajula Shanthi and Gokila C**  
**ICAR – Sugarcane Breeding Institute, Coimbatore-641001, India**  
**\*Corresponding Author's email: [bjaasritha14@gmail.com](mailto:bjaasritha14@gmail.com)**

The whitefly *Aleurolobus barodensis* is a significant pests in India, including major sugarcane growing regions like Andhra Pradesh, Bihar, Tamil Nadu, Haryana, Punjab, Gujarat and Maharashtra. Whereas *Neomaskellia bergii* occurs sporadically, with its colonies confined to limited areas on the leaves. It damages the crop by sucking sap, leading to yellowing, leaf drying, and yield losses of up to 50%. Summer drought and dry spells during the monsoon greatly favor whitefly population buildup. Severe whitefly incidences are also observed in semi-dry alkaline patches as a result of physiological stress. Varieties which have long and broad leaves are highly susceptible to the pest. Generally, Crops in waterlogged low-lying areas of eastern Uttar Pradesh, Bihar, Haryana & Gujarat are highly infested by whitefly.

### **Symptoms of damage (White fly - *Aleurolobus barodensis*)**

A large number of grey, black, or white speck-like nymphs are usually found on the underside of sugarcane leaves, where whiteflies suck phloem sap, causing yellowing and a pale appearance, which can lead to yield losses exceeding 50%. As the infestation progresses, the leaves may develop pinkish or purplish discoloration before eventually drying out. The secretion of honeydew leads to the growth of sooty mold, further affecting photosynthesis. In severe cases, the leaves take on a fiery appearance, and heavy infestations can significantly reduce overall plant growth.



Infested plant

White, black dot nymphs and puparium

Yellow and pale appearance

Purplish appearance

### **Biology of whitefly *Aleurolobus barodensis***

#### **Eggs:**

- Females lay eggs in a row near the midrib on the first or second tender leaves on the lower surface.
- Freshly laid eggs are yellowish with a small curved stalk and turn black within two hours.
- Incubation period varies from 9-13 days.



Symptoms of damage (White fly – *Neomaskellia bergii*)

**Nymphs:**

- Neonate nymphs are initially pale yellow, flat, and oval-shaped, later turning shiny black.
- Nymphal body is surrounded by waxy fringes.
- The fourth instar, or pupal stage, is flat, oval, and greyish, slightly larger than the nymph, with a 'T'-shaped white mark on the thorax that splits during adult emergence.
- Durations of the first, second, third, and fourth instars are 2–4, 4–5, 3–5, and 10–15 days, respectively.

**Adults:**

- Adult has a pale-yellow body and hyaline wings dusting with a white waxy powder resembling tiny white moths.
- Adult duration lasts for 24-48 hours.

**Biology of *Neomaskellia bergii*****Eggs:**

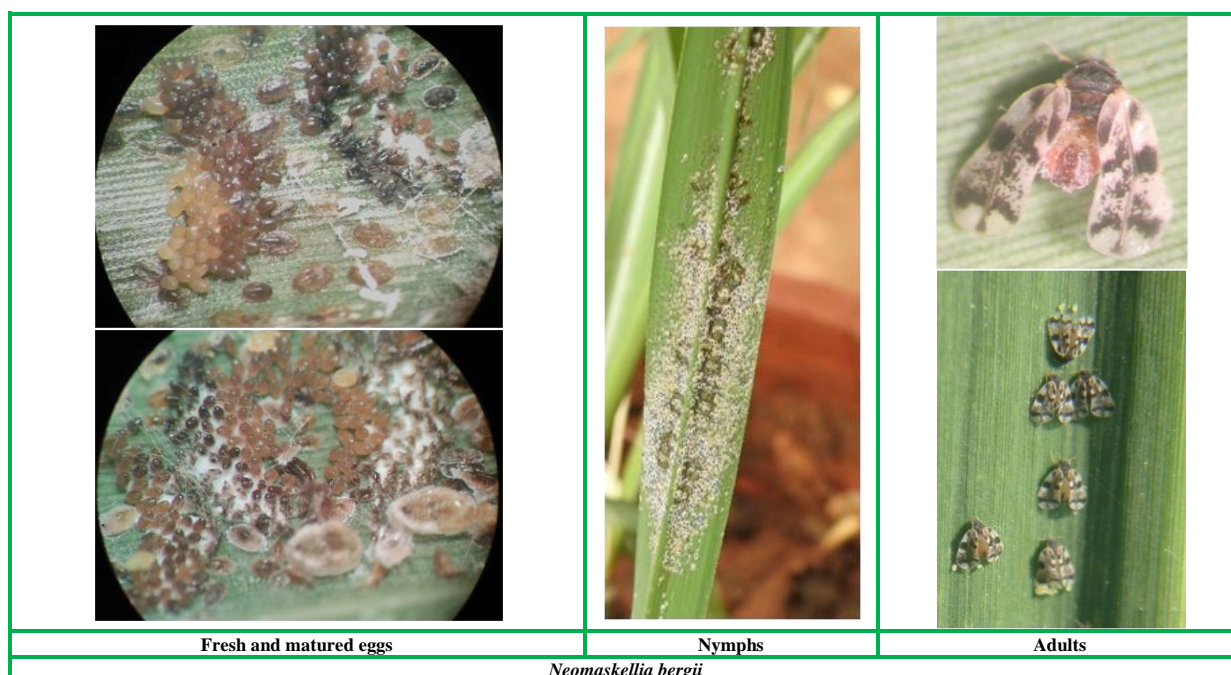
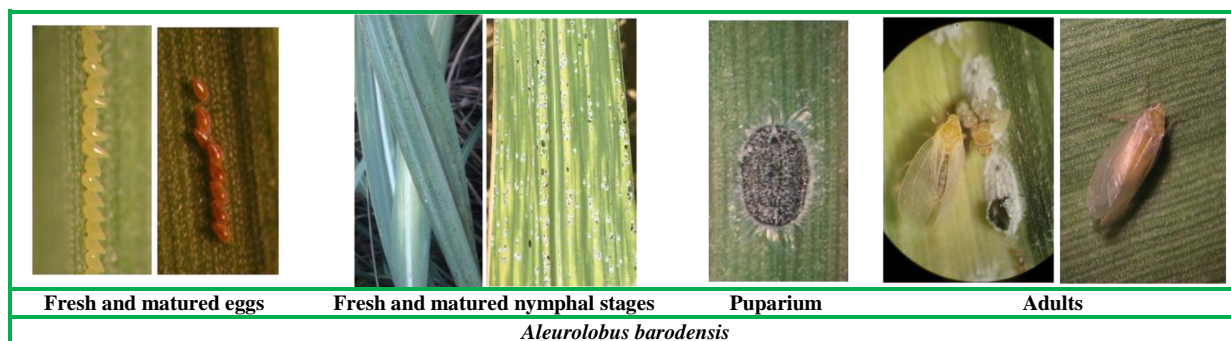
- Eggs are laid in concentric, opposite semicircles and attached to the leaf surface by a peduncle.
- Freshly laid eggs are pale yellow and turn dusky yellow within 48 hours.
- Egg period lasts 2-3 days.

**Nymphs:**

- Black, grey or white dot like pupae on the undersurface of the leaves.
- Nymph is oval in shape and brownish and fully surrounded by white wax.

**Adults:**

- Pale brown adult and has black bands on wings.





## Management

### Cultural & mechanical control

- Avoid excessive use of nitrogenous fertilizers
- Discourage ratooning in low lying areas.
- Regularly detrash and destroy leaves infested with whitefly puparia before adult emergence.

### Biological control

- Redistribute the nymphal puparial parasitoid *Amitus minervae* from fields with high activity to fields lacking parasitoid presence.

### Chemical control

#### Spray the following insecticides in sugarcane crops affected by whitefly:

- Spray Acephate at 2 g per litre of water, and repeat the application after one month to kill nymphs emerging from the eggs.
- Apply Thiamethoxam 25 WG at 125 g per hectare using 750 litres of spray fluid for effective management of whitefly.
- Apply Chlorpyrifos 20 EC at 2.5 litres per hectare using 1250 litres of spray fluid with a hand sprayer for effective control of whitefly.

## Conclusion

The sugarcane whitefly is a serious pest that causes considerable yield losses by weakening plants through sap feeding and inducing physiological stress. Since its incidence is influenced by climatic factors, soil conditions, and crop stress, an integrated management approach is essential. Adoption of crop hygiene practices, use of resistant varieties, conservation of natural enemies, and need-based application of selective insecticides can effectively suppress whitefly populations. A well-coordinated integrated pest management strategy not only reduces crop losses but also minimizes ecological disturbance, ensuring sustainable sugarcane production.

## Reference

1. Srikanth, J., Salin, K.P. and Jayanthi, R. 2012. Sugarcane pests and their management. Sugarcane Breeding Institute, Coimbatore. 88p.