

PHEROMONE TRAP: THE FALL ARMYWORM

M2I TECHNOLOGY

- Unique patented process of pheromone micro-encapsulation
- 100% green and biodegradable
- New formats and innovative application methods
- Regulated and prolonged rate of pheromone release for greater efficiency
- Simplified storage at room temperature
- Long shelf life: 2½ years
- Compatible with different types of traps

USER GUIDE

M2i recommends: Frugiperda Pro Plus® syringe + Funnel trap

Trap setup: place the pheromone holder (cage) in the upper part of the trap. Put a drop of the product into the lower part. Snap the upper part of the trap into place. Empty the remaining content of the syringe into the pheromone holder. The moths are attracted by the sexual pheromone, enter the trap and are caught.

CHARACTERISTICS OF FRUGIPERDA PRO PLUS®

Type of product	Pheromone Dispenser
Usage	Monitoring
	Trap and Kill with BioTrap DDVP Cubes Permit Number: PER89169 (exp. 28/2/22)
Substance active	Z-9-tetradecen-1-yl acetate Z-11-hexadecen-1-yl acetate
Volume of formulation	0.5 mL
Indicative diffusion*	3 months
Targeted insect life-stage	Adult (moth)
Estimated radius of attraction/diffusion	Moths attracted on a radius of 10m

*for an average temperature of 30°C and in the absence of strong winds.

MONITORING SETUP

Detection period: from seedling to harvest (adapt and renew the pheromone dispenser according to the recommended diffusion time).

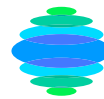
Trap location: hung approximately 1.5m above the crop.

Recommended density: 1-2 traps/ha

PEST MONITORING AND RECOMMENDATIONS

Trap follow-up frequency	Weekly
Recommended intervention threshold	On maize, if 5% of seedling plants are cut or 20% whorls of small plants (during the first 30 days) are infected.
Pest control methods	During the critical season and depending on trapping levels: it is possible to perform an additional insecticide and/or a biocontrol treatment according to the insect life stage. Refer to recommendations of registered products for plant protection https://apvma.gov.au/ and/or to your technical advisor.
Possible preventive measures	Deep tillage, destruction of crop residues and infected plants, crop rotation, weeding.





PHEROMONE TRAP: THE FALL ARMYWORM

THE FALL ARMYWORM (SPODOPTERA FRUGIPERDA)

Pest life-stage: Caterpillar

Order: Lepidoptera

The Fall Armyworm European is a nocturnal moth native to the Americas defined as an invasive and a quarantine species. Adults measure 13-17 mm. In this species, there is sexual dimorphism in the adult stage. Male are shaded gray and brown with forewings that have 3 distinct and successive spots: one orange-beige, one brown and one white, whereas females are uniform grayish brown. Damages are caused directly by larval depredation of the stem, the leaves and other aerial parts (cobs, grains), and indirectly by the development of microorganisms due to larval feces and plant injuries. This species can induce the loss of the entire harvest.

Spodoptera frugiperda generate between 4 and 6 generations per year, depending on the climate and the latitude. Female lay several layers of eggs (100-200 eggs) on the lower surface of the leaf. A female can lay up to 2000 eggs. After larval development, pupation takes place in the ground from which the adults will emerge.

HOST PLANTS

The caterpillars of this species are highly polyphagous. They can feed on more than 350 plant species.

Common host crops in Australia include lucerne, barley, buckwheat, clover, cotton, maize, millet, peanut, sorghum, soybean, sugarcane, wheat, apple, grape, orange, papaya, peach, strawberry and a number of flowers, weeds and grasses.

DETECTION STRATEGY: MONITORING BY PHEROMONE

Pheromones are substances produced by insects which operate as a signal between individuals of a same species. There are different types of pheromones: alarm, aggregation, sexual... Monitoring with sexual pheromones is based on a lure placed inside a trap which mimics the substance produced by the female. Lure attracts males which are captured. This enables the detection of the pest's onset and the follow-up of its infestation level. Monitoring also helps decision-making (to launch a curative intervention) and/or measuring the efficiency of a treatment.

BENEFITS

This method is efficient, selective and harmless for fauna, flora, operators and local residents. It does not generate residues, inputs or resistance mechanisms.



Fall Armyworm moth. Image: Andy Reago & Chrissy McClarren



Sugarcane



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