

## Comunicación

# Survey of *Eucalyptus* gall wasps (Hymenoptera: Eulophidae) in Portugal

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The occurrence of a new eucalyptus pest, *Leptocybe invasa* Fisher & LaSalle (Hymenoptera: Eulophidae), is reported from Portugal. The insect is a gall maker of several *Eucalyptus* species. The galls are induced on petiole and leaf mid rib. The wasp was observed for the first time in Portugal, in January of 2003. It has been detected in the south and eastern centre of the country. The wasp was identified based on specimens emerged in the laboratory from galls mostly collected from *E. camaldulensis*. However, galls were also observed in *E. globulus* and *E. teraticornis*.

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**Key words:** *Eucalyptus*, gall wasps, Eulophidae, *Leptocybe invasa*, Portugal.

## INTRODUCTION

Gall damage on *Eucalyptus* spp. caused by *Leptocybe invasa* Fisher & LaSalle (Hymenoptera: Eulophidae) (Figure 1), a wasp species recently described as a new genus after its discovery in East Mediterranean, in 2000, have been reported during the last five years in vast areas of the Palaeartic region, including many countries in the Middle East, Southern Europe and North Africa (e.g. MENDEL *et al.*, 2004). Another eulophid wasp *Ophelimus maskelli* Ashmead (Hymenoptera: Eulophidae) (Figure 2), named by mistake as *O. eucalypti* Gahan (e.g., VIGGIANI & NICOTINA, 2001), is also spreading in the Mediterranean basin and already reached the Iberian Peninsula

(SÁNCHEZ, 2003; VILLAR and FLINCH, 2004).

The spread of these native Australian species poses a serious threat to the forestry and the timber industry. While heavy galling by *L. invasa* degenerates young trees and affect tree growth of adult ones, infestation by *O. maskelli* leads to severe defoliation damage induced by the gall formation which can in severe cases lead to tree death (e.g. MENDEL *et al.*, 2004, PROTASOV *et al.* 2005).

In 2003, we detected for the first time the presence of *L. invasa* in Portugal. Owing to the economic importance and the environmental significance of the planted eucalyptus forest in Portugal, a survey was carried out aiming at sketching the current distribution in the region of the gall wasps.



Figure 1. Adult of *Leptocybe invasa*.



Figure 2. Adult of *Ophelimus maskelli*.

The results are presented in this paper.

## MATERIAL AND METHODS

Indications of the presence of *Eucalyptus* gall wasps were investigated by searching for the typical bump-shaped galls on the leaf midribs, petioles and stems induced by *L. invasa* (Figures 3 and 4) and for leaves with numerous small galls, visible on both sides of the leaf induced by *O. maskelli* (Figure 5). Visual surveys of *Eucalyptus* plantations started in 2003. In 2004, more intensive surveys were carried, first in eastern Alentejo and Algarve, and then extended to other regions. *Eucalyptus* trees with gall formations were identified. For further identification small branches with galls were brought

to the laboratory and kept in sealed plastic cages at room temperature until emergence of the wasps. The survey continues in 2005 with the emphasis is put on the presence of *O. maskelli*.

## RESULTS AND DISCUSSION

Galls similar to the ones formed by *L. invasa* were detected for the first time in January 2003 in the northeast of Alentejo near the Spain border. Galling tissues were first observed on *E. camaldulensis* planted along roadsides. Adult wasps emerged in the laboratory from the galling materials collected in the field were identified as *L. invasa*. Actually, the area of distribution of *L. invasa* in Portugal covers almost all South



Figure 3. Gall formations on petiole and on main leaf rib by *Eucalyptus camaldulensis*



Figure 4. Damage in *Eucalyptus camaldulensis* caused by *Leptocybe invasa*.



Figure 5. Damage in *Eucalyptus* sp. caused by *Ophelinus maskelli*.

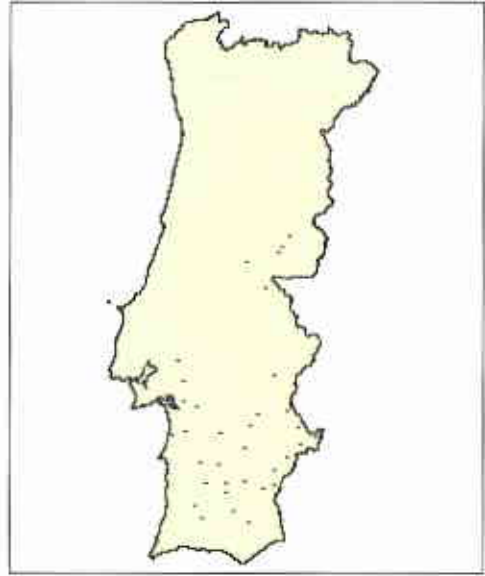


Figure 6. Sites in Portugal where gall damage by *L. invasa* was observed.

and part of the centre of Portugal, c.a. latitude 40° N (Figure 6).

*L. invasa* was mostly found in *F. camaldulensis* (Figure 4). However, in 2005 we could further observe symptoms of its presence in *E. globulus*, in trees near the roadside, and both in *E. globulus* and *E. tereticornis* in nursery seedlings. These findings are in agreement with previous works where these *Eucalyptus* species as well as other species from the same sections, *Maidenaria*

and *Exsertaria*, respectively, were assigned as suitable hosts for *L. invasa* (MENDEL *et al.*, 2004).

So far, *O. maskelli* was not found in our survey. However, since this species was previously reported in Spain (SÁNCHEZ, 2003; VILLAR AND FLINCH, 2004) there is no doubt that it will soon appear. The coexistence of the two species on the same tree as observed in other regions (Figure 7) will intensify the damage to *Eucalyptus* plantations.



Figure 7. Heavily galled *Eucalyptus* sp. by both *Leptocybe invasa* (a) and *Ophelinus maskelli* (b).

## ABSTRACT

BRANCO M., J. C. FRANCO, C. VALENTE, Z. MENDEL. 2006. Pesquisa de avispas produtoras de agallas (Hymenoptera: Eulophidae) en *Eucalyptus* en Portugal. *Bol. San. Veg. Plagas*, **32**: 199-202.

Se registra la aparición en Portugal de una nueva plaga del eucalipto, *Leptocybe invasa* Fisher & LaSalle (Hymenoptera: Eulophidae). El insecto es un formador de agallas en varias especies de eucalipto. Las agallas son inducidas en el peciolo y nervio medio de la hoja. La avispa fué observada por primera vez en Portugal en Enero de 2003. Ha sido detectada en el sur y en el área centro-oriental del país. La avispa se ha identificado en base a especímenes salidos en laboratorio de agallas recogidas en *E. camaldulensis*. Sin embargo, también se observaron agallas en *E. globulus* y *E. teraticornis*.

**Palabras clave:** *Eucalyptus*, avispas productoras de agallas, Eulophidae, *Leptocybe invasa*, Portugal.

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