

## *Aleurodicus destructor*

### Introduction

The coconut whitefly, *Aleurodicus destructor* (Mackie) unlike the rest of the subfamily Aleurodicinae does not have its origins in the Neotropic and is a native of the Austro-Oriental Pacific zoogeographical region. However, it is reported to be present in Brazil and St. Vincent & The Grenadines. The main host is coconut and the pest is of quarantine importance to the Caribbean..

### Identity

J.H. Martin (1987)

Authority	: Mackie (1912)
Classification	
Kingdom	: Animalia
Phylum	: Arthropoda
Class	: Insecta
Order	: Hemiptera
Family	: Aleyrodidae (Aleurodicinae)
Genus	: <i>Aleurodicus</i>
Species	: <i>destructor</i>
Synonyms	: <i>Aleurodes albofloccosa</i> (Froggatt, 1918), <i>Aleurodicus destructor</i> (Mackie, 1912).
Common names	: Coconut whitefly, mosca blanca del cocotero, aleurode du cocotier
Role	: Pest

### Signs & Symptoms

CAB International (1999)

*Aleurodicus destructor* almost exclusively colonizes the leaves of its host plants. After the adults oviposit, the young larvae insert their mouth stylets and settle on the leaves. On infested leaves, the occurrence of *A.destructor* is seen by the dense tangle of white wax filaments that are abundantly secreted by the nymphs (through dorsal compound pores). Moreover, spots of sticky and transparent honeydew appear in the leaf areas where individuals of *A. destructor* occur, and these spots soon become covered in black sooty mold. In cases of heavy infestations, honeydew may cover the whole aerial part of the plant (leaves, stems and fruits) and this may lead to the plants acquiring an almost completely black appearance.

## Morphology

CAB International (2001)

**Eggs** are about 0.31 mm long, elongate in shape, and yellow to brownish, dusted with powdered wax. The stalk is short, bearing the egg in a prostrate position on the leaf.

**Nymph:** Fourth-instar nymph (pupal case)

**Pupa:** The pupal case is yellowish to brownish, sub-elliptical to ovate in shape, sometimes with a narrowed cephalad, 1.3 - 1.5 mm long and 0.8 - 1.0 mm wide, covered by a copious secretion of white wax. On infested leaves, specimens of *A. destructor* may be completely hidden by wax. The wax rods, emerging from compound pores, are unusually long, attaining in more perfect specimens a length of 12 - 15 mm and are generally broken and intermingled with bands or plates of wax from the marginal tubes. The subdorsum has wax-producing compound pores; one cephalic (smaller than the other ones) and six abdominal pairs. The latter ones are similar in size (up to 90 µm in diameter). Only scattered tiny pores, without a submarginal zone of wide-rimmed pores punctuate the remainder of the dorsal surface. A vasiform orifice is sub-cordate, about as wide as it is long. The operculum is sub-rectangular, about twice as wide as it is long. The lingula is large, tongue-shaped, and extends beyond the posterior margin of the vasiform orifice and bears four setae, two of which are much reduced. This is the stage used for identification purposes.

**Adult:** The vertex is rounded. The antennae have seven segments, of which the third is the longest. Forewings have veins R1, Rs and M present, sometimes with an indication of the Cu. Legs have the paronychium represented by a large spine. Male claspers are long and narrow and the penis is recurved and short.

## Biology & Ecology

CAB International (2001)

The pest attacks its hosts during the vegetative growing stage, flowering stage, fruiting stage and also in post-harvest situations.

Fruits/pods, inflorescence, leaves, and stems.

### Life cycle

*A. destructor* is usually a polyvoltine species, having continuous cycles throughout the year, at least where conditions are optimal and host plants are available.

## Dispersal/vectors

L.A. Mound (1978)

Dispersal is mainly achieved by the winged adult with the wind assisting dispersal over longer distances.

## Management

CAB International (2001)

### Biological Control

Biological control plays a key role in achieving lasting control of *A. destructor*. Chemical applications, which usually ensure only a temporary suppression, followed by a

resurgence of the pest, should be considered only in cases of heavy infestations or when eradication of the insect from a newly colonized area is attempted.

### Chemical Control

The use of oil emulsions containing organophosphorus insecticides may be considered. Particular attention should be paid to carefully treat the upper and lower surfaces of leaves.

### Inspection Procedures

The leaves, and especially their undersides, must be inspected for the characteristic waxy masses that indicate the occurrence of a nymphal colony. Sooty mold and honeydew coat surfaces below the colony.

### Natural Enemies

The natural enemies of *A. destructor* are poorly known. Neuroptera (*Chrysopa* sp.), Coccinellidae (*Scymnus* sp.) and Syrphidae (*Baccha* sp.) are predators of *A. destructor* (Costa Lima, 1968). The chalcid wasp, *Coccophagus* sp. is a parasitoid of *A. destructor* (Sorauer, 1956).

### Pest Significance and Phytosanitary Risk

*Aleurodicus destructor* is an occasional pest in tropical Australia and is usually considered as a quarantine pest. Its spread over the tropics should however, be limited. Quarantine authorities in Europe (for example, UK) have occasionally intercepted it, but it has not become established.

### Host Notes

L. A. Mound (1978)

The host range of *A. destructor* is narrower than that of *A. cocois* or *A. disperses*. *A. destructor* is most likely to be encountered on palms. The primary hosts are *Cocos nucifera* (coconut) and *Cicca acida* (star gooseberry), while the secondary hosts are *Annona squamosa* (sugar apple), *Cinnamomum*, *Phyllanthus acidus* (Otaheite-gooseberry), *Piper nigrum* (black pepper).

Wild hosts include *Acacia* (wattles), *Banksia*, *Ficus microcarpa* (Indian laurel tree).

### Distribution

CAB International (2001)

The subfamily Aleurodicinae is mostly Neotropical in distribution. However, *A. destructor* remains largely restricted to its native Austro-Oriental-Pacific zoogeographical region. It is present in Brazil, St Vincent & the Grenedines (EPPO, 1999).

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### Web Resources -

- <http://www.aciar.gov.au/publications/monographs/45/ch8.htm>
- [http://www.uog.edu/up/micronesica/indexes/subj\\_30.PDF](http://www.uog.edu/up/micronesica/indexes/subj_30.PDF)
- [http://www.spc.int/pps/biological\\_control.htm](http://www.spc.int/pps/biological_control.htm) - 21k -
- <http://www.extento.hawaii.edu/kbase/crop/crops/banana.htm>
- <http://pest.cabweb.org/PDF/BNI/Control/BNIRA59.pdf>