



Incidence of the white fly (*Aleurocanthus arecae* David) on coconut foliage

(Manuscript Received: 27-03-06; Revised: 02-05-06, Accepted: 26-04-07)

Keywords: Coconut, white fly, *Aleurocanthus arecae*

The Aleyrodids (white flies) belonging to the order Hemiptera have received great attention throughout the world as major pests of economically important crops as well as vectors of plant virus diseases. Whiteflies are minute usually inconspicuous bugs mostly found infesting the foliage of plants. They are so called because the adults are small, fly-like, often dull white in colour. Very few whitefly species are reported on coconut from India. Recently, occurrence of the white fly on coconut foliage was noticed in CPCRI campus, Kayangulam, Kerala. Hence a search was undertaken and revealed the presence of the species *Aleurocanthus arecae* David. This species was first described and reported infesting arecanut palms from Karnataka (India) by David and Manjunatha (2003). Hundred numbers of 6-10 year old young coconut palms were screened for the study. Forty one palms showed presence of *A. arecae*, of which 35% palms showed presence of white fly in more than 25% of leaves. The incidence of the pest was noticed more on the outermost whorl of coconut foliage. The presence of the pest can be easily distinguished by looking the sooty mould growth on the upper surface of the leaflets (Fig.1). The average percentage incidence and population per leaf let are presented in Table 1. Wide variation was observed in the population of insect on the leaf which ranged from 7 to 1200 insects/ coconut leaflet.

Adults are fragile insects of 1-3 mm in body length, dark orange colored with smoky grayish wings (Fig. 2). Eggs were found in circular to spiral rings on the abaxial surface of leaves (Fig. 3). First instar is mobile crawlers

Table 1. Incidence and population of white fly on coconut foliage

Particulars	Per cent incidence/ population
Average per cent incidence on leaf /palm	19.67 (range 4.76 - 57.14)
Average per cent incidence of leaflet/leaf	4.43 (range 1- 12.84)
Population of white fly/ leaflet (numbers)	151.04 (range 7 - 1200)

and subsequent instars are sessile. The immature stages secrete waxy substances in the exuviae. Both nymphs and adults are reported to feed *via*. stylet mouth parts with which they pierce the plant tissue and feed on the phloem sap. These insects often produce a large amount of sugar-rich excreta, whilst extracting sufficient protein-building amino acids from the sap to facilitate body growth. These excreta, termed 'honeydew' may support the growth of sooty mould on affected plants. Large infestations of whiteflies may thus adversely affect their hosts, both by excessive sap loss and through sooty mould interfering with photosynthesis (Martin, *et al.*, 2001c/f Jesudasn, 2001).

Examination of the infested leaflets revealed the presence of four species of natural enemies (Table 2) and Figures 4, 5, 6 and 7). These natural enemies probably keep the population of white fly under control most of the time.

Of the several white fly species recorded in India, a few are economically important like *Bemissia tabaci* on a wide range of host plants, *Aleurocanthus woglumi* on citrus and *Aleurolobus barodensis* infesting sugarcane and *Aleurodicus disperses* on papaya and guava (Jesudasn, 2001). Forty three species of Aleyrodidae were listed on palms by Mound and Halsey (1978) and

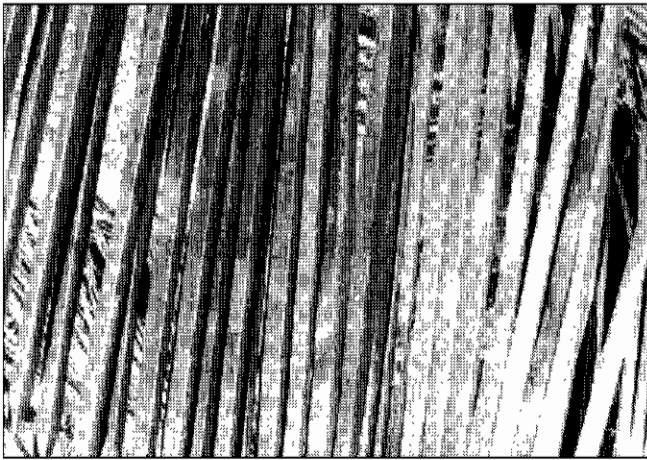


Fig. 1. Sooty mould growth on white fly infested coconut leaf

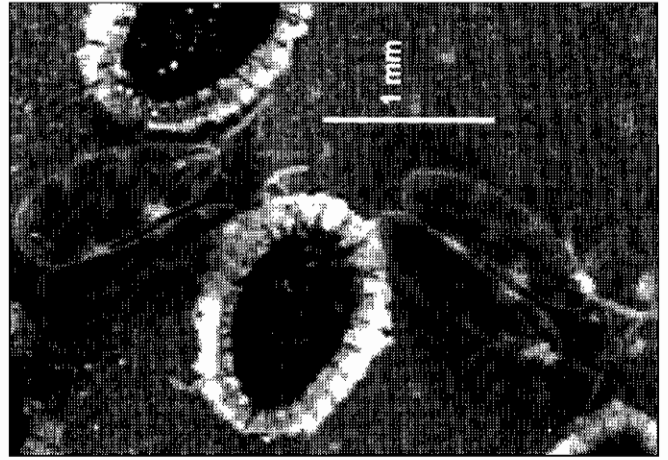


Fig. 2. *Aleurocanthus arecae* - Adult fly

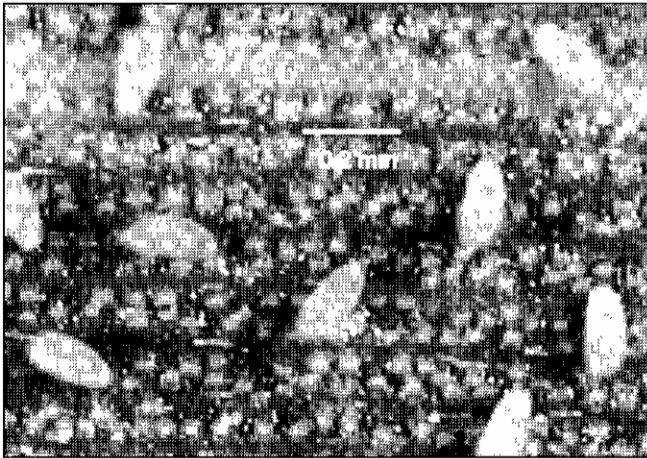


Fig. 3. Eggs of *Aleurocanthus arecae*

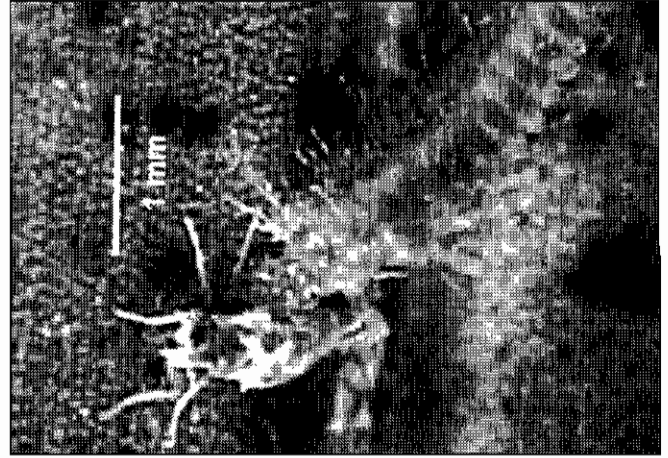


Fig. 4. *Serangium parcesetosum sicard* predated on the white fly adult

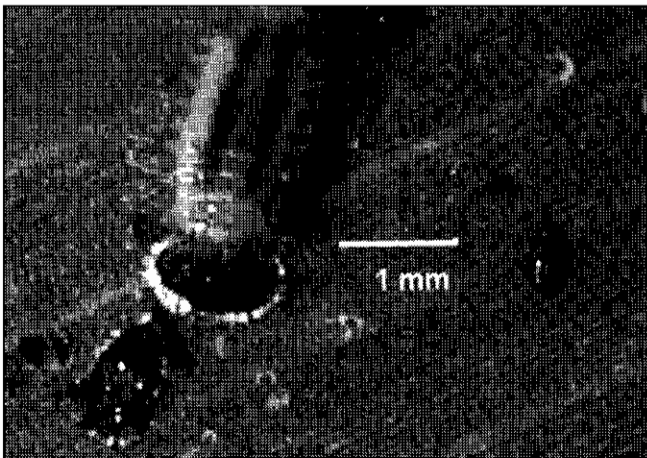


Fig. 5. *Jauravia pallidula* Motschulsky predated on white fly nymph

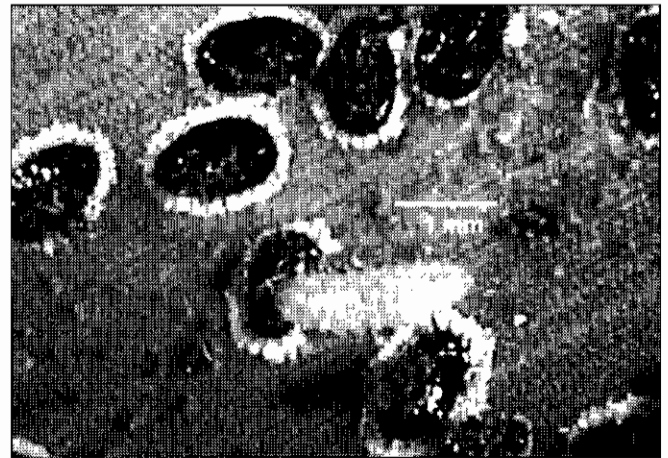


Fig. 6. *Cybocephalus* sp. predated on white fly nymph

Table 2. List of predators recorded on *Aleurocanthus arecae* on coconut foliage

Predator	Family	Stage of white fly predated upon
<i>Serangium parcesetosum</i> Sicard	Coccinellidae	Adults and nymphs
<i>Jauravia pallidula</i> Motschulsky	Coccinellidae	Adults and nymphs
<i>Cybocephalus</i> sp.	Nitidulidae	Adults and nymphs
Anthocoreid bug	Anthocoreidae	Eggs



Fig. 7. Anthocoreid bug predated on white fly eggs

about 80% of white flies reported on palms were on coconut (Howard *et al.*, 2001). The white fly species reported from India on palms include *Aleurocanthus bambusae* on *Phoenix dactylifera*, *A. cocois* on coconut and *A. nubilans* from arecanut. *Aleurocanthus* species viz., *A. cocois*, *A. dissimilis*, *A. gateri*, *A. palauensis* and *A. yusopei* were recorded on coconut from South east Asia, Myanmar, Palau islands and Malaysia. *Aleurodicus* species are reported from Puerto Rico, Tropical America, Australia, Oceania, Brazil, Jamaica, Southern Caribbean, Guyana and Trinidad on coconut.

Since white flies are capable of inflicting damage to cash crops like cotton, brinjal, citrus, sugarcane, guava

etc; occurrence of white flies on coconut leaves need to be monitored and investigated to prevent possible spread of the insect to other hosts. Large infestations on coconut palms itself may adversely affect the host and hence it is essential to monitor the insect to prevent it from attaining a pest status on coconut.

Acknowledgement

The authors thank Dr. Anil Kumar Dubey, Scientist, Institute of Wood Science and Technology, Bangalore for identification of the white fly specimens and Dr. J. Poorani, Senior Scientist, PDDB, Bangalore for identifying the predators.

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