

The Avocado Insect Situation

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The avocado industry has been fortunate in one respect in that insect infestations have not been generally serious and very little difficulty has been experienced in their control when occasional flare-ups have occurred.

At present, in southern California, avocado tree and fruit insect pests for the most part are naturally controlled. However, it behooves the grower to be on guard and ready to prevent the damage that may occur if one or more of the established insect pests should not be held in check or a new one should find its way to California. The quarantine officers are guarding against the latter and so far have been very successful.

Insect pests already established which occasionally cause injury are brown mite, greenhouse thrips, *Latania* scale, omnivorous looper and *Amorbia*.

The *Latania* scale causes injury to all parts of the tree, thereby impairing the marketing quality of the fruit. It has become established in nearly all the avocado-growing districts of southern California but very little control work is now attempted since it is not now giving the industry much concern. It has been an important pest in San Diego County and certain locations in Los Angeles and Orange counties. Fumigation with HCN gas has been used successfully, but during the last two or three years this pest has not been commercially important. Parasites and predators are known to attack *Latania* scale; and in San Diego, where growers were greatly concerned up to a few years ago, the two-stabbed ladybird beetle is now given much of the credit for its control.

In other avocado-growing districts there is less assurance that this same beetle is effecting control but apparently parasites and predators and possibly other natural factors are responsible.

Greenhouse thrips established in nearly all districts is increasing in importance and many growers find it advisable to use control measures. Infestations are usually spotted but the population of insects is so great in affected areas that considerable injury is done to leaves and fruit by the thrips rasping the surfaces and sucking out the chlorophyll, thereby causing a brownish appearance and rendering the fruit unmarketable.

For control, pyrethrum extract, $\frac{3}{4}$ pint, and $\frac{1}{2}$ gal, of light medium oil to 100 gal. of water as a spray is recommended. However, due to the shortage of pyrethrum its use on avocados as well as on certain other crops is not now permitted. Therefore, in lieu of this material a formula made up of Black Leaf 40, 1 pint to 100 gal. of water containing some casein spreader, is suggested. An effort is being made to have pyrethrum released by the War Food Administration for use by avocado growers.

Avocado brown mite is found in all avocado-growing counties. It causes the leaves to turn brown and frequently to drop, injuring the tree by reducing the leaf surface. While this mite is established in all avocado-growing districts and is frequently not important, yet avocado growers should be on their guard and treat before the infestation is severe or it will be too late. One quarter to one pound of fine sulphur per tree dusted on the leaves is recommended as the treatment.

Two leaf-eating insects, the Amorbia and looper, sometimes severely injure trees and fruit. The Amorbia affects the fruit primarily, and the looper the leaves.

They are established in many parts of the southern California avocado area but are fairly well controlled by natural enemies. Some seasons the control factors are slow in getting started and many trees are stripped of, their leaves and young fruits injured. The looper is largely held in check by a fungus disease. When necessary, the mechanical control for both insects is a spray composed of standard lead arsenate, 4 pounds to 100 gal. of water using 6 oz. of blood albumen as a spreader.

It is of vital importance to the grower to control insect pests before they become of commercial concern and a source of infestation to the orchards in the community.

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