IPM IN PRACTICE: LEPTOCYBE


1

DAMAGE-CAUSING SPECIES

- *Leptocybe invasa (L.invasa)*
- Blue gum chalcid wasp or *Eucalyptus* gall wasp
- Origin - Australia

BIOCONTROL AGENT

- *Selitrichodes neseri (S.neseri)*
- Parasitoid wasp
- Origin - Australia


2

DAMAGE CAUSED

- *L.invasa* inserts its eggs into the new growth of leaves, petioles, stems of *Eucalyptus* at all ages including nursery stock.
- As the tree grows and the insect develops, the affected area becomes deformed. This \ mass of tissue becomes the gall.
- The gall provides the developing insects with nutrition - to the detriment of the tree.
- Each gall can have multiple chambers, with each chamber housing a developing insect.

High infestations will stunt, or even kill, trees.


3

MODE OF ACTION

- *S.neseri* inserts its ovipositor into a *L.invasa* gall depositing its eggs. The parasitoid develops on late larvae, pupae and immature adults.

Shows great potential as a biological control agent due to its host specificity, relatively short developmental time and ability to utilise a range of gall ages.

- Research is currently underway into two species of *Megastigmus* wasps reported from *L. invasa* galls.

ALTERNATIVE CONTROL MECHANISMS

In the plantation

Biological control

Planting Eucalyptus material resistant to *L.invasa* is an effective option as variation in susceptibility has been shown between genotypes.

No chemical control alternative

The nature of *L.invasa* and its mode of action makes pesticide application impossible on such a large scale.

In the nursery

Imidacloprid - Assist young plants to establish without infestation.

WHY BIOCONTROL?

- For the time being biocontol of *L.invasa* using *S.neseri* offers the most effective, sustainable and long-term solution.
- Research is being conducted into the life cycles of other potential biocontrol agents and whether they would parasitise *S.neseri* too.
- Biocontrol agent, *Quadristichus mendeli*, has also been reported in South Africa (unintentional introduction).

RELEASE INFORMATION

- Live *L.invasa* galls need to be present.
- Vials of biocontrol are couriered to the forester; these are opened in areas where galls are present and taped to trees with galls. Records of the release date, GPS co-ordinates, farm name, compartment number and the tree species/clone where the release is being conducted, need to be taken and sent to TPCP for their database.

Monitoring:

- Country-wide monitoring is conducted by South African *L.invasa* National Monitoring Programme, a collaboration between the forest sector, TPCP and Institute for Commerical Forestry Research IFCR.

SUPPLIER

Tree Protection Co-operative Programme (TPCP) of the Forestry and Agricultural Biotechnology Institute at the University of Pretoria.

www.fabinet.up.ac.za/index.php/tpcp

LINKS

www.icfr.ukzn.ac.za/publications
www.fabinet.up.ac.za/publications
www.waspweb.org

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