

Successful management of *Leptocybe invasa* galls on Eucalyptus through Classical Biological Control in India

Eucalyptus gall wasp *Leptocybe invasa* Fisher and La Salle (Hymenoptera: Eulophidae) an invasive insect was found in severe form in 2007 and 2008. A small wasp measuring 1.1-1.4mm, gall forming insect which attacks the new shoots and makes galls in the plant resulting in stunted growth of the seedlings and causing severe reduction in the growth of the plant. This has its origin from Australia and after its invasion, has started damaging large areas of Eucalyptus plantation in India. First reported in Tamil Nadu, the damage has now spread to the neighbouring States of Kerala, Karnataka and Andhra Pradesh. According to latest reports, it has also invaded northern, western & eastern India. The tiny *L. invasa* produces galls on leaf mid-ribs petioles and shoot tip which slowly damage and the shoots dry up. Due to this the normal growth is affected. If it continues uncontrolled then there would be heavy loss of wood production of Eucalyptus and leads to an economic loss. It had inflicted severe damages to the paper and pulp industry resulting in reduced supply of raw material. The species is thelytokous in nature and males are very rare or absent. The total life cycle is completed in 132-140 days. The larval stages are completed within the gall and are not amenable for routine pesticides used in agriculture. Biological control of the pest was attempted through introduction of a co evolved species *Quadrastichus mendeli* which was introduced to India in November 2008 for the management of the pest after adhering to the quarantine formalities. *Quadrastichus mendeli* has established in various parts of the country, and along with *Megstigmus* sp. is playing an important role in the suppression of the gall insect. *Q. mendeli* is able to complete its lifecycle within 40- 45 days. The Parasitoid has given substantial control of 66-80% eucalyptus gall wasps in the released locations in the preliminary studies at Bangalore, Hessaragatta and at Malur area in Karnataka. The parasitoids have been supplied to various member mills of IPMA (Indian Paper manufacturers Association) for establishment and distribution after getting limited area release permit from Plant Protection and Quarantine Government of India. Presently the parasitoid has checked the menace of eucalyptus gall wasps in the country.