

UC Pest Management Guidelines

AVOCADO PERSEA MITE

Scientific Name: *Oligonychus perseae*
(Reviewed: 7/01, updated: 7/03)



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DESCRIPTION OF THE PEST

Persea mite, a recently introduced pest of avocados, occurs in most avocado-growing areas of California except the Central Valley. It is most damaging to the Hass variety of avocado, but also attacks Gwen and Reed varieties. Mexican varieties, such as Fuerte, Bacon and Zutano are little affected. Persea mite is known to attack numerous other plant species such as willow, *Malva* spp., *Prunus* spp., Eucalyptus, carob, and many other plants.

[Colonies of persea mite](#) occur on undersides of avocado leaves, beneath canopies of delicate webbing where feeding and reproduction takes place. The webbing protects the mite from many common predators.

[Eggs](#) are semispherical in shape, pale yellow in color and during the later stages of development have characteristic red eye spots. Immature stages are yellowish or greenish in color, with two or more small dark spots in the abdominal region. The duration of the immature stages varies from 10 days at 86°F (30° C) to 36 days at 59°F (15°C) for the female; males develop slightly faster because of their smaller size.

Adult females have an oval-shaped body that is slightly flattened

and elongated, yellowish green in color, and have several small dark spots located on the abdominal region. The male is smaller than the female and has a pear-shaped body that is slightly flattened and yellowish in color. Occasionally it has small dark spots in the abdominal region. Old females that have ceased oviposition are dark green in color, inactive, and the body is reduced in size. Populations begin building in March and generally reach their peak in July and August. Populations crash in summer when hot conditions (90° F, 32° C or higher) arise or in winter when temperatures are cool.

DAMAGE

The early season damage caused by perseia mite can be confused with that of the [sixspotted mite](#), *Eotetranychus sexmaculatus*. Both species mainly affect the underside of the leaf and produce webbing along the midrib and veins. However, sixspotted mite feeding is continuous along the veins, producing a purplish damaged area, while feeding by perseia mite produces circular necrotic spots covered by [dense layers of webbing](#). The webbing causes the colony to appear as a silvery spot on the underside of the leaf. Feeding on upper leaf surfaces causes a yellow spotting pattern. In contrast, [necrotic spots](#) caused by sixspotted mite are more irregular in shape and generally more contiguous along the veins. The webbing is less dense and doesn't form a layered canopy like that of the perseia mite. As perseia mite populations increase, feeding causes leaf drop. A heavily infested tree will have a litter of yellow-spotted, green leaves on the ground.

BIOLOGICAL CONTROL

Numerous predators feed on perseia mite: predaceous thrips, including [sixspotted thrips](#) (*Scolothrips sexmaculatus*), [black hunter thrips](#) (*Leptothrips mali*), and [Franklinothrips orizabensis](#); native predaceous mites ([Euseius hibisci](#) and *Galendromus annectens*); and the [spider mite destroyer](#) (*Stethorus picipes*). Because of the protective webbing produced by perseia mites, many predators cannot feed on the eggs, nymphs, and adults in nests. When moving between colonies, however, perseia mites are vulnerable to predation. Commercially available species of *Galendromus* (*G. annectens* and *G. helveolus*) have proved to be helpful in controlling pest populations in some situations, as has *Neoseiulus californicus*, which is equally effective and less expensive. Lacewings released at high rates can also be effective.

CULTURAL CONTROL

With small trees, washing the leaves with water under pressure, such as from a garden hose will remove mites and destroy

nests. A heavily infested tree needs to be adequately irrigated and fertilized to maintain the flush of new growth that occurs after mite-induced leaf drop. (Be careful not to overfertilize trees to avoid promoting mite populations.) In severe cases white washing may be required to protect the tree trunk from sunburn after leaf drop has occurred.

ORGANICALLY ACCEPTABLE METHODS

Biological control (including releases of predatory mites), cultural controls, and oil sprays.

MONITORING and MANAGEMENT DECISIONS

Begin monitoring for perseas mite in mid-March. If necessary, begin releasing predatory mites in small amounts on a monthly basis in late March or early April. In the early stages of infestation, it may be necessary to treat with oil by helicopter in late July or August. Watch for warm weather, which may preclude treatment with oil; mite populations generally crash when temperatures reach 100° F for more than a couple of days.

TREATMENT

Pesticide (commercial name)	Amount/Acre	P.H.I.+ (days)
A. GALENDROMUS MITES#	5,000/acre/release	0
...OR...		
NEOSEIULUS CALIFORNICUS#	5,000/acre/release	0
COMMENTS: Begin making monthly releases of predaceous mites during spring; release a minimum of 15,000 mites/acre/season from spring through early summer. This rate of release is not high enough to bring about control in one season, but it does introduce the predator into the grove for eventual ongoing biological control of perseas mite. The best time to apply mites is when leaves are moist. If leaves are dry, mites can be applied in a solution with water from a backpack mister or by moistening foliage with a spray bottle and shaking the mites onto the moist leaves.		
B. NARROW RANGE OIL#	Label rates	0
COMMENTS: Restricted entry interval: 4 hours. Requires good coverage to be effective.		
C. ABAMECTIN*		
(Agri-Mek) 0.15 EC	Label rates	14
COMMENTS: Check with your county agricultural commissioner about the availability of this product under a Section 18 registration. Use with 1-2% narrow range (415) oil		

in a minimum of 50 gal water/acre. On large trees aerial applications may require larger volumes of water to achieve desired efficacy. Control may last 3 or more weeks. Only use in an alkaline or slightly acidic solution. Do not tank mix with nutrients.

- + Preharvest interval. Do not apply within this many days of harvest.
- * Permit required from county agricultural commissioner for purchase or use.
- # Acceptable for use on organically grown produce.

PRECAUTIONS

PUBLICATION



UC IPM Pest Management Guidelines: Avocado
UC ANR Publication 3436
Insects and Mites
B. A. Faber, UC Cooperative Extension, Santa
Barbara/Ventura counties
P. A. Phillips, UC IPM Program, UC Cooperative
Extension, Ventura Co.