# *Leptocybe invasa*

BLUE GUM CHALCID
HYMENOPTERA: EUPHOLIDAE

FOREST PEST SPECIES PROFILES
AUGUST 2012

## MAJOR PEST OF YOUNG EUCALYPT TREES AND SEEDLINGS.

Native to Queensland, Australia, *Leptocybe invasa* is currently spreading through Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, Near East and North America.

Adult *LEPTOCYBE INVASA* (Credit: Z. Mendel)

## DISTRIBUTION

***Native*:** Australia although its distribution there is not yet determined.

***Introduced*:**

**Africa**: Algeria (2000), Egypt (2001), Ethiopia (2002), Kenya (2002), Morocco (2001), Mozambique (2011), South Africa (2007), Tanzania (2005), Tunisia (2004), Uganda (2002), Zimbabwe (2007)

**Asia and the Pacific:** Cambodia, China (2007), India (2001), Lao PDR (2008), Thailand (2006), Viet Nam (2002)

**Europe:** France (Corsica 2004; Mainland 2005), Greece (2004), Italy (2000), Portugal (2005), Spain (2004), United Kingdom (2006)

**Latin America and the Caribbean:** Argentina (2009), Brazil (2007), Chile (2010)

**Near East:** Iran (2000), Iraq, Israel (2000), Jordan (2001), Lebanon, Syria (2001), Turkey (2001)

**North America:** USA (2008)

(*Source*: Wylie and Speight, 2012)

## IDENTIFICATION

The female chalcid is a small wasp, brown in colour with a slight to distinctive blue to green metallic shine (TPCP, 2005). The average length is 1.2 mm. With the exception of one record describing males in Turkey, only females of this species, which reproduce by parthenogenesis, have been observed. Larvae are minute, white and legless.

## HOSTS

The blue gum chalcid has a relatively narrow host range attacking eucalypt species (Mendel *et al*., 2004). Suitable host species include *Eucalyptus saligna*, *E. botryoides*, *E. bridgesiana*, *E. camaldulensis*, *E. cinerea*, *E. dunnii*, *E. globulus* ssp. *globulus*, *E. grandis*, *E. gunii*, *E. maidenii*, *E. nicholii*, *E. pulverulenta*, *E. robusta*, *E. rudis*, *E. saligna*, *E. tereticornis* and *E. viminalis, E. urophylla* and various clones and hybrids (Wylie and Speight, 2012).

## PATHWAYS

Adult wasps can spread very quickly by flight and wind currents. They can also be introduced into new areas through the movement of nursery stock and international flight traffic.

## SYMPTOMS AND DAMAGE

The developing larvae form bump-shaped galls on the leaf midribs, petioles and stems of new growth of young eucalypt trees, coppice and nursery seedlings. Severely attacked trees show leaf fall, gnarled appearance, loss of growth and vigour, stunted growth, lodging, dieback and eventually tree death (Mendel *et al*., 2004).

During outbreaks wasp pressure is quite intensive and all new growth may be damaged. While the impact of the wasp on the adult tree development is not yet clear, galls can be found on most leaves if the wasp occurs in large numbers (TPCP, 2005).

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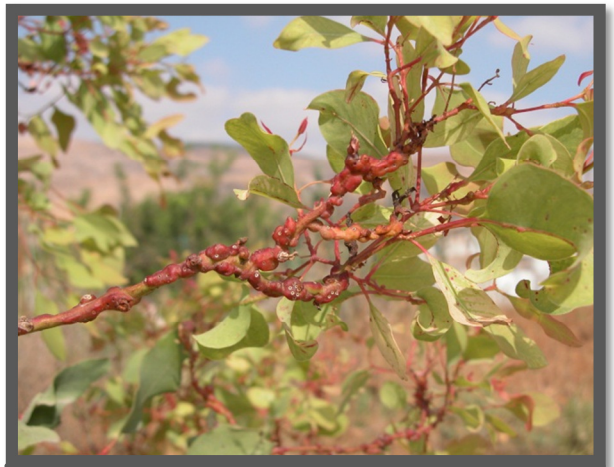
Young galls on eucalypt branches and leaf petioles (Credit: G. Allard)



*Leptocybe* damage: older galls with exit holes on eucalypt branches and leaf petioles (Credit: G. Allard)

## BIOLOGY

Attacks take place within 1-2 weeks of bud break. Eggs are laid in the epidermis of the upper sides of newly developed leaves, on both sides of the midrib, in the petioles and in the parenchyma of twigs (TPCP, 2005). White minute, legless larvae develop within the host plant.

Five stages of gall development have been recorded on *E. camaldulensis* in Israel (TPCP, 2005).

1. The first symptoms of cork tissue appearing at the egg insertion spot begin one to two weeks after oviposition. A small change in the morphology of the attacked tissue is evident, the cork scar becomes bigger and the section of the midrib that carries the eggs often changes in colour from green to pink.
2. Typical bump shape of the galls develops and they reach their maximum size of about 2.7 mm wide.
3. Green colour on the surface fades and tends to change to pink while retaining its typical gloss.
4. Glossiness of the gall surface is lost and colour changes to light or dark red depending on whether the galls are present on leaves or on stems.
5. When exposed to the sun, the galls change colour to light brown on leaves and red on stems. Emergence holes of adult wasps are evident.

Two to three overlapping generations per year have been observed in Iran, Israel and Turkey (Mendel *et al.*, 2004).

## CONTROL MEASURES

*Leptocybe invasa* on nursery stock is controlled by systemic insecticides. Research on possible biological control agents is ongoing in Australia and Israel. Several natural enemies of this pest were found in Australia including parasitic wasps from three genera *Aprostocetus*, *Quadrastichus* (Eulophidae) and *Megastigmus* (Torymidae).

***REFERENCES***

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