



Fact sheet

Plant Disease Control

AN INTEGRATED APPROACH TO CONTROL OF CANKER DISEASES IN WOODY ORNAMENTALS

IV. BOTRYOSPHAERIA CANKER

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Botryosphaeria canker, caused by the fungus *Botryosphaeria dothidea* (syn. *B. ribis*), is a common canker disease of woody plants in landscape and forest settings throughout the temperate and tropical regions of the world. The disease affects plants in more than 100 genera, and is most troublesome on fruit, nut, and ornamental hosts (Table 1). *B. dothidea* is an opportunistic pathogen (or disease agent) that lives in dead wood, but readily attacks trees and shrubs that have been wounded or weakened by environmental stresses such as drought or winter freezing injury. The disease can result in a branch dieback that may kill or severely reduce the aesthetic value of trees.

SYMPTOMS

Symptoms of *Botryosphaeria* canker vary with the species and age of the host and the severity of the predisposing stress. The fungus kills bark and sapwood tissue, causing areas of dead tissue, called cankers, to form. Cankers range from small, elliptical lesions that may coalesce into large diffuse areas of blighted tissue, to large, sunken, and elongate cankers delimited by callus tissue. Affected bark turns dark, rough, and may peel away. Multiple cankers of various sizes often develop on branch tissue, growing slowly until the limb is girdled and killed. The entire plant may be killed once the canker moves from the branch into the main stem.

DISEASE DEVELOPMENT

B. dothidea survives the winter in groups of small, round “fruiting bodies” (or structures that produce spores) embedded near the surface of cankered tissue killed by the fungus. Infections occur when spores are splashed by rain or carried by wind from these fruiting bodies to susceptible tissue. Spore dispersal can occur during most of the year, but is most extensive during late spring and early summer. Infection occurs when germinating fungal spores penetrate wounds or other openings in the bark. Pruning wounds, cracks, leaf scars, lenticels, sunscald lesions, and senescent branches are all good entry sites for the fungus. Symptom development may take 3 months to a year.

MANAGEMENT AND CONTROL

An integrated approach to control of most canker diseases, including *Botryosphaeria* canker, begins with the selection of disease-free planting material. Be sure to choose top quality material from a reputable dealer so that the disease is not moved into the landscape. Always inspect plant material thoroughly before planting.

Most healthy, vigorous plants are resistant to *Botryosphaeria* canker. Environmental stress, however, can readily predispose plants to attack.

Healthy trees and shrubs can resist infection and will slow or prevent spread of the disease throughout the branch. When planting new trees and shrubs, choose a site that is suitable to the horticultural requirements of the species. For example, planting sun-loving plants in shady locations, or growing species outside their natural range, can predispose these plants to this canker disease. On older, established trees, maintain or improve plant vigor with proper pruning, fertilization, and irrigation. Drought stress predisposes trees to canker development, so watering trees during times of drought is important.

Since *B. dothidea* is an opportunistic fungus that infects stressed plants through existing openings, it is important to protect plants by carefully avoiding all unnecessary wounding. Closely monitor and control insects, mites, and other potential disease problems. Through careful monitoring and early detection, Botryosphaeria

canker can be eradicated before a significant reduction in the aesthetic value of the tree occurs. Branches with symptoms of canker should be promptly pruned during dry weather at least 6 to 8 inches below affected tissue. If possible, remove the branch from the tree by properly cutting the limb flush to the branch collar, not flush to the trunk. To prevent the spread of this disease on pruning tools, surface-sterilize tools between cuts with denatured alcohol or 10% bleach. Since the fungus can persist and sporulate in dead plant material for extended periods, branches cut from diseased trees should be taken from the site and, if possible, composted.

Fungicides or wound paints have not proven to be an effective control of most canker diseases, including Botryosphaeria canker, and are not recommended. For current management recommendations, contact your local County Extension Office.

Table 1. Common woody hosts of Botryosphaeria canker¹.

alder	catalpa	hawthorn	mulberry	rhododendron
apple	chestnut	hibiscus	oak	rose
ash	chinaberry	hickory	peach	Russian olive
azalea	cotoneaster	holly	pear	spice bush
barberry	crabapple	honey locust	pecan	sumac
basswood	currant	hop hornbeam	persimmon	sweetfern
birch	dawn redwood	horse-chestnut	photinia	sweet gum
bittersweet	dogwood	juniper	pieris	sycamore
black locust	Douglas-fir	katsura tree	pine	tree-of-heaven
blueberry	elder	linden	plane tree	tulip poplar
brambles	elm	magnolia	poplar	viburnum
buckeye	firethorn	maple	privet	walnut
buckthorn	fringe tree	mimosa	pussy willow	waxmyrtle
butternut	fuchsia	mountain ash	quince	willow
camellia	grapevine	mountain laurel	redbud	yellowwood

¹Source: Sinclair, W. A., Lyon, H. H., and Johnson, W. T. 1987. Diseases of Trees and Shrubs. Cornell University Press, Ithaca, NY.