

Peacock spot

Heavy rainfall causes peacock spot to be severe in many Mission olive orchards. The fungus is favored by moderate temperatures associated with rain or fog. Infection is most prevalent in the lower parts of trees where foliage is often dense and where air movement and exposure to sunlight is at a minimum. Leaf infections get started during the rainy season with symptoms appearing two weeks to three months later.

Leaf symptoms first appear as sooty blotches which later develop into dark-green to black circular spots 1/8 to 3/8 inches in diameter. A faint yellow halo is sometimes seen around the leaf spot. As the spots enlarge affected leaves yellow and then fall prematurely. Substantial defoliation caused by this disease can result in a marked loss of production. Twig death may occur due to defoliation. The severity of the disease may not be evident each time the orchard is checked since only a few leaves may exhibit symptoms at any one time. In fact, leaf loss accumulates with a constant dropping of leaves throughout the season. This leaf loss reduces vigor and may reduce production by as much as 20 percent.

The fungus survives on trees on old leaf lesions that have a white, crusty appearance. The margins of these lesions enlarge in fall and a new crop of spores develops there. Infection is associated with rainfall; most infections occur during winter. High temperatures restrict spore germination and growth, thus the disease is inactive during the warm, dry summers in California.

When to treat:

Once this disease occurs on trees, it is important to treat for it yearly. Excellent control can be achieved by thorough coverage with a 10-10-100 bordeaux spray. Spraying should be done as soon after harvest as possible. Ideally, applications should precede fall rains. Bordeaux is recommended over fixed coppers because it is the best and longest-lasting treatment. Bordeaux must be properly prepared to be effective.

Olive knot

This bacterial disease also increases during the rainy season. Infections begin during winter but galls do not appear until new growth occurs in spring. Wounds must be present for the bacteria to enter and form a gall. Rough galls or swellings of variable size develop on twigs, branches, trunks, roots, leaves, or fruit stems. Small shoots may be defoliated and killed. Galls also form at trunk or limb wounds.

Bacteria survive in the knots and are readily washed off at all times of the year. Infection occurs at low temperatures usually in fall or spring. Pruning wounds and injuries related to harvest or caused by pulling brush from the tree can be major contributors to worsening an olive knot problem. Freezing cracks, leaf scars, fruit and flower scars, and injuries from ladders or other equipment will also serve as avenues of entry for the bacterium. Do everything you can to avoid these injuries. Olive knot suppression will fail without a well-rounded control strategy.

One of the worst ways to spread olive knot is by pruning during the rainy winter months when active bacteria are present. All pruning in an infected orchard should be done during the dry season when there is little likelihood of spreading the disease.

When to treat:

Bordeaux or fixed copper sprays that control peacock spot will provide significant protection from olive knot. The spray should be applied as soon after harvest as possible. In orchards with a serious olive knot problem, a second spray in the early spring coinciding with the period of heaviest leaf drop will help reduce leaf scar infections. Pruning out knot during the dry months will help reduce the disease pressure in infected orchards.

Preparing Bordeaux Properly

If you plan to use a bordeaux spray for peacock spot control and olive knot suppression, the formula is:

10 lbs. Copper Sulfate (Bluestone)

10 lbs. Hydrated Lime

100 Gallons water

Copper material, in this case “bluestone” is expensive. If you plan to use a bordeaux spray, by all means prepare the bordeaux properly so that it provides the maximum effectiveness. If it is not done right, much of its value will be lost. Remember that the hydrated lime must be fresh, never more than six months old, but the fresher the better. Stickers or spreaders are not needed nor recommended.

The proper procedure for preparing bordeaux:

- 1) In a container outside the spray tank, make a water slurry of the required amount of hydrated lime to about the consistency of house paint (this can be done one tank ahead).
- 2) Fill the spray tank about 2/3 to 3/4 full of water.
- 3) While the agitator is running, pour the required amount of bluestone into the tank.
- 4) Only after the bluestone is completely dissolved (this may take a few minutes), and with the agitator still operating, pour the lime water slurry slowly into the tank while adding water to fill the tank.

If you prepare and mix the solution any other way, you don't have a true bordeaux mixture and its effectiveness will be reduced.