

**Biology, Damage and Parasitoids of *Eucalyptus* Gall Wasp, *Leptocybe invasa* Infesting *Eucalyptus camaldulensis* in Maragamuwa Plantation****Udagedara U.K.S.K. and Karunaratne W.A.I.P.\***

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**Abstract**

*Leptocybe invasa* has been recorded few years back in Sri Lanka from *Eucalyptus camaldulensis* plantation in Maragamuwa, where no natural enemies were reported. Recent observations revealed a decreased gall infestation and hence, the present study was conducted to investigate the biology of *L. invasa*, its damage to *E. camaldulensis* and the presence of any natural enemies to control the infestation.

The present study was conducted from June 2011 to June 2012 in an *E. camaldulensis* plantation in Maragamuwa. Two sites (250 m<sup>2</sup> each) each with 25 coppicing *E. camaldulensis* trees were selected. In one site, life cycle duration, developmental stages and activity pattern of the gall wasp was studied during day time from 8.00 am to 3.00 pm. The abundance of the gall wasps was monitored using five sticky traps hung at each coppicing tree. In the other site, damage done to different stages of coppices by gall wasps was assessed after cutting down all the existing coppices and allowing new coppices to develop. Damage index was calculated using percentage leaves affected in each coppice. Effect of rainfall and temperature on severity of damage was investigated. The emerging wasps from galled leaves held in ventilated polythene bags in the laboratory were observed for the presence of parasitoids and percent parasitization was calculated.

*L. invasa* was found to be the only eucalyptus gall wasp attacking Maragamuwa eucalyptus plantation during the present study period. Life cycle duration of *L. invasa* was 132 days on average. Five stages of gall development on midribs and petioles of *E. camaldulensis* leaves were observed. Adult *L. invasa* was more active in the morning. There was no significant difference in the abundance of *L. invasa* between the two seasons although they were more abundant in the wet season. Damage index was low throughout the study period. A clear pattern in colour change from red to green in young leaves of *E. camaldulensis* coppices was observed from the initial stage. *L. invasa* attacked the coppices of *E. camaldulensis* after they reach their typical green colour and damage increased with the development of coppices. However, damage did not further increase after coppice maturity. A total of four different parasitoid wasps, of which only *Megastigmus* could be identified, were reared from leaf and shoot galls of *E. camaldulensis*. *Megastigmus* was the most abundant and mean percent parasitization was  $67.00 \pm 8.00$ . Natural enemies of *L. invasa* might have contributed to the decreased gall infestation in coppices of *E. camaldulensis* observed recently in Maragamuwa plantation.

**Keywords:** *Leptocybe invasa*, *Eucalyptus camaldulensis*, Maragamuwa, parasitoids