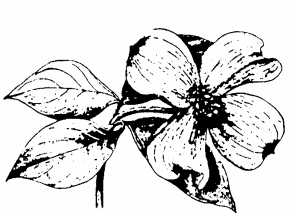
Cornell Cooperative Extension
Nassau County

Horticulture Program
Eisenhower Park
East Meadow, N.Y. 11554

Home Grounds Fact Sheet

Flowering Dogwood



The Flowering Dogwood (*Cornus florida*) is a popular ornamental tree native to the northeastern United States. It has an appeal for every season. There are colorful white bracts in spring, good foliage in summer, brilliant red berries in late summer and fall, vivid autumn color and a picturesque horizontal branching habit in winter.

While dogwood is hardy to zone 5, it is recommended that when planting dogwood on Long Island, which is zone 6, make sure that the trees you buy were grown from seed collected from this area. Seedling material from southern sources is not adequately hardy, which may cause minimal flower production principally caused by lack of flower bud hardiness.

Culture

Dogwood grows best in an acid, well drained soil. Use organic matter as necessary. Mulch to maintain a cool, moist soil. Since dogwood is an understory tree, it grows best in partial shade. However, full sun is acceptable if the tree is mulched well and watering is monitored carefully during the heat of summer.

PROBLEMS
DISEASES and INSECTS

Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

** A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g.* ***insect****icide,* ***fung****icide,* ***herb****icide, etc.*

DISEASES

Leaf Spots

A number of different fungi cause brown or dead spots with reddish purple borders on dogwood leaves. *Discula sp., Collectotrichum gloeosporoides, Elsinoe orni* and *Septoria cornicola* are most common and can best be distinguished by microscopic examination of the tiny, black pustules that they produce in the spots. Spores from these fungi are spread rapidly during extended periods of cool, wet, spring weather.

Management

In autumn, rake and discard or destroy all fallen leaves, fruit and branches. Practice plant sanitation. When foliage is not wet, carefully prune or remove and discard or destroy affected plant parts. If severe, verify diagnosis. Apply sulfur, if needed, according to label directions.

Leaf Scorch

One of the most common troubles of Dogwood is leaf scorch. Affected leaves present a dry, scorched appearance, as well as a pronounced cupping during prolonged dry weather. The discoloration may be light or dark brown, depending on the kind of tree attacked. The effect is usually first evident between the veins or along the margin of the leaf. Ordinarily, all the leaves on a given branch are affected more or less uniformly.

Leaf scorch is a physiological disorder caused by failure of the tree to supply a sufficient amount of water to the leaves at a critical time. If the water supply is deficient for any reason, the exposed leaves actually dry out. Trees with defective root systems are particularly subject to this problem, as are those whose roots have been partly removed or covered with impervious materials such as asphalt or concrete pavement. Trees growing in poor soil where drainage is excessive and the water table is low are more apt to show this problem.

Management

Anything that can be done to improve the tree's general condition helps reduce the injury. For trees with permanently suppressed or injured growth systems, it is advisable to prune some of the branches to maintain a more even balance between the top of the tree and the

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DISEASES

root system. Fertilizers, particularly those containing high amounts of potash, reportedly reduce leaf scorch. Dogwoods react adversely to drought, making thorough watering necessary during dry spells. In many cases where severe and permanent injury to the root system exists, a recurrence of the condition may be expected during periods of drought.

Canker

The first evidence of this disease is usually a reduction in the number and size of the leaves. They may appear stunted and curled, lighter green than normal, and turn prematurely red in late summer. Later, twigs and branches die and the whole tree finally succumbs. The entire process may take several years.

As trees become weakened, they are attacked by borers, which serve to aggravate the disease. The injury to the tree is caused by the death of a portion of the bark region, usually at or near the surface of the ground. The fungus, *Phytophthora cactorum*, is responsible for the slowly-developing basal canker. In the early stages, the canker is not readily seen. The only initial visible evidence may be the flow of dark-colored sap from one or a few points above the affected area. Later the bark dries and crumbles away, leaving the wood exposed; eventually the trunk is girdled. Infection takes place through injuries to the root crown or sometimes by way of other mechnical injuries like borer tunnels or lawn mower damage. Borers are particularly effective in permitting reinfection to take place after cankers have started to heal.

Management

Crown canker cannot be controlled after the fungus has invaded the trunk base. However, if the infection is confined to a small area, control may be possible by excising the canker.

Remove discolored wood down to the heartwood. Also remove healthy wood for 1 1/2" around the discolored area. Chances of success are greater with early detection and complete removal. Fertilize and water the plant to restore its vigor and counter-act the injury caused by removing the canker. Areas where dogwoods have died from phytophthora infections should not be replanted with dogwood for several years unless the soil is fumigated. Prevention is still the best control by avoiding any possibility of mechanical wounding to the lower trunk area. *Cornus florida* also seems less tolerant of transplanting than other dogwood species. The obvious decline from canker may only appear after many years when the tree has experienced extreme growing conditions, improper care and/or is approaching maturity. The initial infection to the upper roots and lower trunk may have occured during the digging process when the tree was moved. Careful digging practices to avoid root injury and transplanting at a young growth stage (before the root system becomes extensive) should help reduce the possibility of dogwood canker infection.

Flower and Leaf Blight *(Botrytis cinerea)*

This fungus, primarily active in rainy weather, causes the white flower bracts to turn brown and fall onto the leaves before the end of bloom. The leaves turn brown, curl and shrivel.

Management (see note A.)

Dogwood Anthracnose *(Lower Branch Dieback)*

Cold winter weather, spring rains, summer drought and a fungus (*Discula sp.*) have combined to kill leaves and twigs on many wild and cultivated dogwoods in recent years. Many trees with severe infections have been killed. Others are sufficiently weakened to be "finished off" by dogwood borers or Armillaria root rot. The disease starts as a leaf spot, but the pathogen readily colonizes entire leaves and proceeds down the petiole to the twig, where it invades and kills the bark. Direct infection of the current season's twigs frequently occurs. Branches low in the crown are usually killed first.

Management

Keep trees well-watered and fertilized. Rake and destroy fallen leaves and prune dead branches. **(see note A.)**

"Lawn Mower Disease"

Damage from lawn mowers and string trimmers (weed-whackers) cause damage and/or girdling injury to trunks. These injuries are an open invitation to desease organisms and insects.

INSECTS

Scales

Cottony Maple Scale (*Pulvinaria innumerabilis*) occasionally infests the twigs and leaf undersides of flowering dogwoods. Its cottony masses (containing between 1500 to 2000 eggs) are quite conspicuous and, although not especially serious, can predispose the tree to borer attack.

Management

Apply horticultural oil in April for control of insect during dormant period. **(see note A.)**

Calico Scale (*Lecanium cerasorum*), previously only found on the West Coast, has recently appeared in large populations on Long Island. The distinct whitish-dark brown calico markings of this 1/4" diameter globular scale provide a positive field examination when present on dogwood twigs. Excessive honeydew is excreted by this scale onto foliage below. With the sooty mold fungus growing on the honeydew, the rate of photo-synthesis is decreased, causing a weakening of the plant.

Management

Since this scale is in the genus *Lecanium*, a superior oil in early spring is suggested. Timing of the crawler stage in this area is not known, so no official recommendation can be made at this time.

INSECTS

European fruit lecanium scale (*Parthenolecanium corni*) are soft scales with initially no discernible covering. After the female lays eggs, her hemispherical body dries, becomes brittle and turns brown, protecting the eggs until they hatch. They can be found on smaller twigs of many shade and fruit trees and other woody ornamentals. Sooty mold usually develops on the honeydew from the scales, making a plant unsightly. Plants may show a loss of vigor as well.

Management

Apply oil in mid-April to early May for dormant treatment at 35-145 GDD*. Chemical pesticides may be applied in mid to late July at 1266-1645 GDD. If scale infestations are small, prune out affected plant parts. **(see note A.)**

Borer

The dogwood borer is a serious pest of dogwoods. The 1/2" long larvae (caterpillars) bore into the cambium, causing rough-looking bark areas. The feeding of the borers may kill branches or whole trees. Borer activity may be observed at the edge of bark wounds, in the cambium layer of larger branches, in branch crotches and on the trunk. Larvae overwinter in the bark, feed further in the spring and then pupate in the bark. Brownish, clear-winged moths emerge in May and June. Eggs are laid on the bark around scars and wounds as well as near old borer injuries. The larvae feed in the cambial regions all summer, making very distinct channels just under the bark. There is only one generation a year. Dogwood canker disease is associated with attacks by borers.

Management

Maintain the best possible health and vigor in dogwood by watering as necessary in dry seasons, fertilizing and proper pruning. Don't allow wounding of the trunk and branches. Lawn mowers are the worst culprits; borers are sure to follow frequent bruising of dogwoods by mowers. Cut wounded or cankered areas clean. **(see note A.)**

note A. Chemical pesticides are available. If you choose to use chemical pesticides, contact your local Cooperative Extension office for specific recommendations.

Alternative Plantings for Flowering Dogwood

Our native dogwood, *Cornus florida*, is in serious trouble from many different directions. Most of the previous problems - borer, canker, unsuitable growing sites - have not been so extreme and widespread as to render this species vulnerable to extinction. But within the last five years, Dogwood Anthracnose (Lower Branch Dieback) has caused incredible losses in our native Northeast woodlands and suburban landscapes.

There is no substitute for *Cornus florida*, only some other small ornamental trees that have good qualities and can be used in place of flowering dogwood. These trees have some similar characteristics, are reasonably showy, have a good record of low maintenance and are adaptable to the residential landscape.

1. ***Amelanchier canadensis***
   (Serviceberry, Shadblow, Sarvistree): profusions of nodding white flowers in April. Generally good fall leaf color and showy winter bark.

2. ***Chionanthus virginicus***
   (Fringe tree): white clusters of lacey flowers in late May. Leaves turn bright yellow in fall. An excellent specimen for full sun.

3. ***Cornus controversa***
   (Giant Dogwood): branches produced in layers or tiers. Flat-topped clusters of white flowers. Lustrous dense foliage turns red in fall. Should be more readily available.

4. ***Cornus kousa***
   (Japanese Dogwood): dense horizontal branch habit. White bract-like flowers come out in June. Late summer fruit and fall color. This species is now being overplanted.

5. ***Cornus mas***
   (Cornelian cherry): tree with dense rounded head. Small clusters of yellow flowers in March and interesting red summer fruit.

6. ***Halesia carolina***
   (Carolina silverbell): flowers in May prior to leaf emergence. They appear as rows of nodding white bells.

7. ***Oxydendron arboreum***
   (Sourwood, Sorrel tree): pyradmidal tree. Drooping racemes of white flowers appear in July. Fall leaf color is varied and brilliant.

8. ***Stewartia*:**
   interest during many seasons i.e., white camellia-like flowers with yellow centers appear in July and August, maroon fall color, and flaking vari-colored bark.

9. ***Syringa reticulata***
   (Japanese tree lilac): vigorous small tree (30'). 6" high pyramidal clusters of white blooms appear in June. Cherry-like bark.

10. ***Viburnum prunifolium***
    (Black Haw): 15' small tree. Clusters of flat-topped white flowers. Reddish leaf color in fall. Use as specimen or for massed effect.

11. ***Viburnum Sieboldii***
    (Siebold Viburnum): open rounded plant to 30'. Large flat white flower clusters in May, fruit from red to orange and black in later summer. Persistent bright red fruit pedicels.

Many of the plants named above are not commonly known or readily available. However, they are worth seeking out. If you have difficulty locating sources, an excellent resource is the Brooklyn Botanic Garden handbook, Nursery Source Manual.

Remember that diversity of proven plants is important. Never overplant one species and get a monoculture. However, if you refuse to accept a landscape without *Cornus florida*, plant them. Just make sure they are restricted to the most favorable growing sites and are given all the care they require.

* GDD - Growing Degree Days are explained in Home Grounds Fact Sheet #E-1-0.

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