

What about Mistletoe?



Broadleaf mistletoe is an evergreen parasitic plant that grows on a number of landscape tree species in California. Hosts of broadleaf mistletoe include alder, flowering pear, ash, birch, box elder, cottonwood, locust, silver maple, walnut, and zelkova. Other species of broadleaf mistletoes in California infest only oaks. Dwarf mistletoes infest pines, firs, and other conifers in forests, and can be a problem in forest landscapes.

IDENTIFICATION

Leafy mistletoes have green stems with thick leaves that are nearly oval in shape. Plants often develop a roundish form up to 2 feet or more in diameter. The small, sticky, whitish berries are produced from October to December. Evergreen clumps of mistletoe are readily observed on deciduous trees in winter when leaves are off the trees.

LIFE CYCLE AND BIOLOGY

Mistletoe plants are either female (produce berries) or male (produce only pollen). The berries of the female plant are small, sticky, and whitish; they are very attractive to birds such as cedar waxwings, robins, and others. The birds feed on and digest the pulp of the berries, excreting the living seeds that stick tightly to any branch on which they land. In most cases, the initial infestation occurs on larger or older trees because birds prefer to perch in the tops of taller trees. A heavy buildup of mistletoe often occurs within an infested tree because birds are attracted to the berries, and may spend a good deal of time feeding on them. In addition, seeds may fall from mistletoe plants in the upper part of the tree, creating new infestations on the lower branches. The rapidity with which mistletoe spreads is directly related to the proximity and severity of established infestations, and newly planted trees can be quickly infested if they are growing near old, heavily infested trees.

After the mistletoe seed germinates, it grows through the bark and into the tree's water-conducting tissues, where root like develop. They gradually extend up and down within the branch as the mistletoe grows. Initially, the parasitic plant grows slowly; it may take years before the plant blooms and produces seed. Broadleaf mistletoes have succulent stems that become woody at the base. Old, mature mistletoe plants may be several feet in diameter, and on some host species, large swollen areas develop on the infected branches where the mistletoe penetrates. If the visible portion of the mistletoe is removed, new plants often resprout.

Dwarf mistletoes are smaller plants than broadleaf mistletoes, with mature stems less than 6 to 8 inches long. Dwarf mistletoe shoots are nonwoody, segmented, and have small scalelike leaves. While broadleaf mistletoe seeds are dispersed by birds, dwarf mistletoe seeds are spread mostly by

their forcible discharge from fruit, which can propel seeds horizontally into trees up to 30 to 40 feet away.

DAMAGE

Broadleaf mistletoe absorbs both water and mineral nutrients from its host trees. Healthy trees can tolerate a few mistletoe branch infections, but individual branches may be weakened or rarely killed. Heavily infested trees may be reduced in vigor, especially if they are stressed by other problems such as drought or disease.

MANAGEMENT

For treatment of existing trees it is important to remove mistletoe before it produces seed and spreads to other limbs or trees. Mechanical control through pruning is the most effective method for removal. Growth regulators provide a degree of temporary control but repeated applications are required.

Mechanical Control

The most effective way to control mistletoe and prevent its spread is to prune out infected branches, if possible, as soon as the parasite appears. Using thinning-type pruning cuts, remove infected branches at their point of origin or back to large lateral branches. Infected branches need to be cut at least one foot below the point of mistletoe attachment. Done properly, limb removal for mistletoe control can maintain or even improve tree structure. Severe heading (topping) is often used to remove heavy tree infestations; however, such pruning weakens a tree's structure, and destroys its natural form.

Mistletoes infecting a major branch or the trunk where it cannot be pruned may be controlled by cutting off the mistletoe flush with the limb or trunk. Then wrap the area with a few layers of wide, black polyethylene to exclude light. Use twine or tape to secure the plastic to the limb, but do not wrap it too tightly or the branch may be damaged. Broadleaf mistletoe requires light and will die within a couple of years without it. It may be necessary to repeat this treatment, especially if the wrapping becomes detached or if the mistletoe does not die.

Chemical Control

The plant growth regulator ethephon (Monterey Florel brand) may be used as directed by the label to control mistletoe in *dormant* host trees. To be effective, the mistletoe must also be dormant and the spray must thoroughly wet the mistletoe foliage. Mistletoe comes out of dormancy before most trees, so the ideal time to treat is from November 1 through the end of January. By treating when trees are dormant, the tree foliage will not get in the way of the treatment and the mistletoe clumps are more visible than when leaves are on the tree. Spraying provides only temporary control, especially on well-established infestations, by causing some of the mistletoe plant to fall off. The mistletoe will soon re-grow at the same point, requiring retreatment.

This article adapted from Cooperative State Research, Education and Extension Service, USDA. Please contact Ken Churches at cdcalaveras@ucdavis.edu or (209) 754-6475 with your agricultural questions. To speak with a Certified Master Gardener: Calaveras (209) 754-2880, Tuolumne (209) 533-5696, Amador (209) 223-6837, El Dorado (530) 621-5543.