EUCALYPTUS GALL WASP, *Leptocybe invasa* FISHER & LASALLE (HYMENOPTERA: EULOPHIDAE) IN BRAZIL: NEW FOREST PEST REACHES THE NEW WORLD

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ABSTRACT

The recently described gall wasp, *Leptocybe invasa* Fisher & LaSalle (Hymenoptera: Eulophidae) has been reported in many countries cultivating *Eucalyptus.* It was detected in the New World , in the Brazilian states of Bahia, on hybrids of *Eucalyptus camaldulensis* x *E.grandis*, and São Paulo, on *E.grandis*.

Key words: gall wasp, *Eucalyptus, Leptocybe*

VESPA-DA-GALHA DO EUCALIPTO, *Leptocybe invasa* FISHER & LASALLE (HYMENOPTERA: EULOPHIDAE) NO BRASIL: NOVA PRAGA FLORESTAL CHEGA AO NOVO MUNDO

RESUMO

Descrita apenas recentemente, a vespa-da-galha *Leptocybe invasa* Fisher & LaSalle (Hymenoptera: Eulophidae) tem se espalhado rapidamente pelos países que cultivam eucalipto. Em 2008 chegou ao Novo Mundo, sendo detectada no Brasil, nos estados da Bahia, em plantações de híbridos de *Eucalyptus camaldulensis* x *E. grandis* e de São Paulo, em *E. grandis*.

Palavras-chave:vespa-da-galha, *Eucalyptus*, *Leptocybe*

Exotic eucalyptus pests have been detected in Brazilian eucalyptus plantations for many years. Burckhardt et al. (1999) mentioned the occurrence of three psyllid (Hemiptera: Psyllidae) species: *Blastopsylla occidentalis* Taylor (*Eucalyptus urophylla* and the hybrids of *E. urophylla* X *E. grandis*), *Ctenarytaina eucalypti* (Maskell) and *C. spatulata* Taylor (*Eucalyptus* spp.), between 1994 and 1997. Another psyllid species, *Glycaspis brimblecombei* Moore was reported by Santana et al. (2003) and

Wilcken et al. (2003) on *Eucalyptus* spp. in 2003. The eucalypt gall wasp *Epichrysocharis burwelli* Schauff (Hymenoptera: Eulophidae) was firstly reported on *Corymbia* (*Eucalyptus*) *citriodora* in the Brazilian state of Minas Gerais, in 2004 (Berti-Filho et al., 2004).

Another eucalypt gall wasp, *Leptocybe invasa* Fisher & La Salle (Hymenoptera: Eulophidae) is rapidly spreading in the countries where eucalyptus is cultivated. This note reports that this species has reached the New World and was detected in the Brazilian states of Bahia (hybrids of *Eucalyptus camaldulensis* X *E. grandis*) and São Paulo (*E. grandis*). According to Mendel et al. (2004), *L. invasa* causes extensive damage to plantations of *Eucalyptus camaldulensis* and correlated species in several countries of the Mediterranean Basin, Orient and Asia, particularly in nurseries and young plantings.

In late 2007, galls were found on the petioles and twigs of seedlings of different clones of *Eucalyptus camaldulensis* X *E. grandis* in a nursery of Northern Bahia. Galls were also found on trees of *E. camaldulensis* X *E. grandis* hybrids. Gall material was sent to the Laboratory of Forest Entomology of "Escola Superior de Agricultura Luiz de Queiroz/Universidade de São Paulo (ESALQ/USP)", in Piracicaba, State of São Paulo. The emerging wasps were mounted and deposited in the Collection of Entomophagous Insects "Oscar Monte" (IB-CBE) of the "Instituto Biológico", in Campinas, State of São Paulo.

The insect was identified as *Leptocybe invasa*, a tiny wasp (1.1 to 1.4 mm long), brown colored, with head and mesosoma shining metallic blue or green, gaster metallic green, whitish legs with darkened posterior femur (Figure 1). This species occurs in Europe (Spain, France, Greece, Italy, Portugal), Asia (India, Iran, Israel, Jordan, Syria, Thailand, Turkey, Vietnam), Africa (Algeria, Ethiopia, Kenya, Morocco, Tanzania, Uganda) (CABI/EPPO 2007) and Oceania (New Zealand) (FAO 2007).

Figure 1. *Leptocybe invasa* Fisher & LaSalle (Hymenoptera: Eulophidae) (Photo by V. A. Costa)

Mendel *et al.* (2004) listed the following host plants: *Eucalyptus botryoides, E. bridgesiana, E. camaldulensis, E. globulus, E. gunii, E. grandis, E. robusta, E. saligna, E. tereticornis, and E. viminalis,* being *E. camaldulensis* the preferred one. FAO (2007) also indicated *E. nicholii, E. rudis, E. pulverulenta*, and *E. cinerea*. On the other hand, *E. gomphocephala, E. occidentalis, E. torquata*, and *E. woodwardii* were not accepted by *L. invasa* females, whereas oviposition did occur on *E. erythrocorys* but gall development was paralyzed (Mendel *et al.*, 2004). In Bahia, the galls were observed on hybrids of *E. camaldulensis* X *E. grandis* while in São Paulo they were observed on *E. grandis*.

L. invasa reproduces by thelytokous parthenogenesis, although males may rarely be observed (Doganlar, 2005). The proovigenic females oviposit along the midrib of young leaves but also on the petioles and young stems. In Israel, the egg to adult period lasts 130 days in the Autumn, and two to three overlapping generations may occur (Mendel *et al.*, 2004). Adults live between 4 and 5 days when feeding on eucalyptus flowers and the galls may reach sizes from 2 to 4 mm (Mendel *et al.*, 2004; Hesami *et al.*, 2005).

Newly formed galls are green colored and gradually turn to rose on the leaves, and light red on the stems. Upon wasp emergence the leaf galls become light brown and the stem galls turn to reddish brown. The number of leaf galls ranges from 1 to 65, and the highest numbers are observed on fast growing plants. The attack of *L. invasa* begins at about two weeks after the first plant shootings and the galls provoke leaf malformation when located on the midribs and petioles and defoliation and dry shoots when occurring on the thinner stems (Mendel *et al.*, 2004).

In Bahia some clones (*E. camaldulensis* X *E. grandis*) presented lower levels of infestation. Together with the identification of such resistant or tolerant eucalyptus species or clones, we should consider the use of biological control. Two species of hymenopteran parasitoids of *L. invasa* were found in Australia, which is the center of origin of *L. invasa*. These species have already been imported into Israel, where they appear to have established (Kim et al., 2008). Therefore, the importation of such parasitoids for the control of this gall wasp into the Brazilian eucalyptus areas must be evaluated.

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