

Pest Alert

Occurrence of Invasive Neotropical Whitefly *Aleurotrachelus atratus* Hempel (Hemiptera: Aleyrodidae) in India on Coconut

ICAR-National Bureau of Agricultural Insect Resources has identified a highly invasive palm infesting whitefly, *Aleurotrachelus atratus* Hempel (Hemiptera: Aleyrodidae) for the first time in India. The pest is found to be colonising on coconut palm, *Cocos nucifera* (Arecales: Arecaceae) and ornamental palm, *Dypsea lutescens* (Arecales: Arecaceae) at Mandya and Mysore districts of Karnataka during February, 2019. Whitefly specimens were collected from infested plants and identity of the pest species is confirmed through morphological characteristics. The intensity and severity of this whitefly on coconut and areca palm is about 10-60% of leaflets per frond per palm and observed in few isolated garden across the two districts. Colonies of *A. atratus* is also associated with other recently invaded whiteflies such as rugose spralling whitefly and Bondar's nesting whiteflies, scale, and mealybug in coconut. *A. atratus* is a Neotropical whitefly, originally described by Hempel (1922) from Brazil and reported widely in the tropics and subtropics and colonize on more than 110 plant species belonging to Arecaceae, Rutaceae, Solanaceae, Cycadaceae and Lauraceae (Malumphy, 2013).

Aleurotrachelus atratus has spread rapidly in the Neotropical region viz., Antigua, Bahamas, Barbados, Bermuda, Brazil, Colombia, Guyana, Nevis, Puerto Rico, Venezuela and USA, (Florida) probably due to anthropogenic activities such as trade in ornamental palms (Howard *et al.*, 2001). It is now found in Africa, North and South America, Central America and the Caribbean, Europe and Oceania (Borowiec *et al.*, 2010). Due to its invasiveness and extensive host range, the pest is considered to be of significant economic status and in the Comoro Islands, *A. atratus* was responsible for an economic loss of 55% to local coconut producers in 2002 (Yousoufa *et al.* 2006). In India, *A. atratus* may spread from Karnataka to other coconut producing states and extend its host range to other Arecaceae palms, Solanaceae and Rutaceae plants. If left unchecked, it could be a potential threat to coconut cultivation as well as a threat to eco-tourism in India.



Fig.1. Symptoms of damage on coconut and life stages of *Aleurotrachelus atratus*

Eggs and larvae of *A. atratus* occur on the underside of palm fronds, and when abundant they are highly conspicuous due to the dense flocculent white wax which covers the black pupae (Fig.1).

Eggs are stalked, initially creamy white and turn to dark brown before hatching. The first instar nymph has four pairs of wax plumes excreted by glands at the base of dorsal setae. Each dorsal seta has curving longitudinal grooves that guide the wax flakes as they are secreted from the seta base. All the four nymphal/pupal stages are black. Puparia are elliptical, black, 1.0-1.1 mm long with a long marginal white wax fringe and dorsal wax filaments that often completely cover the insect (Fig.2). When the wax is removed, each puparium can be seen to have a distinct diagnostic pair of sub-marginal longitudinal cephalo-thoracic folds that extend into the abdomen. This species can be easily diagnosed from its closely related and recently invaded species *Aleurothrixes trachoides* (Back) by elongate oval puparium, the marginal teeth having crenulations on their sides, the pattern of the tile-like sculpturing on the sub-margin, and the rounded lingula tip and not bilobed.

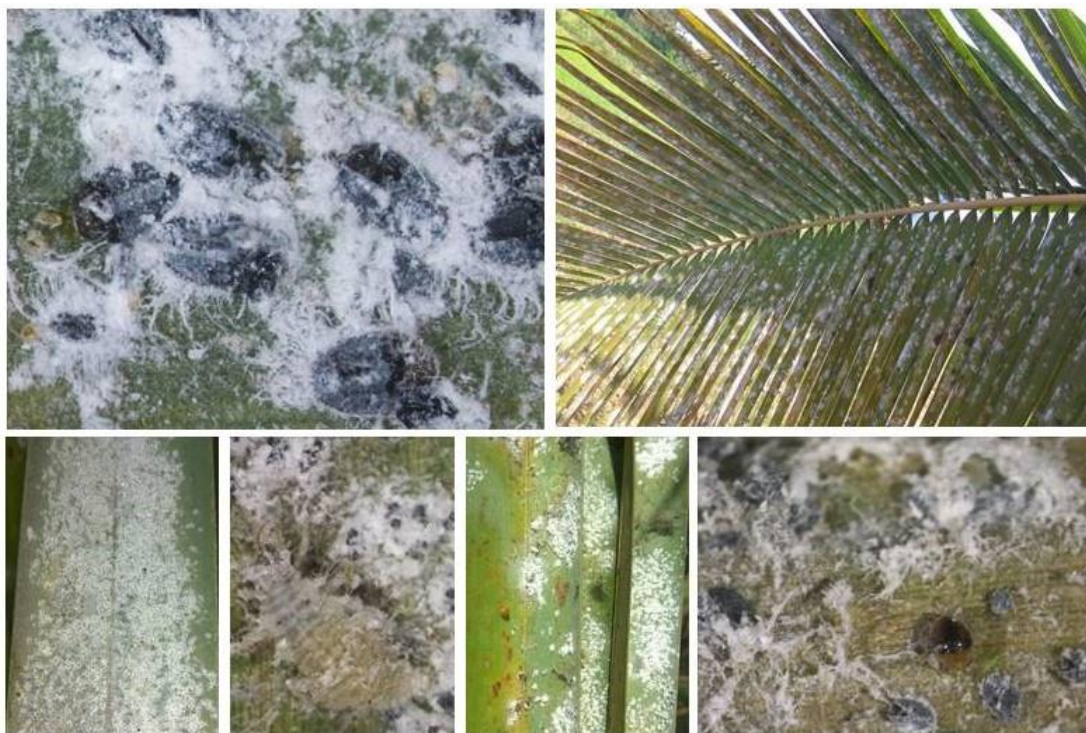


Fig.2. Typical puparia of *A. atratus* and their natural enemies on coconut

Adults are different from the other recently invaded whiteflies of coconut; smaller than rugose spiralling whitefly, *Aleurodicus rugioperculatus* and larger than Bondar's nesting whitefly, *Paraleyrodes bondari*, without any wavy marking on the wings. One parasitoid, *Encarsia* spp. (Hymenoptera: Aphelinidae) and four predators viz., *Dichochrysa astour* (Neuroptera: Chrysopidae), *Cybocephalus* spp. (Coleoptera: Nitidulidae), *Chilocorus nigrita* and *Jauravia pallidula* (Coleoptera: Coccinellidae) was found in association with this whitefly. ICAR-NBAIR has initiated intensive surveys for recording its distribution, host plant range, intensity and natural enemies. Farmers, researchers and other stakeholders should be on the lookout and report its occurrence to ICAR-NBAIR as soon as they notice this new invasive pest on coconut and/or on any other host plant.

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