

Cucurbits

Melon Aphid

Scientific Name: *Aphis gossypii*

(Reviewed 12/09, updated 12/09)



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DESCRIPTION OF THE PEST

The [melon aphid](#), also called cotton aphid, is a rather small aphid that ranges in color from yellowish green to greenish black. Both [winged](#) and wingless forms are produced. The winged individuals are somewhat slender and are not as robust as the wingless form. A mature individual measures about 0.06 inch (1.5 mm) in length. The melon aphid develops in colonies and prefers the underside of leaves. Unlike other aphids, melon aphid populations do not diminish with high temperatures; they can also be troublesome late in the season (September and October), particularly in the San Joaquin Valley and in northern California.

Melon aphid has an extensive host range. Some of the crops it attacks besides cucurbits are cotton and citrus. Host weeds include milkweed, [jimsonweed](#), [pigweed](#), [plantain](#), and [field bindweed](#).

DAMAGE

These small, green aphids can be a major problem on young plants where they feed near the tips of runners or in growing points. They cluster in numbers on the underside of growing leaves, distorting and curling the leaves, and produce a large amount of honeydew. The fruits become coated with the sticky secretion, creating an environment favorable for the development of a sooty mold. In addition they vector a number of viruses. In the San Joaquin Valley, this aphid can vector cucumber mosaic, zucchini yellow, and [watermelon mosaic viruses](#), among others. These virus diseases may be more destructive to crops than direct aphid feeding. Several other aphid species cause similar injury, as well as virus transmission. The end result of feeding by this aphid is loss of vigor, stunting, or even death of the plants. Melon aphids will feed on cantaloupe, honeydew melon, casaba, and Persian melons, watermelon, cucumber, and squash.

MANAGEMENT

Silver reflective mulches have successfully been used to repel aphids from plants, thus reducing or delaying virus transmission. In some areas of the state, row covers have also been successfully used. Biological control can have a significant impact on aphid population so be sure to evaluate predator and parasite populations when making treatment decisions.

Biological Control

Naturally-occurring populations of the [convergent lady beetle](#), *Hippodamia convergens*, may provide effective control in early spring. Releases of this beetle are not effective, however, because it generally does not remain in the field following release. Other general predators, such as [lacewing](#) and [syrphid](#)

larvae, and parasitic wasps, including [Lysiphlebus](#), [Aphidius](#), [Diaeretiella](#), and [Aphelinus](#) species, also attack aphids. Biological control is not effective in reducing virus transmission by this aphid.

Cultural Control

It is a good practice, where feasible, to remove and bury the few severely infested plants as they appear in spring; this helps prevent rapid spreading of the aphid population. Row covers applied at planting and removed at first bloom exclude melon aphid. Row covers are not recommended in the San Joaquin Valley. Silver reflective plastic mulches applied at planting have been shown to be effective in repelling aphids from plants, thereby reducing or delaying virus infection. Mulches help plants get off to a healthy start, and are effective until expanded foliage covers the reflective surface. Mulches may need to be removed in the desert areas when summer temperatures are excessive for optimal growth of plants. However, in the Central Valley and cooler areas, mulches have not caused plant damage; in fact, they improve soil moisture and nutrient retention, which may further aid plant productivity.

Preserve habitat for beneficials around the field and keep dust down to encourage parasitism and predation. If populations are high enough to produce large amounts of honeydew, the fruit will need to be washed off. Avoid overfertilizing with nitrogen. Fields infested with melon aphid should be disced or plowed under as soon as harvest is complete.

Organically Acceptable Methods

Biological and cultural controls and sprays of rosemary oil, insecticidal soaps, and certain oils are acceptable for use in an organically grown crop. Rosemary oil is less disruptive of beneficials than soaps and narrow range oils.

Monitoring and Treatment Decisions

Melon aphid is very difficult to control with insecticides. If natural enemies are not destroyed by insecticides applied for other pests, they will help keep melon aphid under control until late in the season. If unusually large numbers of aphids build up in parts of a field early in the season and appear to be retarding growth or causing honeydew buildup on fruit, apply an insecticide to the infested portions of the field. No threshold has been established. Early treatment does not prevent virus introduction; however, treating may help reduce spread of the virus if aphid colonies are present.

Common name (trade name)	Amount/Acre	R.E.I.+ (hours)	P.H.I.+ (days)
<i>The following materials are listed in order of usefulness in an IPM program, taking into account efficacy, pesticide registrations, information related to natural enemies and honey bees, and environmental impact. Not all registered pesticides are listed. Always read label of product being used.</i>			
A. DINOTEFURAN (Venom) 70W MODE OF ACTION GROUP NUMBER ¹ : 4A COMMENTS: Foliar application.	3–4 oz	12	1
B. IMIDACLOPRID (Admire Pro) MODE OF ACTION GROUP NUMBER ¹ : 4A COMMENTS: Apply at planting or transplanting and incorporate into root zone. Use where field has history of these pests.	7–10.5 fl oz	12	21
C. THIAMETHOXAM (Platinum) MODE OF ACTION GROUP NUMBER ¹ : 4A COMMENTS: At seeding or transplanting, apply in sufficient water to ensure uniform application and incorporation into the soil. Provides about 40 days of protection. Use where field has history of these	5–8 fl oz	12	30

pests.

D. PYMETROZINE

(Fulfill) 2.75 oz 12 0
MODE OF ACTION GROUP NUMBER¹: 9B

E. ROSEMARY OIL#

(Hexacide) 0.75–1.5 qt — 0
MODE OF ACTION: Contact including smothering and barrier effects.
COMMENTS: Good coverage is essential for good control. Apply in a minimum of 25 gal/acre. Less disruptive of beneficials than the other organically acceptable alternatives listed.

F. INSECTICIDAL SOAPS#

(M-Pede) 1–2% solution 12 0
MODE OF ACTION: A contact insecticide with smothering and barrier effects.
COMMENTS: Thorough coverage is important. This material has no residual value and repeated applications are necessary. For plants with dense foliage the higher gallonage rate may be necessary.

G. NARROW RANGE OILS#

(Saf-T-Side, Organic JMS Stylet Oil) 3–6 qt/100 gal 4 0
MODE OF ACTION: Contact including smothering and barrier effects.
COMMENTS: Oil will reduce populations temporarily, but has no residual and requires repeat applications and thorough coverage. Oils may cause phytotoxicity problems; exercise care when using these materials. Check with certifier to determine which products are organically acceptable.

H. BIFENTHRIN*

(Capture) 2EC-CAL 4–6.4 oz 12 3
MODE OF ACTION GROUP NUMBER¹: 3
COMMENTS: Also will control mites. Repeated use of this material is very disruptive to beneficials. Do not apply more than 19.2 oz/acre/season. Do not make more than 2 applications after bloom.

I. METHOMYL*

(Lannate) LV 1.5–3 pt 48 see comments
MODE OF ACTION GROUP NUMBER¹: 1A
COMMENTS: Labeled for use on cucumbers, melons, and summer squash only. Repeated use of this material is very disruptive to beneficials. PHI is 1 day if 1.5 pt or less is used/acre; if over 1.5 pt, PHI is 3 days.

J. ENDOSULFAN*

(Thionex) 50WP 1–2 lb 72 2
MODE OF ACTION GROUP NUMBER¹: 2A
COMMENTS: Do not exceed 3 applications/year or spray where water can get into drainage areas. Repeated use of this material is very disruptive to beneficials.

+ Restricted entry interval (R.E.I.) is the number of hours (unless otherwise noted) from treatment until the treated area can be safely entered without protective clothing. Preharvest interval (P.H.I.) is the number of days from treatment to harvest. In some cases the REI exceeds the PHI. The longer of two intervals is the minimum time that must elapse before harvest.

¹ Rotate chemicals with a different mode-of-action Group number, and do not use products with the same mode-of-action Group number more than twice per season to help prevent the development of resistance. For example, the organophosphates have a Group number of 1B; chemicals with a 1B Group number should be alternated with chemicals that have a Group number other than 1B. Mode of action Group numbers are assigned by IRAC (Insecticide Resistance Action Committee). For additional information, see their Web site at <http://www.irc-online.org/>.

* Permit required from county agricultural commissioner for purchase or use.

Acceptable for use on organically grown produce.

PUBLICATION



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UC ANR Publication 3445

Insects and Mites

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<http://www.ipm.ucdavis.edu/PMG/r116300711.html>