

The Control of
Diseases and Insect Pests
of Prunes

in Western Oregon

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Prunes have been grown extensively in Oregon for many years. The control of certain insect pests and brown rot is essential for best yields, particularly in western Oregon.

Pear or prune thrips and brown rot are discussed in particular in this circular. A spray schedule for all the important insects and diseases affecting prunes in Oregon has been worked out.

CONTROL OF THRIPS

Pear or prune thrips, a serious pest of prunes in Oregon for over 30 years, can be controlled by spraying at the correct time and with the proper materials. This conclusion is based on results obtained from 20 years of experimental spraying.

Control materials recommended

The materials given below are those found to be most effective in the control of pear thrips on prunes:

- ▶ A spray made of 1 pint of 25 per cent DDT emulsion in sufficient water to make 100 gallons.
- ▶ A spray made of 2 pounds of 50 per cent DDT wettable powder in sufficient water to make 100 gallons.
- ▶ A dust made of 5 per cent DDT combined with sulfur or other non-alkaline material.

When to apply spray

The sprays may be timed according to the bud development as follows:

- ▶ Delayed-dormant spray, or when 30 to 50 per cent of the blossom buds show green at the tips.
- ▶ Green-tip spray, or when all of the blossom buds show green at the tips.

Number of applications

In cases of severe infestation, at least two spray applications are necessary for effective thrips control. To determine whether two or more sprays are to be applied, an examination of the buds for thrips is necessary. At the time the second application is to be made, the orchardist should pick at least 300 buds at random from several trees. Put the buds in a test tube or enclosed jar. Examine the buds by picking them to pieces with needles. Count the thrips. If there are 90 or more thrips per 100 buds, a second spray application is necessary.

The schedule given above cannot always be followed precisely due to rains, winds, or other conditions which occur at the time outlined. It may be necessary, therefore, to spray slightly before or after the time given in the schedule. The proposed schedule, however, must be followed as closely as possible in order to obtain satisfactory control.

Thorough spraying necessary

Thrips are likely to be anywhere on the trees. The spray, therefore, should reach every part of the tree. The spray materials are contact sprays and must wet the insects to kill them. The spray equipment should be capable of maintaining from 300 to 350 pounds pressure during the spraying operations. A coarse driving spray will force the spray into the buds better than a fine spray. For this reason, a coarse driving spray is recommended.

Preparedness essential

Spray materials should be on hand before the buds begin swelling in the spring. Sprayers should be overhauled and put in good condition several weeks before the spray season begins. Success in thrips control may depend on a very few days when spraying is possible. A delay for any reason may mean failure to control this pest.

CONTROL OF BROWN ROT

The severity of brown rot, a common disease of prunes, varies from year to year, depending upon climatic factors. During green fruit stages no significant amount of brown rot is likely to appear unless there is considerable wet weather. As the fruit approaches the ripening period the danger from brown rot becomes greater, especially if there is much wet weather or very high humidity.

Whether prunes are to be dried, canned, or shipped fresh, brown rot must be held in check as the fruit approaches maturity. Brown rot originates in the orchard but may spread disastrously in lugs or packs after harvest if the fruit is held long in storage or in transit. This is especially true in case of prunes shipped fresh to eastern markets.

In a year favorable to brown-rot development it may not be possible to avoid all rot by preventive measures, but the following program is suggested to reduce losses to a minimum.

Spray or dust program for brown-rot control

The best known materials for the control of brown rot on prunes are sulfur spray or sulfur dusts. These are about equally effective and the grower may use whichever he prefers or is equipped to use. If dust is preferred, use a 325-mesh sulfur or finer at the rate of 50 pounds per acre. Dusting has several advantages over spraying, such as ease and economy of application and less objectionable appearance of residue on the fruit.

As a spray for prunes any standard commercial brand of wettable sulfur is satisfactory. Follow directions on the package as to the necessity of adding more wetting agent.

Time and number of applications will vary with weather conditions, but the following recommendations will fit the average year.

- ▶ First Application: About five weeks before harvest. Six pounds of wettable sulfur to 100 gallons; or dusting sulfur, 50 pounds per acre.
- ▶ Later Applications: Repeat once a week, using same materials as in first application, giving last application just prior to harvest.

Other precautions recommended

In addition to a well-planned and executed spray program there are certain other practices which should help materially in reducing the amount of brown rot in shipments of fresh prunes.

- ▶ Exercise the greatest care in picking and handling to avoid stem punctures and any other fresh abrasions. Any break in the skin of the fruit enables brown rot to gain a foothold more easily.
- ▶ Avoid placing fruit with any brown-rot spots in the lugs when picking.
- ▶ Dust thoroughly both the lugs and the packing boxes inside and outside with dusting sulfur before using. The lugs should be dusted each time they are used. This precaution is most important.

SPRAY PROGRAM FOR PRUNES

Time of application	Insect or disease	Spray material and strength
1. <u>Dormant spray</u> . As winter buds are ready to open.	San Jose scale, twig miner.	12 gallons lime sulfur in water for 100 gallons spray. If scale is absent dilute 10 to 100.
	Lecanium scales and mite eggs.	An oil emulsion to give 4 per cent actual oil.
2. <u>Delayed-dormant spray</u> . When 30 to 50 per cent of buds show green tips.	Thrips. If no thrips are present delay spray to green tip application.	1. One pint 25 per cent DDT emulsion to water for 100 gallons spray. 2. Two pounds 50 per cent DDT wettable powder to water for 100 gallons spray. 3. Five per cent DDT combined with sulfur for dusting.
3. <u>Green-tip spray</u> . Most of buds green at tip.	Thrips.	
4. <u>Preblossom spray</u> . Buds white just before opening.	Syneta beetle. Twig miner.	5 per cent DDT dust, or DDT spray 2 pounds 50 per cent wettable powder to 100 gallons of water. If twig miner is a problem use the spray.
	Aphids.	If aphids present add 1 pint nicotine sulfate or 1 pound 25 per cent wettable parathion to the spray.
5. <u>First fruit spray or dust</u> . About 5 weeks before harvest.	Leaf spot and brown spot.	Use 6 pounds wettable sulfur to 100 gallons of spray, or 50 pounds dusting sulfur per acre.
6. <u>Later sprays or dusts</u> . Repeat weekly up to harvest.	Leaf spot and brown rot.	Use dust or spray as in 5.