

Droplet placement and density

- For maximum results the product must be applied at the beginning of the first generation of F.C.M. or at first observation.
- For F.C.M. control at the end of the citrus season, the product must be applied 16-20 weeks before the specific harvest date of the orchard.
- Apply the **Last Call™ F.C.M.** product according to the guidelines below.
- Re-apply the product within 28 days after last application with a maximum of 5 applications per season.
- It is of critical importance to apply a registered insecticide at 16 and 8 weeks before harvest on the outside 6 rows to control any larvae and eggs laid.

| Population pressure | No. of trees per hectare | No. of droplets per tree |
|---------------------|--------------------------|--------------------------|
| High pressure | 1 000 | 3 |
| | 600 | 5 |
| | 400 | 6 |
| Low pressure | 1 000 | 2 |
| | 600 | 3 |
| | 400 | 5 |

Timing and intervals

- For best results **Last Call™ F.C.M.** must be applied at the beginning of the first generation of F.C.M. or at first observation and with the use of Insect Science™ Yellow Delta Trap and F.C.M. Pherolure.
- For best results **Last Call™ F.C.M.** should be applied 16-20 weeks before harvesting and re-applied every 28 days with a maximum of 5 applications in a season.



Applying LAST CALL™ F.C.M.

The product is applied by hand using a dispenser pre-calibrated to deliver a 50 micro-litre droplet. The disposable dispenser includes the trigger device and the disposable cartridge containing the ready-to-use **Last Call™ F.C.M.** formulation. Prepare the dispenser using the following steps:

- Connect the trigger mechanism and the product containing cylinder. Push the 2 parts together to break the seal. The 2 parts are now permanently coupled.
- With the thumb, push the plunger until a drop of grease appears at the tip of the nozzle. The applicator is now ready for use.
- One drop of 5 micro-litres will appear for each squeeze of the trigger. Apply droplet in the TOP THIRD of the tree for maximum biological activity.
- Use the **Insect Science™** extension pole to apply the product to older trees.
- Distribute droplets evenly throughout the area to be treated.
- Droplets should have a spherical shape for optimum biological activity.

Active ingredients

- Permethrin(Synthetic Pyrethoid) – 60 g/kg
- (E)-7-dodecenyl acetate
- (E)-8-dodecenyl acetate
- (Z)-8-dodecenyl acetate – 4 g/kg

Registration Number

Reg No L7875, Act 36 of 1947

Precautions

- Wear suitable protective clothing during handling (overalls and impermeable gloves).
- Avoid contact with skin, eyes or clothing. In case of accidental contamination, stains are to be washed from the skin using a mild detergent.
- Do not eat, drink or smoke while working with the product and wash hands and face thoroughly afterwards.
- Change contaminated clothing immediately and wash exposed skin with soap and water.
- After work, change clothing and protective clothing and wash before re-use.
- After application clean the application device thoroughly.
- Dispose of empty containers in a landfill site or incinerate. If incinerated, avoid inhalation of the smoke.
- Do not re-use empty containers for any other purpose.
- Do not contaminate drinking water, food or animal feed.



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Pest specific

Easy to apply

Hinders chemical resistance

Rain fast and no chemical drift

No damage to the environment

Up to 6 week control from 1 application

"Dead Males Don't Mate"™

Introduction

False Codling Moth (F.C.M.) has been known as a pest to citrus since the beginning of the century. The moth has now established itself in many other crops and has become a serious problem to many growers.

Last Call™ F.C.M. is an innovative blend of a sex pheromone and insecticide that calls the male False Codling Moth to its doom.

Last Call™ F.C.M. is a clear-like droplet that contains the sex pheromone of the female F.C.M. that lures and attracts the male F.C.M. and a dose of permethrin insecticide which kills them after they have 'mated' with the alluring substance.

False Codling Moth life cycle

Total development period is approximately 2,5 - 4 months in winter and 1,5 - 2 months in summer with a 5-6 defined overlapping generations per year.

Egg

The egg is flat, oval and translucent with a shiny reticulate sculpture. It measures approximately 1mm in diameter. Up to 65 eggs have been observed on a single fruit. Hatching occurs at all times of the day.

Larva

The larva is at first creamy-white with a dark brownish-black head capsule. With age the body takes on a characteristic pinkish-red colour. The fully grown larva is 15-20mm in length.

Pupa

The insect pupates in loose soil, beneath surface debris, or in cracks in the soil. It constructs a silken cocoon incorporating trash and soil particles.

Adult

The small moth is overall dark brown to grey with a wingspan of 16-20mm. The forewings are mottled while the hindwings are paler, more even in colour and fringed with hairs.



How does LAST CALL™ F.C.M work?

Insect sex pheromones are selective and valuable pest management tools in techniques ranging from monitoring of populations to disruption of the pheromone mediated mating sequence. Recently, an attract-and-kill system combining the sex pheromones of insects with the insecticide permethrin has been developed.

The technology of attract and kill works on the basis of suppression of the male moth population. After emerging, male moths are inevitably attracted to the small droplet, with which they attempt to mate; any contact with the product is fatal. The droplet is a combination of a small amount of insecticide with a synthetic insect pheromone in a patented UV resistant carrier.

The carrier provides a slow, uniform release of the powerful pheromone. By the elimination of males, and a resulting reduction in the number of mated females, one can reduce the egg lay, the build up of the generation and crop damage. The product provides an environmentally sound and effective means of insect control by combining the best aspects of two separate technologies: traditional chemical insecticides and pheromone attraction.

The combination of these technologies provides a greater solution for growers, consumers and the environment.

The graph below shows how effective **Last Call™ F.C.M.** is when applied at the right time with the correct dosage.



Performance

F.C.M. is a phytosanitary pest and is one of the biggest concerns for citrus growers especially for the export market.

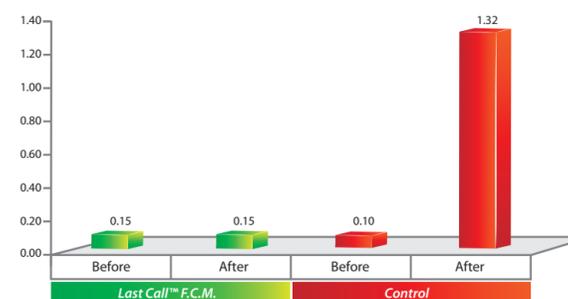
F.C.M. males are attracted to the female sex pheromone. **Insect Science™ Yellow Delta Traps** and F.C.M. PheroLures are used to monitor the insect population. From the number of insects caught weekly one can determine the timing of application. The graph below indicates the reduction of fruit damage after **Last Call™ F.C.M.** applications.

Summary of field performance

The effect of the treatment is not immediate, as there is a carry-over of females fertilized by many males before the **Last Call™ F.C.M.** treatment instituted. The same can be said for fruit that is already infected, where eggs were deposited after treatment commenced, there will still be a certain amount of fruit drop. This period can last up to six weeks after treatment has started due to the carry-over effect.

During the period of the application of **Last Call™ F.C.M.** the carry-over ended with excellent results in all our trials. The full effect of **Last Call™ F.C.M.** can be well observed after the second application, when the F.C.M. trap counts noticeably decline while in the control block the numbers continue to escalate.

Last Call™ F.C.M. damage / tree before and after application vs control



Effect of **Last Call™ F.C.M.** application on F.C.M. populations

