

Dwarf Mistletoe

Dwarf mistletoes are small, leafless, parasitic flowering plants, which can infest most conifers and commonly infest ponderosa and lodgepole pine. Most mistletoes are species specific.

Dwarf mistletoe seeds generally are dispersed in August and early September. The seeds explosively discharge from the fruit at almost 60 mph, are sticky and adhere to any surface they strike. Seeds that adhere to young branches of susceptible trees germinate, and the mistletoe's rootlet penetrates the bark.

Dwarf mistletoes grow into the bark and phloem of the tree which provides the parasite with water and nutrients. The infected tree slowly dies from the top down as lower infected branches take more food and water.

Dwarf Mistletoes have a six to eight year life cycle between infestation and seed production. Mistletoes also spread slowly from tree to tree at a rate of one to sixty feet per year depending on the conditions. This allows for long-term disease management. However, when trees are heavily infested by Mistletoe, they are commonly attacked by twig and ips bark beetles that kill branches or whole trees. An infected tree can survive from seven to sixty years depending on the size of the tree and the severity of the attack.

To determine if a tree has dwarf mistletoe look for the following signs:

1. The first symptom of dwarf mistletoe infection is a slight swelling of the bark at the infection site.
2. As the parasitic sinkers become more extensive a distorted branching habit or witches broom may form.
3. Yellow foliage, reduced foliage and mortality of branches or the entire top of the tree may indicate mistletoe infections are present.
4. The parasite is identifiable when the yellow to green or brownish-green segmented shoots protrude from the infected part of the tree. These woody shoots are ½ to 6 inches long and 1/8 to 1/4 inch in diameter.



Ponderosa pine dwarf mistletoe plants.
Note thick brown shoots.



Lodgepole pine dwarf mistletoe plants.
Note thin green-yellow shoots.



Lodgepole pine with witches' brooms on lower branches and dying top branches.



Witches brooms – dense multiple branches on lodgepole pine infected with dwarf mistletoe.

Pruning and removing trees is the best management measure to reduce or eliminate mistletoe infections.

1. First remove severely infected trees or those with only a few live branches. Trees with high unreachable mistletoe will continue to shower seeds on nearby trees if not cut down.
2. The parasite can be removed from lightly infested trees by pruning off infected branches.
 - Mistletoe shoots die as soon as the tree branch is cut. Burning is not necessary.
 - When pruning keep 30 to 40 percent of the branches from the top down.
 - Trunk infections are not as detrimental as branch infections, so their removal is not necessary.
3. Plant resistant trees in heavily infested areas. Site and moisture availability will determine what trees can be planted.
 - **Ponderosa pine areas:** Replant to Douglas-fir, white fir, blue spruce, pinion pine, limber pine, bristlecone pine or Rocky Mountain juniper.
 - **Lodgepole pine areas:** Replant to englemann spruce, subalpine fir, Douglas-fir, bristlecone pine or limber pine.
 - **Douglas-fir areas:** Replant to aspen, ponderosa pine, lodgepole pine, or englemann spruce.

The above information was obtained from the Colorado State Forest Service, see www.csf.colostate.edu/pdfs/DMT.pdf for additional information.