



Hortus Technical Services

Hortus Technical Services is an independent agronomy company dedicated to providing efficient and cost-effective integrated pest management strategies to growers.

Due to overuse or inappropriate use of agricultural chemical the incidences of chemical resistance among pests and diseases are steadily increasing and are now common place . As the few remaining effective chemicals are used more frequently, so the risks of resistance developing to these remaining chemicals increases.

As a result, more growers are turning to alternative control options. The agronomists at Hortus are able to provide growers with a range of biological pest management options to better control pests using integrated pest management.

Hortus has a number of biological products available to growers for a wide array of pests, including:

- *Macadamia Nutborer*
- *Heliothis*
- *Silverleaf Whitefly*
- *Thrips*
- *Two-Spotted Mite*
- *Red Scale*
- *Aphids*
- *Queensland Fruit Fly*





MAC-TRIX

(*Trichogrammatoidea cryptophlebiae*)

Control of Macadamia Nutborer

MAC-TRIX are tiny parasitic wasps (<0.5mm in length) that lay their eggs into the eggs of Macadamia Nutborer. This parasitism kills the immature Nutborer in its egg before it can hatch.



Healthy Macadamia Nutborer Egg



Parasitised Macadamia Nutborer Egg

BENEFITS

- MAC-TRIX wasps are highly-focused predators, intent on finding and parasitising Macadamia Nutborer eggs; levels of egg parasitism can exceed 80%.
- Reduced need for pesticide sprays, possibly even removing the necessity entirely.
- Some of the wasp population may continue over the winter period, reducing the Nutborer population before the next season begins.

DELIVERY

MAC-TRIX are dispatched on pre-perforated A4 sized card sheets that contain parasitised Macadamia Nutborer eggs. Each A4 sheet contains about 1000 MAC-TRIX wasps.

The wasps are dispatched 24-48 hours prior to hatching and emerging.

APPLICATION

Actual release rates and timing are determined through monitoring.

In a medium pressure situation the recommended release rate is 1 000 wasps (1x A4 sheet) per hectare released weekly for 6-10 weeks.

The MAC-TRIX wasps are delivered on A4 sized sheets. These sheets are then broken up into 24 individual strips along perforations ready for placing into the block. Each strip contains 50-100 wasps and a typical release rate is 12-24 strips per hectare. In order to reduce the risk of losses (through predation from ants), the release strips should be placed in the paddock within the 24 hours before the wasps emerge. The release strips should be stapled to leaves at head height. The majority of the strips are placed in MNB hot spots as identified by monitoring.

MAC-TRIX should be applied over a period of 6-10 weeks to ensure a stable population of wasps can develop. If the wasps are applied between mid-November and mid-December (dependent on location) the Macadamia Nutborer eggs can be caught early, reducing their potential for damage.

Caution must be taken with insecticide and some fungicide applications prior to, and after MAX-TRIX releases.

INTERESTED?

Contact your local Hortus Technical Services for information concerning costs and distribution.

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