

Mistletoe Management

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Eastern mistletoe (*Phoradendron serotinum*) is an evergreen parasitic plant that is native to the southeastern part of the country. It grows on a number of landscape tree species including pecan, oak and maple.

IDENTIFICATION

Leafy mistletoes have green stems with thick leaves that are nearly oval in shape. Plants often develop a rounded 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 easily seen on deciduous (bare) trees in winter.

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. The living seeds they excrete stick tightly to any branch they fall upon. The early infestation occurs on larger or older trees because birds prefer to perch in the tops of taller trees.

Seeds fall from mistletoe plants in the upper part of the tree, creating new infestations on the lower branches. How fast mistletoe spreads is directly related to how close and how severe other trees are infested. 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 trees water-conducting tissues where it takes vital nutrients from the tree. It grows root-like structures called haustoria inside the tree. The haustoria 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 re-sprout from the haustoria.

DAMAGE

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

MANAGEMENT

In newly developed areas, or in older established areas where trees are being replaced, the ideal method of preventing mistletoe is to plant tree species that are resistant or moderately resistant to mistletoe. Reduce the spread of mistletoe to new trees by controlling it in the surrounding 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. To protect surrounding trees remove severely infested trees and replace with resistant species.

MECHANICAL CONTROL

The most effective way to control mistletoe and prevent its spread is to prune out infected branches 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 in order to completely remove the haustoria. Done properly, limb removal for mistletoe control can maintain or even improve tree structure. Severe heading (topping) to remove heavy mistletoe infestations destroys a tree's structure. It is best to remove severely infested trees because they are a source of mistletoe seed.

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. In some tree species, callus tissue will form under the plastic further weakening the limb. 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 falls apart or the mistletoe does not die.

Simply cutting the mistletoe out of an infested tree each winter, even without wrapping, is better than doing nothing at all. Even though the parasite will grow back, spread is reduced because broadleaf mistletoe must be several years old before it can bloom and produce seed.

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 spray must thoroughly wet the mistletoe foliage. The ideal time to treat is in early spring as temperatures begin to warm, but before the tree begins to grow new leaves. Daytime temperatures must be above 65 degrees Fahrenheit for good results. Spray only the individual mistletoe plants, not the entire tree. By treating when trees are dormant, the tree foliage will not get in the way of the treatment and the mistletoe is 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 regrow at the same point, requiring re-treatment.

RESISTANT SPECIES

Some tree species appear resistant to broadleaf mistletoe. Sweetgum, sycamore, and conifers such as redwood and cedar are rarely infested. These or other resistant species should be considered when planting in infested areas.

INTEGRATED PEST MANAGEMENT IN A COMMUNITY

An effective mistletoe control program in a community requires a combination of methods and the cooperation of developers, homeowners, businesses, and public agencies. Property owners can greatly reduce mistletoe infestations in their own trees, but without community cooperation, infestations will recur. Public wooded areas, such as parks and stream banks next to urban areas, can be a constant source of seed and, therefore, mistletoe

infestation. For this reason, the planting of tree species resistant to mistletoe infestation should be a part of every city and park plan.

DANGER

Mistletoe is poisonous to cats, cattle, and many other animals including humans.

COMPILED FROM

Perry, E. J. 1995. *Broadleaf Mistletoe in Landscape Trees*. Univ. Calif. Coop. Ext., Marin County, HortScript #14.

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