

Homeowner Apple and Pear Insect and Disease Control

Disease and insect control is needed to produce good quality apples and pears. The success of a spray program depends on using proper pesticides in the correct concentrations, proper timing of applications, and complete coverage. Apply sprays as mists of fine droplets with enough pressure to completely cover twigs, leaves, blossoms, and fruit. Be careful applying pesticides, and follow all manufacturers' recommendations and suggestions.

Different cultural and sanitation practices can greatly improve the control of apple and pear diseases. Plant only varieties adapted to your area (see Mississippi State University Extension Service Publication 966), and apply fertilizers based on soil test recommendations. Prune trees properly to let light and spray reach all parts of the tree. Prune and remove all dead and diseased branches. Remove fruit remaining on the tree and on the tree trunk. These sanitation practices greatly reduce the overwintering sites of many insects, fungi, and bacteria.

Diseases

Bitter Rot

A fungus causes bitter rot of apple and pear. The fungus attacks the fruit as it approaches full size. Under hot, and humid conditions, it can destroy an entire crop in a short time.

The disease causes light- to dark-brown circular spots on the fruit. In advanced stages, these spots often show concentric rings of small cushion-shaped objects. If the moisture is high, masses of pink spores occur on each little cushion. Often there will be more than one spot, and by growing and joining together, the entire fruit will rot.

Some of the fruit will mummify and cling to the limb all winter, while others fall to the ground. These mummified fruits and infected stems and leaves can cause infection the next year.

Scab

Scab is identified by olive-green spots on the leaves and rough, scabby lesions on the fruit. Infected fruit often has an odd shape. The fun-

gus overwinters in dead leaves on the ground. When weather conditions are right in the spring, the overwintering fungus reinfects the leaves and fruit.

Cedar-Apple Rust

Cedar-apple rust is a common disease and one of the easiest to identify. On cedars, the distinctive orange galls (referred to as "cedar-apples") appear in the early spring following rainy weather. Spores produced on these blow to apple trees where they infect young leaves during wet periods. Within several weeks, most of the leaves are covered with orange fungus pustules and, later in the season, heavily infected leaves defoliate. Defoliation several years in a row leaves trees weak and not able to thrive.

Fire Blight

Fire blight makes leaves and twigs look as if they have been burned. Bacteria cause this disease, and windblown rain and insects spread it. It attacks the leaves, twigs, and fruit.

Because bacteria overwinter in cankers on limbs and blighted twigs left on the tree, the best control is removing all affected twigs and limbs in the late summer or early fall. Cut through healthy wood well below the blighted area. Also cut any blighted area on a large limb out to healthy tissue. Dip all pruning equipment in 10-percent household bleach for a few seconds to prevent spreading the bacteria from one cut to another. To be sure none of these blighted areas have been missed, reinspect the tree in the fall after the leaves have fallen. Remove any holdover areas.

Where only a few blossoms and tips of branches are affected, as is often the case with apple trees, the blight does little damage. Remove the dead parts before the next growing season. Where fire blight is severe, refer to Plant Disease Dispatch M-203 for chemical control recommendations.

Pear Leaf Spot

Pear leaf spot is a fungus disease that infects the leaves, fruit, and stems of the current year's

growth. The worst effect of this disease is premature defoliation. As this happens from year to year, the tree is weakened, stops bearing fruit, and begins to decline.

The disease makes a circular dark-brown lesion on the leaf about one-quarter of an inch in diameter. When the leaf has many spores, it will fall. Spots on the fruit look the same, except they are slightly sunken. When spots on the fruit group together, the skin cracks.

Insects

A number of insects cause serious damage to apples and pears. Time your sprays to control insects before damage starts.

Codling Moth

The codling moth is one of the most serious pests of apples and pears. The insect winters as a mature larva in a cocoon located almost any place that offers protection. An adult moth exits the cocoon in April and May. It begins laying eggs soon after. The newly hatched larva enters the fruit soon after hatching. Because there are several broods each year, you must regularly apply sprays containing insecticides that will control this pest.

Flat-Headed Apple Tree Borer

To prevent injury to newly transplanted trees, wrap the trunk with medium-heavy-grade wrapping paper or even with newspaper. Start below the soil surface and continue to the lower limbs. Keep the trunk protected from May 1 to October 1 for 3 years. In pruning, leave some lower limbs to shade the main trunk. Cut borers out in the early fall with a sharp-pointed knife, and treat the injured surface with a good tree paint.

Burn all dead trees and branches before spring. Keep trees growing vigorously. Whitewashing alone will not help against borers.

Oriental Fruit Moth

The worm stage of the oriental fruit moth bores into the terminals or tips of apple and pear branches. Their tunnelling causes the terminals to die back for 4 to 6 inches. After the terminals begin to harden and become less attractive, the worms will enter the fruit later in the season.

Plum Curculio

The plum curculio is a dark-brown snout beetle. It spends the winter in the adult stage underneath leaves and trash near the orchard, but becomes active about the time trees begin to bloom. Egg-laying punctures by adult beetles and larvae feeding in the fruit cause damage.

San Jose Scale

San Jose scale can be a serious pest on apples and pears. These scale insects attack limbs as well as fruit. Oil emulsion applied during the dormant season is helpful. The regular sprays given in the schedule will control the young stage or crawlers.

Woolly Apple Aphid

The woolly apple aphid is the most destructive species of aphids attacking apple trees. It does a lot of damage to the foliage, but the major damage is in the root zone. Parasites may reduce the aphid population.

Mites

Several species of mites may attack apples or pears. These mites may include the two-spotted spider mite, European red mite, or eriophyed mite. The eriophyed mite makes a rust-like symptom on the fruit. These mites will overwinter as eggs on the trunk of the tree. If problems are present at the end of the growing season, apply a dormant oil spray before bud-break the following spring to help control these pests.

Spray Schedule

Spray	Materials and amount per gallon
Dormant After leaves drop in fall and before buds swell in spring.	Oil emulsion according manufacturer's directions.
Bud break From ½ inch long green leaves to when flower buds are just visible.	Captan 2 to 3 tbsp or 50% WP.*
Pink Just before blossoms open.	2 to 3 tbsp captan 50% WP or ½ fl oz. Immunox if rust has been a problem in the past.
Bloom For fire blight control (pears).	Streptomycin (frequently sold as Agmycin). Use only if necessary.
Petal fall	½ fl oz. Immunox or 2 to 3 tbsp captan 50% WP + 1 tbsp malathion 50 EC.*
First Cover 7 to 10 days after petal fall spray.	Same as petal fall.
Remaining cover sprays 10-to-14 day intervals, depending on weather, 10 days if lots of rainfall and drizzle.	Same as petal fall.

Note: 14-day waiting period between last Immunox application and harvest. Captan may be used through harvest. Make no more than 10 Immunox applications per season. Malathion may cause fruit injury to McIntosh and Courtland varieties if applied within 4 weeks of harvest.

*EC = emulsifiable concentrate; WP = wettable powder

Read pesticide labels closely, and observe all precautions and directions as stated.

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Publication 736

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Extension Service of Mississippi State University, cooperating with the U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. VANCE WATSON, Interim Director. (POD-5-06)