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AGRICULTURAL EXPERIMENT STATION
MICHIGAN AGRICULTURAL COLLEGE

East Lansing, Michigan

The Cherry Maggots

By

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Two species of maggots infest sour cherries in Michigan. The late varieties of sweet cherries (notably Dikeman) are also occasionally infested, although to a far lesser degree.

The present discussion applies to the cherry-maggot, or as it is also known the "Cherry fruit-fly" in relation to sour cherries alone, cherries which are for the most part intended for canning or for cooking and which are *sure* to be *carefully* and *thoroughly washed* before being disposed of.

Two Species in Michigan: The two species which occur in Michigan are known respectively as the white-banded cherry fruit-fly and the black-bodied cherry fruit-fly. The winged flies of both species are considerably smaller than house-flies and both have wings which are crossed with bars of dark color. Both have very similar life-histories and both are controlled by the same measures. The black-bodied fly does, however, emerge and lay its eggs somewhat in advance of the white banded species.

Life-History of the Cherry Fruit-flies: During the first half of June, these flies emerge from under ground and lay eggs in tiny gashes cut in the fruit of the cherry. After a few days, the eggs hatch and each maggot bores into the growing fruit to remain there until about one-fourth inch long when the maggot leaves the fruit, descends to the ground and burrows under the surface, where it changes to a pupa. This pupa which really corresponds to the cocoons of many moths, remains in place underground until the following season when each pupa splits open and produces a fly, which wanders about for a time, sucking up its food from the foliage of the cherry-tree until the time for egg-laying comes around. Thus the life cycle is completed, one generation annually. The laying of the eggs,—the feeding of the maggots inside the fruit,—the pupal period underground,—and the final emergence of the winged fly which, if a female, lays her eggs for another generation.

The Effect on the Cherry: The cherry suffers little in external appearance. Sometimes one is unable to detect the presence of the maggot without opening the cherry, and at others, one notices a sunken area more or less marked. It is impossible to select and reject the infested fruits during picking time without too great an expenditure of time, and even if a

reasonably close examination were made, many "wormy" cherries would get by.

The result is discouraging and inevitable. If the cherries are pitted and canned, one finds some of the maggots which stand out with astonishing clearness as white or cream-colored against the deep rich red of the fruit and,—but why continue.

Control: After the eggs are once laid it is plainly impractical to do anything worth while in the direction of control. We have no spray that will kill the eggs, nor is it possible to reach the maggots inside of the fruit. Some of the pupae might be killed by plowing, if it were practical to plow deeply enough without danger to the roots of the trees, although at best such a measure could give no more than partial control. Furthermore, the flies breed outside on wild cherry, at least one species does, and the other probably will be found to do so after sufficient search.

There is, however, a time when the flies may be poisoned successfully, and this time is just before the eggs are laid. The spray to use is arsenate of lead and the strength is two and one-half pounds of the powder to one hundred gallons of water. Success depends almost wholly on properly timing this spray.

The time of emergence of the flies varies with the season, and while they usually fly during the first and second weeks of June, yet in some seasons this would be too early and in others too late. For the same reason two sprays put on respectively during early and mid-June will usually prove about right but on occasion these dates may not prove to be optimum. In the Province of Ontario as well as in New York State, growers are being encouraged to time applications with reference to the coloration of the cherries. There it is the rule to put on one spray as Early Richmond cherries show red on one side and the other as Montmorency cherries show red on one side. It is customary to use 2½ pounds of the poison to 100 gallons of water. Probably this rule will work out better than the one based on time alone.

A general spraying program for the cherry is included in the Michigan Spray Calendar, published as Special Bulletin 140, of this Station, and which may be secured free of charge on application to R. S. Shaw, Director, East Lansing, Michigan.



The Adult Fly of the
Cherry Maggot.