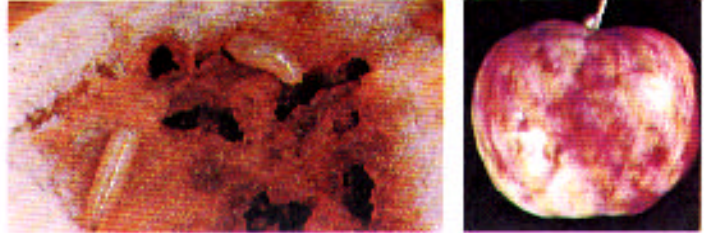


COMMON FRUIT INSECTS

For safe and effective use of insecticides, always identify the problem correctly.



1. Codling moth adult and new larval entry, and damaged or "wormy" apple



2. Apple maggot in apple, and blotching and streaking of maggot-infested fruit



5. Rosy apple aphid, and deformed fruit shown with normal apples for comparison



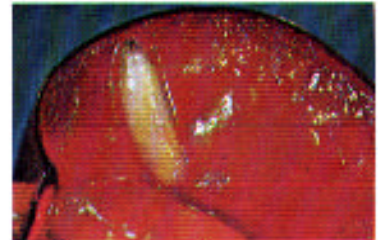
3. Red-banded leaf roller and damage



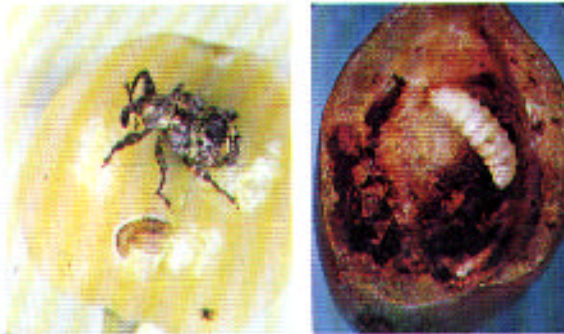
4. Green fruitworm



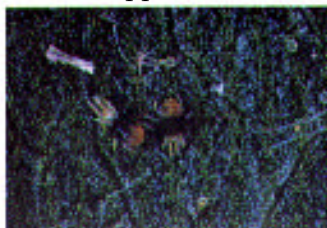
6. San Jose scale on apple



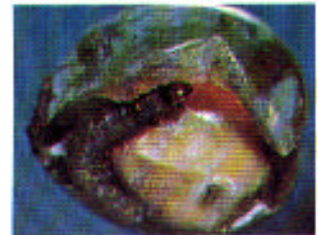
7. Cherry fruit fly maggot



8. Plum curculio adult and egg-laying slit on cherry, and curculio larva in plum



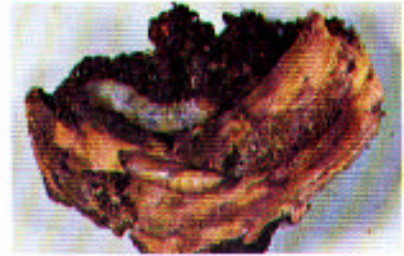
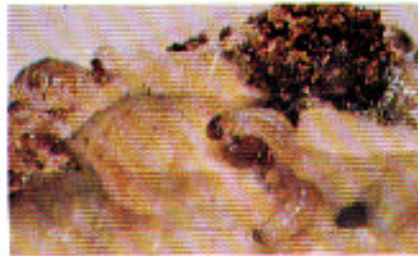
9. Two-spotted spider mite and eggs (enlarged). Not an insect



10. Grape berry moth larva and damage



11. Oriental fruit moth. Twig damage and larva in peach



12. Peach tree borer and pupa

COMMON FRUIT INSECTS OF INDIANA

1. CODLING MOTH, *Cydia Pomonella* (Linnaeus). This is the insect primarily responsible for "wormy" apples. Codling moth larvae overwinter in silken cocoons beneath the rough bark of apple trees, in packing sheds, or wherever they find protection. In spring, the larvae pupate and emerge as moths, which lay eggs on leaves and small apples. When the eggs hatch, the new larvae bore into the fruit to feed. Three, and sometimes a partial fourth, generations occur each year in southern Indiana. In northern Indiana, there are only two generations.

2. APPLE MAGGOT, *Rhagoletis pomonella* (Walsh). The apple maggot is found throughout most of Indiana, but is normally a threat only in the northern half. The parent flies emerge from the soil in late June and lay eggs on apple fruit. These hatch into maggots (sometimes called "railroad worms") which burrow through the flesh. Chances of damage increase as the season progresses. Apples that are newly infested at harvest may later break down in storage.

3. RED-BANDED LEAF ROLLER, *Argyrotaenia velutinana* (Walker). Adult moths emerge in early spring to lay eggs on the scaffold branches of apple trees. Later generations lay eggs on the foliage. The larvae feed on the leaves, rolling and webbing them together as they feed. These larvae also eat the surface of fruits, especially those that hang in clusters or touch infested leaves. Fruit damage usually occurs late in the season. There are three generations each year, and sometimes a fourth in southern Indiana.

4. GREEN FRUITWORM, *Lithophane antennata* (Walker). The green fruitworm is a minor pest of apples in Indiana. The worms feed on foliage, as pictured, and also eat large holes in the fruit. Damage takes place 3-4 weeks after petal fall when the apples are about the size of marbles. The insects are general feeders and will attack foliage of many deciduous trees and, sometimes, other plants.

5. ROSY APPLE APHID, *Dysaphis plantaginea* (Passerini). These small, soft-bodied insects appear as soon as the buds open in spring. They suck sap from leaf and fruit bud clusters and cause developing leaves to curl. Attacked fruit clusters produce fruit that fails to develop, are knotty and deformed, and are difficult to pull from the tree. Other aphid species also feed on apples, as well as peaches, cherries, and other fruits. Some kinds secrete "honeydew," which discolors foliage and fruit.

6. SAN JOSE SCALE, *Quadraspidiotus perniciosus* (Comstock). This is one of several kinds of scale insects that attack fruit trees, causing major damage is to the health of the tree. The scales normally suck sap from twigs, branches, and limbs, weakening the tree and even causing parts of it to die. Fruit of heavily-infested trees may be covered with scales.

7. CHERRY FRUIT FLY MAGGOT, *Rhagoletis cingulata* (Loew). This insect and the larvae of the plum curculio cause "wormy" cherries. The cherry fruit fly prefers cool temperatures; therefore, infestations are most likely to occur in northern Indiana. It passes the winter in a puparium in the soil and emerges as a banded-winged fly similar in appearance to the adult of the apple maggot.

8. PLUM CURCULIO, *Conotrachelus nenuphar* (Herbst). Most of the worms found in peaches, apricots, plums, and cherries are the larval stage of the plum curculio. The adult also lays eggs in apples, but the worms do not develop in this fruit unless it drops. The crescent-shaped egg-laying scar, however, cause blemishes

and catfacing on apples. Feeding punctures by adult curculios further damage both apples and stone fruits. The curculio may overwinter in fence rows, brush plies, and nearby woodlots. For this reason, damage may be worse around the edges of an orchard.

9. TWO-SPOTTED SPIDER MITE, *Tetranychus urticae* (Koch). The two-spotted spider mite is one of four species of mites that cause damage in Indiana orchards. All are very tiny and suck sap from the leaves, causing them to become bronzed and yellowed. The two-spotted mite overwinters mostly beneath bark on the tree trunk and in plant debris. Another common species, the European red mite, overwinters as bright red to orange eggs attached to limbs and branches of the tree. All species have several generations each year.

10. GRAPE BERRY MOTH, *Endopiza viteana* (Clemens). This insect is common wherever grapes are grown. First generation caterpillars web the berries together, sometimes including nearby leaves. Infested berries turn purple, fail to grow, and drop from their stems prematurely. Second generation caterpillars feed inside the berries. The winter is passed in silken cocoons in fallen grape leaves. Leaves containing the cocoons are folded over and fastened with silken threads.

11. ORIENTAL FRUIT MOTH, *Grapholitha molesta* (Busck). During the summer, two or more generations of oriental fruit moth larvae bore into the end of peach twigs, causing them to wilt and die. As peaches start to ripen, a later generation attacks the fruits, causing them to be wormy. The worms are active and may lower themselves on a silken thread. They also have legs, which distinguish them from plum curculio larvae. The oriental fruit moth may attack apples if interplanted with peaches.

12. PEACH TREE BORER, *Synanthedon exitiosa* (Say). Two kinds of borers cause considerable damage to Indiana peach orchards. The peach tree borer enters the trunk at or near ground level; the lesser peach tree borer works higher on the trunk, in wounds and crotches of the tree. Evidence of infestation is large amounts of gum and frass that ooze from the wounds. Infested trees are nonproductive and may die from borer attack. Adults of the lesser borer emerge and start to lay eggs about May 1 in southern Indiana. This is a month earlier than the peach tree borer.

Current Control Information

The information and color illustrations presented here are designed to help you correctly identify some common fruit insects found Indiana. These insects and the problems they cause do not change, but the methods of dealing with them do. Therefore, Purdue University Extension entomologists have prepared the following publications to keep you up-to-date on the latest recommended control methods and materials:

- ID-168, *Commercial Tree Fruit Spray Guide* (\$4.00).
- ID-146, *Controlling Pests in Home Fruit Plantings*
- ID-169, *Indiana Commercial Small Fruit and Grape Spray Guide* (\$3.00)
- ID-60, *Midwest Tree Fruit Handbook* (\$4.00)

Single copies of these publications, which are revised periodically, may be obtained from your County Extension Office, or the Media Distribution Center, 301 South 2nd Street, Lafayette, IN 47905-1096.

Rev. 4/94