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The Control of Peach Diseases and Insects

GOOD peaches can be grown only if proper attention is given to the control of the various insects and diseases injurious to this crop. The sprays and treatments necessary will be discussed briefly in this leaflet.

WINTER SPRAYS

Winter sprays are applied for the control of scale insects and peach leaf curl. Before spraying, the orchard should be pruned, taking out all dead trees, dead branches, and cankered areas. This will result in a considerable saving of spray material. Oil emulsion sprays should be used throughout the State for the control of scale when the infestation is severe. In North Alabama where damage by peach leaf curl is common and in cases of light infestations of scale, commercial lime-sulfur often will give satisfactory control of both.

Oil sprays should be applied after the leaves have fallen in the fall and before the buds have begun to swell in the spring. Lime-sulphur for the control of peach leaf curl should be applied during this same period. This disease cannot be controlled if this material is applied after the buds have begun to swell.

SUMMER SPRAYS

Summer sprays are mainly for the control of the plum curculio, brown rot, and scab. The curculio is the main cause of wormy peaches in Alabama and is so well known that further description is unnecessary.

Brown rot is the most common and destructive of the peach diseases, often destroying the bulk of the crop. The rotted fruits may hang in the tree or drop to the ground where they shrivel into "mummies". The disease may also appear in the form of blossom-blight and twig-blight, and as cankers on larger twigs and small branches. From these diseased parts, especially from "mummies," arise the spores which are carried to the various parts of the plant and from which the initial infection takes place in the spring. Scab is a disease causing the appearance of olive to blackish spots or "freckles" on the fruit. In severe cases, the skin of the fruit is killed and the peach cracks.

Either the dust or spray treatment may be used; the spray gives the better results where properly done, but dusting requires much less time.

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The following spray schedule is recommended.

SPRAY SCHEDULE

No. of spray	Time of application	Materials for 50 gals. of spray	Materials for dusts	For the control of—
1	While trees are dormant	2¼ gals. oil emulsion or 6¼ gals. commercial lime-sulfur		Scale Scale and leaf curl
2	When 75% of petals have fallen	1 lb. lead arsenate + 4 lbs. hydrated lime	5 lbs. lead arsenate + 95 lbs. hydrated lime	Curculio
3	When 75% of shucks have been shed and young peaches are first exposed	Same as above	Same as above	Curculio
4***	Two weeks after third application	4 to 6 lbs. wettable sulfur*	5 lbs. lead arsenate + 80 lbs. sulfur flour + 15 lbs. hydrated lime	Scab
5	One month before harvest	Same as above + 1 lb. lead arsenate + 4 lbs. hydrated lime**	Same as above	Curculio Brown rot

*Self-boiled lime-sulfur (8-8-50) may be used instead of the wettable sulfur.
**Self-boiled lime-sulfur (8-8-50) plus 1 lb. of lead arsenate per 50 gals. of spray may be substituted for this spray.
***For varieties earlier than Carman and Hiley, this application may be omitted.

Specifications for Spray Materials and the Dilutions to be Used

The following materials may be purchased from reliable insecticide dealers.

Oil Emulsion.—The concentrated emulsion should contain 66⅔ per cent (by volume) of an oil having a viscosity of over 125 seconds (Saybolt at 100°F.) This should be diluted for use at the rate of 1 gallon to 21 gallons of water (9 gallons to a 200-gallon spray tank), which makes a 3 per cent oil spray.

Miscible Oils.—This type of oil spray may be used instead of oil emulsion. As the composition of different brands varies, no definite directions can be given for their dilution, other than the directions given by the manufacturer.

Commercial Lime-Sulphur.—The liquid lime-sulphur purchased should have a density of between 31°-35° Beaume, and should be diluted at the rate of 1 gallon to 7 gallons water (25 gallons to a 200-gallon spray tank).

Wettable Sulfur.—This material may be purchased ready for use and is diluted at the rate of 4 to 6 pounds per 50 gallons of spray. Slowly sift this amount into a gallon of water, stirring constantly, and then wash through a sieve into the spray tank.

Self-Boiled Lime-Sulfur.—Place 8 lbs. of stone or unslaked lime in a barrel and add enough warm water to start slaking. Then add 8 lbs. sulfur flour mixed with sufficient water to form a thin paste. Add water in small amounts from time to time, being careful not to add enough to stop the slaking suddenly. After the mixture has boiled about five minutes, add more

water until the mixture is cool, strain, and dilute to 50 gallons. It is then ready for use.

Lead Arsenate.—This may be added by stirring directly into the water in the spray tank.

Hydrated Lime.—This should be washed through a sieve into the spray tank in order to remove any coarse particles.

Dusts.—These should be purchased already mixed from insecticide dealers. The dust used in the first and second applications is known as the 95-5 peach dust and that used in the third and fourth applications as the 80-5-15 peach dust.

ORCHARD SANITATION

Pruning out diseased and dead twigs and branches frequently aids in the control of diseases. The "mummies" left on the tree or on the ground should be destroyed as they are the chief source of infective material for the disease known as brown rot. Plowing under these "mummies" two or more inches will remove them for a year, but the following year they will be turned up and become a source of infection. Gathering and burying or burning the "mummies" at considerable distance from the orchard seems to be the safest method of disposal.

FALL TREATMENTS FOR BORERS

The peach tree borer works in the bark of the trunk at or just slightly above the surface of the ground. The lesser peach tree borer works in the crotch or in the lower part of the larger limbs, usually where the tree has been wounded, or where the bark is especially rough. The presence of borers can be detected by the gum and frass exuding from their tunnels in the bark. The peach tree borer causes by far the greater damage; control measures for the lesser peach tree borer are only rarely necessary.

The Peach Tree Borer

The peach tree borer can be controlled very effectively by the application of paradichlorobenzene.

Amount Recommended for Trees of Various Ages.—Paradichlorobenzene cannot be used in treating one-, two-, and three-year-old trees. These trees should be wormed by hand. For four- and five-year-old trees, use ¾ ounce per tree; for six-year trees and older, use 1 ounce per tree; for trees over twelve years old, having very large trunks, 1¼ ounces may be used.

Method of Application.—Grass, weeds, and trash should be removed from around the base of the tree and the soil smoothed off with a shovel. Where gum is exuding from galleries above the soil surface, the soil level should be built up to these points with several shovelfuls of dirt. This must be done as the gas formed is heavier than air and, consequently, will not kill insects above the level at which the chemical is placed. Apply the correct amount of the chemical in a continuous band 1½ to

2 inches from the trunk, being careful not to place the crystals against the tree nor too far from it. The ring of crystals is then covered with several shovelfuls of dirt free of stones and trash and packed with the back of the shovel.

Subsequent Treatment.—Four weeks after the application, the mounds should be torn away from the four- and five-year old trees and six weeks later from around the older trees.

Time of Application.—In North Alabama this material should be applied between October 1-5; in Central Alabama October 10-15; and in South Alabama between October 15-20. Application in the fall as recommended above gives the best control.

If for any reason the application has been omitted at this time, it may be applied the first part of April. However, the treatment is less effective at this time.

The Lesser Peach Tree Borer

Dissolve ½ pound paradichlorobenzene in 1 quart of cottonseed oil. Apply this material with a brush to only those portions of the peach tree infested with the lesser peach tree borer. The entire tree should **not** be painted with this mixture. This material should be applied the latter part of October or the first of November while the weather is still warm. Applications may also be made in the spring, usually during April. The success of this method of control depends upon the weather being sufficiently warm to volatilize the paradichlorobenzene.

OTHER INSECTS

Oriental Fruit Moth.—The larvae tunnel into the tips of the tender shoots of the peach, causing them to wilt and die. They also occasionally work inside the fruit and are especially bad on peaches later than Elbertas. There is no effective control for this insect. It does little damage except in orchards where peaches later than Elbertas are planted or when apples or pears are interplanted with peaches. In sections where damage from this insect is severe, peaches later than Elbertas should not be grown and apples and pears should be planted as far as possible from the peach orchard.

Shot-Hole Borers.—These borers work in the bark of peach trees and their work is usually noticed when they bore through the outer bark making holes about the size of small "shot holes". The abundance of shot-hole borers is due in practically all cases to a weakened condition of the trees caused by winter injury, by neglect of the grower to control the peach tree borer, or by failure to control scale. Where trees are kept in a vigorous condition by proper fertilization and borers and scale are controlled, practically no damage is done by shot-hole borers.

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