

Tree Care Handbook, Volume 1

Flowering Dogwood



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Flowering Dogwood

Cornus florida

The word *Cornus* means 'horn,' likely referring to the hard quality of the wood. The word *florida* means 'freely flowering.'

Qualities

Height at maturity:

Full sun: 15 feet Shade: 30 feet

Spread at maturity:

Full sun: 20-25 feet Shade: 15 feet

Preferred pH:

6 to 7

Flowers:

Precede leaves in early spring.

Fruit:

Develops in summer; ripens in early fall

Vascular type:

Diffuse porous

Wood weight (live):

50 lb/cu³, dense, hard, shock resistant

Mycorrhizal relationships:

Ectomycorrhizal and Arbuscular

Landscape Role

Aesthetic Placement

Most applicable as a specimen tree; or as a uniform, but visually weighty grouping. Dogwood functions strikingly as an accent in the background, and along densely forested edges.

Fauna Relationships

Flowering Dogwoods are a food source for birds and many other animals. The ripe fruit (drupe) is high in fat content, and at least 36 species of birds and many different mammals eat them. Deer, beaver and rabbits will eat the twigs and bark.

Flora Relationships

Dogwood leaves are 2 to 3.5 percent calcium by weight and directly benefit other surrounding plants through decomposition.

Selected Cultivated Varieties

Flower color is shown in parentheses

Aesthetic Barton Bay Beauty Cherokee Brave (<i>pink</i>) Cherokee Chief (<i>red</i>) Cherokee Daybreak Cherokee Princess Cherokee Sunset (<i>purple-red</i>) Cloud 9 Plena Weaver's White Welchii White cloud	Discula resistant Appalachian Spring Jean's Appalachian Snow Kay's Appalachian Mist Plena
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Common Problems

Performance

Small leaves

The presence of small leaves in flowering dogwoods is usually related to a root problem, often as a result of mechanical injury to the roots or from infection by root pathogens. Soil fill over the roots and water-logging can cause the small leaf syndrome.

Distorted shape

A twisted or punctured appearance of the leaves is usually a result of a leaf disease such as Dogwood Anthracnose or Powdery mildew.

An uncommon condition is the “Taco” dogwood, where the tree leaves appear to be folded upward along the length of the midrib. There is no known cause, and the condition is not likely to be pathogenetic.

Poor leaf color

Drought

Leaf tends to be light-green in color, texture is papery. The leaf petiole may be bent and nearly vertical.

Saturated soil

Leaf color is yellow, texture may be normal. *Septoria* leaf spot is common in the growing late season.

Nutrient deficiency

Probably the least common cause of poor color. Note that Dogwood response to fertilization is reportedly slow.

Inconsistent Flowering

Weak or consistent lack of flowering may be the result of unique genetic variation. Dogwoods are also reportedly subject to the influence of provenance, not blooming well if transplanted far from their individual ancestral location. Some dogwoods must reach a fully mature age to produce large crops of flowers.

Insects

Dogwood borer

Synanthedon scitula

Affects: Trunk or limbs, but causes dieback in canopy

Symptoms: Active borers expel coarse, brown, sawdust-like frass, found around cracks in bark or at the base of infested plants. Tan-colored pupal skins, left protruding from the bark when adults emerge in the spring, are another sign that borers are present. Off-color foliage and crown dieback are early symptoms of Dogwood borer infestation.

Conditions: Weakened or stressed trees are susceptible. Regions of the trunk that have been injured, such trimmer injury, are predisposed to borer attack.

Cultural Controls: Avoid mechanical damage to trunk and branches, especially from string trimmers and lawn mower injuries

Chemical Control: Trees can be treated with **bifenthrin** or **permethrin**. Apply in late April and mid-July. Spray the trunk and lower scaffold limb surfaces.

Club Gall Midge

Resseliella clavula

Affects: twigs

Symptoms: club-shaped swelling on twig, 13 to 25.5 mm long

Cultural Control: sanitary pruning of infested twigs while larvae are present

Chemical Control: not recommended due to the relatively minor impact of the disease. Some species of the Club Gall Midge family *Cecidomyiidae* may prey on other plants pests, such as aphids and scales.



Image from John A. Weidhass, Virginia Polytechnic Institute and State University, Bugwood.org

Dogwood trees are a labeled species for the systemic insecticide **Imidacloprid**.

Diseases

Dogwood anthracnose

Discula destructiva

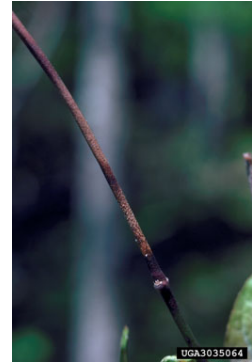
Affects: leaves, stems and trunk

Conditions: disease favored by cool, moist weather; spores mass on leaves & bark, splashing rain may contribute to spread.

Symptoms: small purple-bordered leaf spots or tan blotches. Leaves do not abscise in fall. Can spread to twigs and trunk, causing brown elliptical cankers.

Cultural Controls: dispose of diseased twigs and branches, and remove leaves of infected trees from the site.

Chemical Controls: **Chlorothalonil**, **mancozeb+thiophanate methyl**, or **propiconazole** as a preventive; 3 - 4 foliar sprays during leaf expansion in the spring, at 10-14 day intervals.



Images from Robert L. Anderson,
USDA Forest Service,
Bugwood.org

Spot anthracnose

Elsinoe corni

Affects: leaves and flowers

Symptoms: bracts in early spring have reddish-purple spots; leaves have very small spots, dark purple color, centers may turn pale yellow-gray and drop out; heavily infected leaves are smaller than normal, distorted and often killed.

Cultural Controls: evaluate irrigation, especially in spring, and reduce if necessary.

Chemical Controls: **chlorothalonil**, **mancozeb**, or **thiophanate methyl+ mancozeb** as a spray when buds begin to open; repeat when bracts have fallen, four weeks after bract fall, and in late summer after flower buds have formed.



Images from Robert L. Anderson,
USDA Forest Service,
Bugwood.org



Powdery mildew

Microsphaeria pulchra or *Phyllactinia guttata* (influence is contested)

Affects: leaves

Conditions: infects in spring; warm days 60°F, cool nights, humid air.

Symptoms: faint white, almost fuzzy coating on buds, stems, and leaf surface

Cultural controls: Direct soil watering may help. Remove infected leaves (all infected tree species) from the site, or compost.

Chemical Controls: **Myclobutanil, Propiconazole, Thiophanate-methyl, Triadimefon, Sulfur, Copper**

Leaf Spot

Septoria cornicola

Affects: leaves

Conditions: appears in late summer or early fall

Symptoms: dark brown inter-veinal spots, 6 mm diameter

Cultural Controls: Dispose of infected leaves (all infected tree species) off site, or compost leaves thoroughly

Chemical Controls: not recommended due to the relatively minor impact of the disease



Crown Canker

Phytophthora cactorum

Affects: Trunk and main limbs

Conditions: Usually occurs on new transplants or trees with root injuries, especially in poorly drained areas

Symptoms: In early stages, the canker may ooze dark-colored fluid. Diagnose by carefully removing thin layers of bark in the affected area. The inner bark, cambium, and sapwood will show discoloration.

Cultural Controls: Improve drainage. Evaluate irrigation, and reduce if necessary.

Chemical Controls: **Metalaxyl** (Subdue) is effective as a preventative treatment, applied at 2-3 week intervals.

Care

Pruning

Livewood

Pruning of live healthy limbs and branches should generally be dictated by the spacial needs of the landscape. Prune early in the tree's maturity, but only when the tree is firmly established after planting. Forecast where future branches will conflict with the landscape, and remove potentially problematic branches while they are between 0.5 - 1 in./1.25 - 2.5 cm diameter.

For Dogwoods, there is no evidence that pruning live limbs or thinning for the sake of appearance is a beneficial practice in terms of tree health and longevity. Even moderate live wood pruning (over 10% of total canopy mass) may actually reduce the lifespan of mature Dogwoods.

Timing

Healthy Dogwoods may be pruned anytime outside of the flowering and leaf expansion period.

Deadwood

Remove dead limbs at the branch collar as soon as possible.

Mulching

Established and newly planted dogwoods are somewhat sensitive to changes in soil mulching. Never place mulches directly against a Dogwood's trunk.

Pine straw - good, maximum depth 3 inches.

Pine bark - good, maximum depth 2 inches.

Leaves - good. Do not use leaves that may be infected by *Discula* anthracnose or other known leaf diseases.

Wood chips - Use only if other mulches are not available. Only use partially composted wood chips, to maximum depth of 2 inches.

Inorganic mulches - unknown affect

Irrigation

Delivery: Do not use sprinklers or misters. Use drip irrigation or soaking from a hose.

Frequency: dry periods in spring and summer, deep soaking no more than once per week

Soil target: Dogwoods will tolerate moderately dry soil for short periods. Do not water if the surrounding soil is poorly drained. Infrequent irrigation is best; discontinue if regional rainfall is normal.

Other Considerations

Dogwoods are relatively susceptible to herbicide and salt injury.