

SPLAT CLM™ Citrus Leafminer Kit (SP203-K1)

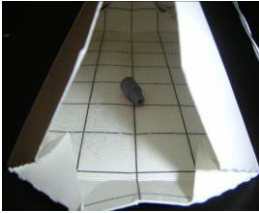




Instruction and Information Sheet

Compared to conventional insecticide sprays, SPLAT CLM mating disruption is species specific to the citrus leafminer (CLM), and it has no effect on non-target or beneficial insects, though it is more knowledge intensive to learn. Mating disruption results can vary depending on many factors such as plot size, the infestation level in the vicinity, presence of host plants in the vicinity and whether these host plants are well controlled for CLM, and whether SPLAT CLM is appropriately used. In order to maximize the success of your SPLAT CLM application, please be sure to read and understand all of the following documents in the order shown, before using the product.

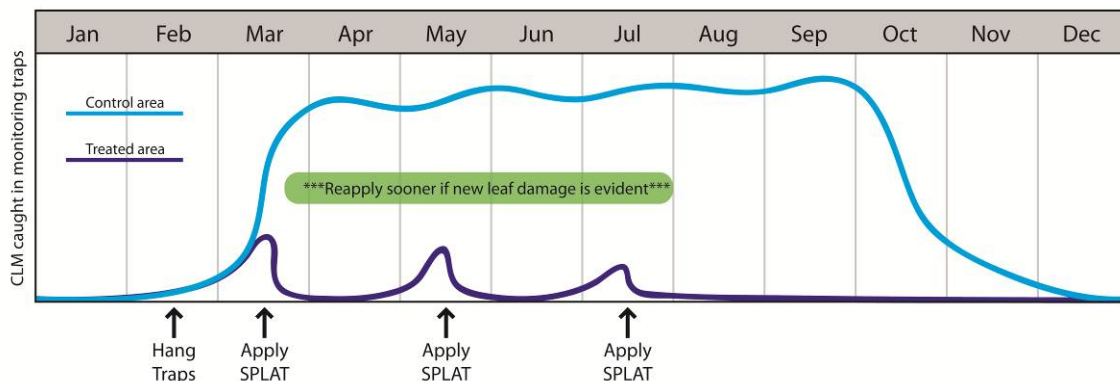
1. SPLAT User's Guide to Mating Disruption and Attract & Kill Formulations
2. SPLAT CLM Citrus Leafminer Kit Instruction and Information sheet (this document)
3. SPLAT CLM EPA Label for Residential Use

SPLAT CLM APPLICATION OUTLINE

(Refer to the following pages for step by step instructions)

				
<p style="text-align: center;">1</p> <p>Assemble monitoring trap by placing pheromone lure (ISCALure CLM) in delta trap.</p>	<p style="text-align: center;">2</p> <p>Hang monitoring trap in the treatment area when the first flush of leaf growth in the season is detected.</p>	<p style="text-align: center;">3</p> <p>Once the first CLM is caught in the monitoring trap, apply SPLAT CLM as spherical dollops, at 1 gram per dollop.</p>	<p style="text-align: center;">4</p> <p>Hang an additional monitoring trap (with pheromone lure) outside the treatment area as a comparison (or "control").</p>	<p style="text-align: center;">5</p> <p>Reapply SPLAT CLM when monitoring trap captures equal 25% of control trap captures, or when new leaf damage is evident.</p>

SUGGESTED SPLAT CLM APPLICATION SCHEDULE



SPLAT CLM Step by step instructions

ASSEMBLING THE TRAP



STEP 1

Pull the paper delta trap apart so that the glue inside is exposed and the base sits flat.



STEP 2

Fold corners inside along the perforations.



STEP 3

Place ISCALure CLM (the pheromone lure) on its side in the center of the sticky surface. Typically, one ISCALure CLM is used with one delta trap.



STEP 4

Fold up the edges of the trap along the fold lines so that there is only the small opening in the center.



STEP 5

Punch out the hole at the top of the trap and thread the metal hanger through the hole. Loop it around once so that it stays in place.



STEP 6

Bend the other end of the metal hanger into a hook and hang the completed monitoring trap.

SPLAT CLM APPLICATION



STEP 1

Remove the cap of the syringe.



STEP 2

Note the markings on the side of the syringe.



STEP 3

Choose a section of branch or leaf to apply. Place nozzle of syringe directly on the plant or non-absorbent surface.



STEP 4

Depress plunger to begin flow of SPLAT CLM. Maintain contact between nozzle and surface during flow in order to produce a single, 3-dimensional dollop.



STEP 5

When 1 gram of SPLAT CLM has been dispensed, pull syringe away and replace cap.



STEP 6

Application is complete!

SPLAT CLM™ Background information

The citrus leafminer (CLM) *Phyllocnistis citrella* is a damaging pest of citrus because the larvae feed by creating shallow tunnels, referred to as mines, in young leaves of citrus plants, ultimately killing the leaves and defoliating the plants. Though CLM damages a variety of citrus plants, grapefruit, lemon, lime and orange appear to be most susceptible to damage. Since 2001, CLM has infested citrus growing regions of the U.S., including California and Florida. In areas where CLM is seasonal (not year round), adult CLM overwinter within canopies of the citrus trees, and overwintering females typically begin to oviposit eggs in leaves around mid-March. Leaf damage is caused when the larvae emerge from the eggs and feed on the leaves. In warmer climates, CLM may be active year round, and so overwintering does not occur. The leaf damage also increases the incidence of infections from citrus diseases such as citrus canker.

ISCA Technologies introduces SPLAT CLM, for the control of the citrus leafminer, *Phyllocnistis citrella*. SPLAT is formulated with environmentally friendly, food grade ingredients together with species specific, naturally occurring CLM sex pheromone. SPLAT CLM controls CLM through the use of the mating disruption strategy. Each application is effective for 10 to 15 weeks in the field depending on environmental conditions. Because SPLAT CLM control is species specific, it will not have any effect on other insect species or organisms, such as beneficial insects or insect pollinators.

HOW SPLAT CLM WORKS

SPLAT CLM achieves control of the citrus leafminer by disrupting the mating behavior of CLM. The controlled release of the naturally occurring CLM sex pheromone from SPLAT CLM confuses the male CLMs, and disrupts their ability to locate female CLMs for mating. For maximum effectiveness, SPLAT CLM applications should take place when CLM is known to be active, as can be determined by monitoring traps.

HOW ISCALURE CLM DELTA TRAPS WORK WITH SPLAT CLM

Delta traps baited with ISCALure CLM pheromone lures (monitoring traps) are used to determine the activity level of CLM. Monitoring traps should be deployed early in the Spring: in late February or early March to detect the presence of CLM (see chart above). When the monitoring trap catches the first CLM (typically sometime in late March or early April), apply SPLAT CLM as described below. When SPLAT CLM is providing adequate control it will reduce the number of CLM caught in monitoring traps. *It is normal and expected to see significantly less CLM in the monitoring traps placed in the treatment area when using SPLAT CLM.* When the trap catch begins to increase again (typically 10 to 15 weeks after SPLAT CLM application depending on environmental conditions), it is time to reapply SPLAT CLM.

To evaluate and compare the effectiveness of SPLAT CLM, it is beneficial to monitor the natural population of CLM outside your treatment area. One or two monitoring traps should be placed outside the treatment area, more than 100 feet away from the nearest SPLAT CLM dollop. If CLM are active in your area, the monitoring trap outside the treatment area (control trap) should capture more CLM than the monitoring trap inside the treatment area. The difference in the monitoring trap catch between the traps inside and outside the treatment area provides a gauge of the SPLAT CLM mating disruption effect. The above shown chart “Suggested SPLAT CLM Application Schedule” provides a suggested treatment schedule. The treatment schedule may need to be adjusted based on factors such as the climate and the level of CLM pressure in your location. For example, CLM may be active year round and may not overwinter in warmer climates, in which case the treatment schedule should be extended to the entire year.

TRAP PLACEMENT

1. Infestations of leaves are lowest in the winter and early spring, increasing significantly through the late spring, summer and early fall. The timing of monitoring trap placement should be based on the seasonal phenology of CLM populations at your location. If you are unsure about the seasonal phenology of CLM at your location, hang monitoring traps from March to November for the first year, and make weekly counts of the CLM caught in your monitoring trap to understand the seasonal phenology. The bottom panel of each paper delta trap has a printed chart that you can use to record CLM counts. Performing weekly CLM counts can also provide you with indications of the effectiveness of your CLM control measures.

- Monitoring traps are hung at shoulder height on the south side of the tree in winter and on the north side in the summer. Place the monitoring trap on the inside of the canopy in trees, in open shade, with 8-10 inches of clearance from foliage at the edge of the grove.
- Each ISCALure CLM pheromone lure will remain effective for up to 15 weeks depending on environmental conditions. Replace monitoring traps and lures after 15 weeks, or earlier if you notice that ISCALure CLM has lost its attractiveness. Discard used traps and lures in sealed trash bags.

SPLAT CLM PLACEMENT

- SPLAT CLM is supplied in a ready to use syringe with markings indicating the ideal SPLAT CLM dollop size of 1 gram per dollop.
- SPLAT CLM is applied directly to the plant, under the canopy, in an area that is not exposed to direct sunlight, out of the reach of children, pets or anything that may inadvertently dislodge the SPLAT CLM dollops. .
- The ideal SPLAT CLM dollop placement is on a secure branch, but SPLAT CLM dollops can also be applied to a large leaf or non-absorbent surface that will support the weight of the dollop.
- SPLAT CLM should be applied to produce a 3-dimensional round shape (dollop), like a marble. Flattened or stringy applications will have reduced longevity in the field.
- Check the weather forecast before applying SPLAT CLM. Avoid applying SPLAT CLM less than 3 hours before rain, since the rain may dislodge the SPLAT CLM dollop. After 3 hours, the SPLAT CLM dollop will cure and a normal level rain will not affect the SPLAT CLM dollop.

SPLAT CLM APPLICATION RATE

SPLAT CLM should be applied so that the dollops are distributed evenly throughout the treatment area.

To protect an area, apply the SPLAT CLM dollops as close as possible to the ratio of 2/3 : 1/3 , that is, 2/3 of the number of SPLAT CLM dollops needed, distributed evenly around the border (a.k.a. perimeter) of the treatment area; and the remaining 1/3 of the number of SPLAT CLM dollops needed, distributed evenly inside the treatment area. When the treatment area is protected, all the plants within the treatment area should have a reduction of leaf damage from the CLM. As an option, receptacles or additional delta traps can be purchased from ISCA Technologies to contain, hang and protect the SPLAT CLM dollops around the treatment area border. To protect individual trees, SPLAT CLM dollops should be distributed evenly throughout the tree.

To Protect an Area (Treatment Area)	Number of SPLAT CLM Dollops	To Protect Individual Trees
	3	1 small to medium tree
	3 to 4	1 medium to large tree
≤ 500 ft ²	6 to 8	With 2 trees or more, protect the area instead of individual trees, so reference the size of area that trees are located in, for the number of SPLAT CLM dollops to apply.
500 ft ² to 1,000 ft ²	8 to 10	
≥ 1,000 ft ² to 2,000 ft ²	10 to 12	

STORAGE INFORMATION

- SPLAT CLM should be kept in the provided packaging, sealed and stored in the refrigerator. Do not store in freezer or expose to freezing temperatures. Do not expose to high temperatures. When stored properly, SPLAT CLM will have a shelf life of 2 years. After removing from refrigerator, allow SPLAT CLM to cool to room temperature before application.
- Unused ISCALure CLM should be kept in the provided package, sealed and stored in refrigerator. For longer product shelf life, store in freezer. Delta traps should be stored in a cool and dry place. When stored properly, ISCALure CLM will have a shelf life of 2 to 5 years.

OTHER INFORMATION

1. CLMs are attracted to new flush of leaf growth. Avoid pruning live branches more than once a year, so that the cycles of flushing are uniform and short. Once the leaves harden, the pest will not be able to mine the leaves. Do not over prune leaves damaged by CLM because undamaged areas of the leaves continue to produce food for the tree. Do not apply nitrogen fertilizer at times of the year when CLM populations are high as new flush of growth will be severely damaged.
2. The effectiveness of SPLAT CLM control is contingent on the effectiveness of control measures in host plants in your vicinity. If CLM is not well controlled in your vicinity, they can reproduce and mated CLM females can migrate to damage nearby host plants. Where possible, any host plants which are close by outside the treatment area border should preferably be included in the SPLAT CLM treatment area
3. SPLAT CLM is registered and approved by US Environmental Protection Agency for the control of CLM, EPA registration number 80286-15.
4. The standard disclaimer for the information and use of ISCA's products can be found in the ISCA Technologies Standard Terms and Conditions of Sale. You may request that a copy be sent to you or you can view this at the ISCA website at: <http://www.iscotech.com/exec/sales.htm>.
5. Please feel free to view the latest ISCA products and other customer support material at the ISCA website: <http://www.iscotech.com/exec/customersupport.htm>.