



# NEWSPAPER ARTICLES

## The Magic and Mischief of Mistletoe (December 17, 2022)

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Since the 18<sup>th</sup> century, one of the sweetest of Christmas traditions is the stolen kiss under the mistletoe. An ancient Celtic ceremony based on a mistletoe elixir meant to cure infertility seems the likely origin of the mistletoe's connection with love and romance. Setting aside, however, the holiday-entwined tradition, there are many reasons to appreciate this berry-producing parasite we call mistletoe. But, beware...there are also many reasons to carefully manage this mischievous plant.

Basically, all mistletoes grow as parasitic branching structures in the crowns of trees or shrubs. There are approximately 1300 mistletoe species worldwide. The UC IPM website (University of California Integrated Pest Management program) advises us that healthy trees can tolerate mistletoe on a few branches. However, "if an infestation is severe, trees can weaken, have stunted growth or dead branches, or die completely."



In California, mistletoes are identified as either broadleaf or dwarf. Although closely related, there are differences in their life cycles, and in the damage they cause their hosts. All mistletoes belong to the sandalwood family *Santalaceae*. The broadleaf mistletoes are *Phoradendron* (which in Greek means "thief of the tree") and *Viscum*; dwarf mistletoes belong to the *Arceuthobium* species. Identification of mistletoe type is necessary to control damage and manage treatment. Broadleaf mistletoes can infest a wide range of hardwood trees: Alder, Flowering Pear, Ash, Birch, Box Elder, Cottonwood, Locust, Silver Maple, Walnut, and Zelkova. Conifers are less often infested by broadleaf mistletoes, but they are more susceptible to attack by dwarf mistletoes.



Now to more broadleaf mistletoe detail. This plant, sometimes called leafy mistletoe, has thick oval leaves and green stems. The plants can develop into shrublike clusters up to 2 feet in diameter and are easily observed in winter on deciduous trees. The *Phoradendron* species has hairy leaves, while the *Viscum* leaves are smooth. Now here's where broadleaf mistletoes become interesting in their lifestyle and form. They are actually "hemiparasites," which means they can perform their own photosynthesis but rely on hosts for water and nutrients.

In California, between October and December, the female broadleaf mistletoe plants produce small white-colored sticky berries. Birds, especially cedar waxwings and robins, are very attracted to these berries. The sticky, defecated living seeds stick tightly to the branches where they land; if birds spend significant time on an individual tree, a severe broadleaf mistletoe infestation can occur. Depending on the extent of the infestation, it is usual for mistletoe plants to grow slowly, and it can be years before they bloom and produce seeds. To be safe from broadleaf mistletoes, plant resistant tree species: Bradford Flowering Pear, Chinese Pistache, Crape Myrtle, Eucalyptus, Ginkgo, Golden Rain Tree, Liquidambar, Sycamore, Pepper trees, and Bigleaf Maples.

Looking closer at dwarf mistletoes, they are smaller plants than broadleaf mistletoes, less than 6-8 inches long. Because the leaves are small and pale yellow-green, sometimes tan to reddish, they can be difficult to spot. Dwarf mistletoe seeds are dispersed not by birds but mostly by forcible discharge from the fruit. These seeds can travel up to 50 feet. (Researchers have claimed that if you put ripe berries in a paper bag and shake it, it sounds just like popping corn.) Unlike broadleaf mistletoe, which is partially parasitic (hemiparasites), dwarf mistletoes are true parasites, deriving all of their nutrients from their host plants.

While a few mistletoes can be tolerated by healthy trees, it is important to remove mistletoe before the plant produces seeds and begins to move to other tree limbs. Pruning tree branches is the recommended most effective control method by IPM (<http://ipm.ucanr.edu/PMG/PESTNOTES/pn7437.html>). By using thinning cuts, infested branches need to be cut back at least one foot below the point where the mistletoe attaches. Mistletoe will grow back, but broadleaf mistletoe will be several years old before it can bloom and return. Many foresters consider the dwarf mistletoe a "disease" that reduces the growth rates of commercially important conifer species. Ecologists point out, however, that mistletoes are not a "disease" but a native group of plants that have been around for thousands or maybe millions of years.

Additionally, Ecologists consider mistletoe to be an important part of a healthy ecosystem, as berries are an excellent food source for birds. Birds also nest in dense foliage. Raptors use thick masses of mistletoe branches (which Native Americans called "witches

broom") for nesting. These well-disguised nests provide protection against predators such as great horned owls. There are species of butterflies that depend entirely on mistletoes for their survival. Additionally, mistletoe is an important nectar and pollen source for honeybees and other native bees. Many insects eat the shoots, fruits, and seeds of the mistletoe. While mistletoe is toxic to people, berries provide high-protein feed for many mammals. Animals such as elk, cattle, and deer seek out mistletoe in winter when food is scarce.

Pharmaceutical preparations of mistletoe are sold across many European countries to treat some medical conditions; it is a popular tea drink, too. While it is sold by herbal suppliers in the US, it is not FDA-approved.

A personal holiday footnote seems appropriate to this mistletoe discussion. While traveling in Croatia several years ago, we came across "Biska," a Croatian mistletoe brandy. The popular brewer reassured us that mistletoe (at least the amount in the brandy) was "toxic" but not dangerously so. And with all the added herbs, it was definitely tasty. We brought back a bottle to share with Mom, who was living in a senior residence at the time. She and her wise and adventure-seeking senior friends of ninety years plus had great fun sharing Merry Christmas Biska Mistletoe Brandy shots without hesitation or consequence. They seemed to truly appreciate the "mischief and the magic" of the mistletoe.

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