FOREST PEST SPECIES PROFILE

November 2007

Heteropsylla cubana Crawford, 1914

Other scientific names: *Heteropsylla incisa* (Sulc.)
Order and Family: Hemiptera: Psyllidae
Common names: leucaena psyllid

Heteropsylla cubana is a significant pest of *Leucaena leucocephala*, a tree grown extensively in community forestry and agroforestry ecosystems for fodder and fuelwood throughout the tropics, causing defoliation, wilting, dieback, and in some cases, tree death. It is native to Central and South America but has dramatically spread from its native range, across the Pacific Ocean to Asia and the Pacific and Africa in less than 10 years. In many countries where leucaena has been introduced it is now considered a highly invasive tree. As a result, *H. cubana* may be considered more of a biological control agent than a forest pest.

Infestation of the leucaena psyllid *Heteropsylla cubana* near Mombasa, Kenya (Photo: J.D. Ward, USDA Forest Service, Bugwood.org)

DISTRIBUTION

***Native*:** Central and South America
***Introduced*:**
Africa: Burundi (1992), Ethiopia (1993), Kenya (1992), Malawi (1994), Mauritius (1991), Mozambique (1993), Réunion (1991), Sudan (1994), Tanzania (1992), Uganda (1992), Zambia (1994)

Asia and the Pacific: Australia (1986), Bangladesh (1987), Cambodia (1986), China (1986), Cook Islands (1985), Fiji (1985), Guam (1985), India (1988), Indonesia (1986), Malaysia (1986), Myanmar (1986), Nepal (1987), New Caledonia (1985), Papua New Guinea (1985), Laos (1986), Philippines (1985), Singapore (1986), Solomon Islands (1985), Sri Lanka (1987)Tahiti (1985), Thailand (1986), Tonga (1985), Viet Nam (1986)

North America: US (1993)

IDENTIFICATION

Adult psyllids are aphid-like, approximately 2 mm in length, winged and light green to yellow in colour. If disturbed, they use stout legs to jump before taking flight. Nymphs are similar to adults in appearance except

they are smaller, wingless and remain on the plant if disturbed. They undergo five instars over 8-9 days (Moog, 1992). Eggs can be barely seen with the naked eye primarily on young terminal leaves; in large numbers they appear as orange-yellow masses.

HOSTS

Leucaena spp. in particular *Leucaena leucocephala*, but also *L. trichodes*, *L. pulverulenta*, *L. diversifolia*, *L. salvadorensis* (Nair, 2001); *Albizia* spp.; *Mimosa* spp.; *Samanea saman*

BIOLOGY

Females begin laying eggs 1-3 days after becoming adults (Moog, 1992). Eggs are laid on and between new leaves on young shoot tips and hatch in 2-3 days. The insect is most common on young growth where eggs, nymphs and adults often occur together (Hertel, 1998). The cycle from egg to adult takes 10-20 days. Psyllids prefer high relative humidity and temperatures in the 20s (ºC). Adults feed on young growth and occasionally older growth and flowers.

SYMPTOMS AND DAMAGE

Adults and nymphs suck the sap of the terminal leaves, buds and flowers of host plants which reduces flower and seed production and causes new shoots and foliage to become stunted and deformed rendering the foliage useless for fodder or human consumption. In addition, honeydew produced by the psyllids permits the growth of sooty moulds which prevents light from reaching the leaf surfaces thereby reducing photosynthesis and plant production. Repeated attacks cause wilting, defoliation, branch dieback or death of host trees (Hertel, 1998).

Leucaena psyllid (*Heteropsylla cubana*) damage, Kenya
(Photo: J.D. Ward, USDA Forest Service, Bugwood.org)

DISPERSAL AND INTRODUCTION PATHWAYS

The quick and impressive spread of leucaena psyllid, over large areas and regions has led to speculation that wind dispersal plays a major role as opposed to human-assisted dispersal (Ciesla, 1998).

CONTROL MEASURES

Measures aimed at controlling the leucaena psyllid have primarily concentrated on the development of resistant leucaena varieties and the use of biological control agents. Biological control agents for the leucaena psyllid include the predators, *Curinus coeruleus* and *Olla v-nigrum* (Coleoptera: Coccinellidae), and the parasitoids,

Psyllaephagus yaseeni (Hymenoptera: Encyrtidae) and *Tamarixia leucaenae* (Hymenoptera: Eupelmidae) (FAO, 1998).

References

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