

Cherry Fruit Sawfly

DDT or lindane in pre-bloom spray controls pest on cherries, plums

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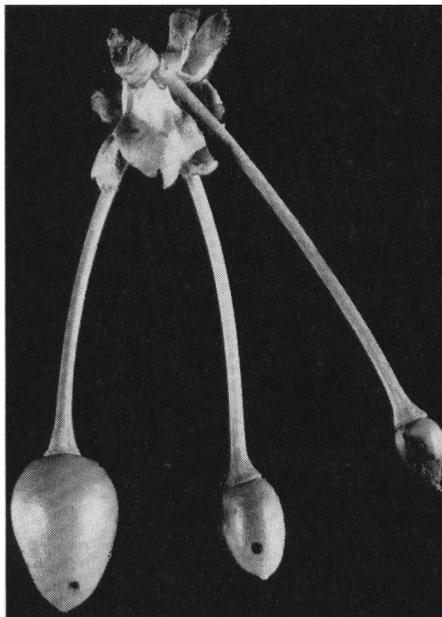
New methods of control—with DDT or lindane—have reduced the threat of crop loss in cherries and plums from the cherry fruit sawfly—*Hoplocampa cookei* (Clarke).

Damage to green fruit by this inconspicuous wasp has been a yearly occurrence in certain areas of central and northern California. Occasionally the pest has assumed epidemic proportions and during the worst years growers have had most of the fruit of some varieties destroyed and have not attempted to harvest the remainder.

The responsible insect has been frequently confused by ranchers with the cherry fruitfly because of the similarity in common names. However, the true fruitfly is not a pest of commercial orchards in California. The cherry fruit sawfly is more closely related to another cherry pest—the pear and cherry slug—but does its damage to the fruit rather than to the leaves.

The seasonal cycle of the insect is tied in closely with that of the host fruit trees. Adult sawflies emerge from cells in the ground in late February or early March, timing their appearance to coincide with the early, popcorn stage of the Chapman variety of cherry.

The female sawfly is mostly black, rather stout, and about one-half the size of the common housefly. The male is somewhat smaller and largely light reddish brown. On sunny days both sexes can be observed in open flowers or buzzing about the topmost branches of cherries and plums. During cold or cloudy weather the wasps cling to the trunk or hide in the grass beneath the tree. After mating, the female wasp inserts her eggs into the calyx tissue of the popcorn flower. No eggs are laid after the sepals



Characteristic entrance and exit holes of a cherry fruit sawfly larva which has progressively attacked the three cherries of a fruit cluster. The seed has just begun to harden in the largest cherry and the mature sawfly larva is about to emerge.

turn down and the flower opens. This fact has an important bearing on control and for greatest efficiency sprays should be applied during the popcorn stage before the sawflies have laid their eggs.

The egg hatches in four to five days and the newly emerged larva bores into the young fruit which it quickly hollows out. A few days later it molts and crawls forth to seek another fruit. After making a small characteristic entrance hole it bores to the center and destroys the soft developing seed. Generally, a single larva will attack three fruits over a period of about three weeks, all before the seeds

harden. The full-grown larva leaves the green fruit and drops to the ground. Here it quickly works its way a few inches below the surface and forms a papery cocoon. The species is single-brooded and the larva rests quietly in its cocoon during summer, fall, and winter, until early February at which time it pupates and transforms to an adult.

The egg-laying female lives for several weeks and will move from tree to tree and variety to variety in order to find flowers of the right maturity. Thus an early infestation of Chapman trees in an orchard of mixed cherry varieties indicates that Black Tartarian, Napoleon, Bing, and other varieties will be infested in turn as they come into flower.

Recorded distribution of the cherry sawfly includes orchards in Contra Costa, Napa, Solano, Yolo, Nevada, and El Dorado counties but injury has been most frequent and serious in Solano County.

The most characteristic symptom of cherry fruit sawfly presence is the small, rounded entrance hole in the green fruit. When such a fruit is cut open, the whitish, C-shaped larva can usually be found near the center. If only the ripe or nearly ripe fruit is examined, the larva will not be found and most of all of the previously infested green fruit will have dropped from the tree. In orchards with a history of sawfly damage, the farmer may be able to spot the adults in flowers. Also, he may observe them buzzing about the upper branches of trees just coming into bloom.

Control is best accomplished by using a DDT spray—two pounds of 50% wettable to 100 gallons—applied when most of the flower buds are in the pre-bloom stage. The branches, trunk, and ground area near the trunk should be wet with the spray. Two to five gallons per tree may be necessary. Lindane may be substituted with nearly as good results. When spraying is delayed until after petal fall, some control will be obtained but a certain proportion of the fruit will already be damaged.

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AVOCADO

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centration of 2,4-D. Continuous vaporization of distilled water within the propagation chambers is also being tried in an effort aimed at further reducing the loss of scion leaves.

Collections of roots are being made at various times to note whether their condition or state of physiological activity

influences their grafting behavior. Other workers have reproduced avocado trees by means of tedious indirect methods and these tests are designed to explore other means. Varying success has thus far lent encouragement.

The use of low concentrations of nutrient, saturation of the propagation chamber with water vapor, excellent drainage, and the acid and other properties of peat in the plaster sand-peat mix-

ture should prove helpful, whereas the use of low concentrations of 2,4-D should assist in the retention of the leaves and in promoting growth.

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