

Plant Guide

BLACK CHERRY

Prunus serotina Ehrh.

Plant Symbol = PRSE2

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Alternate Names

Wild black cherry, mountain black cherry, rum cherry

Uses

Black cherry wood is a rich reddish-brown color and is strong, hard, and close-grained – one of the most valued cabinet and furniture woods in North America. It is also used for paneling, interior trim, veneers, handles, crafts, toys, and scientific instruments. Black cherry is used for reclamation of surface mine spoil.

The leaves, twigs, bark, and seeds produce a cyanogenic glycoside. Most livestock poisoning apparently comes from eating wilted leaves, which contain more of the toxin than fresh leaves, but white-tailed deer browse seedlings and saplings without harm. The inner bark, where the glycoside is concentrated, was used historically in the Appalachians as a cough remedy, tonic, and sedative. The glycoside derivatives act by quelling spasms in the smooth muscles lining bronchioles. Very large amounts of black cherry pose the theoretical risk of causing cyanide poisoning.

The fruit has been used to flavor rum and brandy (“cherry bounce”). Pitted fruits are edible and are eaten raw and used in wine and jelly. Black cherry

fruits are important food for numerous species of passerine birds, game birds, and mammals, including the red fox, black bear, raccoon, opossum, squirrels, and rabbits.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description

General: Rose Family (Rosaceae). Native trees are 38 m tall; bark of larger trunks fissured and scaly, but thin. Leaves: alternate, simple, ovate to oblong-lanceolate, 5-15 cm long, 2.5-5 cm wide, with finely toothed margins, glabrous or commonly with reddish hairs along the midrib beneath, near the base. Inflorescence is an oblong-cylindric raceme that is 10-15 cm long at the end of leafy twigs of the season, with numerous flowers; calyx tube of short lobes, petals 5, white. Fruits: berry-like, about 8-10 mm in diameter, obovoid, black when ripe; seed a single, black, ovoid stone 6-8 mm long. The common name is from the black color of the ripe fruits.

Variation within the species: The species has a number of geographic variants:

Var. *eximia* (Small) Little - Edwards Plateau of central TX

Var. *rufula* (Woot. & Standl.) McVaugh - TX, NM, AZ

Var. *serotina* - widespread in the eastern US

Var. *virens* (Woot. & Standl.) McVaugh - TX, NM, AZ

Var. *salicifolia* Koehne - Mexico and Guatemala

Var. *serotina* may reach 38 meters tall in the eastern US, but southwestern US varieties typically are smaller; southwestern black cherry (var. *rufula*) seldom grows taller than 9 m, and escarpment black cherry (var. *exima*) no taller than 15 meters. The leaves of var. *serotina* are thin compared to those of the other varieties. Domesticants and wild populations of *P. serotina* in Mexico and Central America, called "capulin" (var. *salicifolia*), have larger (2 cm) fruits, apparently through selection by native peoples. Plants previously recognized as *P. serotina* var. *alabamensis* (Mohr) Little have been taxonomically returned to species rank, as *P. alabamensis* Mohr.

Distribution

Widespread in eastern North America, from Nova Scotia, New Brunswick, and Quebec, Canada, Minnesota and North Dakota, southward to Florida and east Texas, with outlying populations in central Texas, west Texas, New Mexico, and Arizona, and south in Mexico to Guatemala. Known to be highly invasive in forests of Holland and other countries of Western Europe; also naturalized in northern South America. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Black cherry is a shade-intolerant species that primarily occurs in successional vegetation or in forest openings as well as in old fields and along fencerows. It usually occurs as scattered individuals in various types of mesic woods and second-growth hardwood forests; at elevations of 0-1520 meters. Black cherry in the southwestern US is confined to canyons, valleys, and rich bottomlands. Flowering: May-July (March-April in the Southwest); fruiting: June-October.

Establishment

Seeds may be produced on trees as young as 10 years, but maximum production in natural stands occurs on trees 30-100 years old. Some seed is produced yearly, with good crops produced at 1-5-year intervals. High proportions of the seeds are viable. Because of long-distance seed dispersal by birds and mammals, seedlings are often abundant in sites with no or few reproductive black cherry trees. Seeds that pass through the digestive tracts of passerine birds also have higher germination rates than undigested seeds.

Seeds from one crop germinate over a period of 3 years — this delayed germination allows large numbers of seeds to be banked in the forest floor. After cold stratification, seeds germinate in loose soil and forest litter; germination is higher in litter than in mineral soil. Seedlings typically grow to a height of 5-10 cm within 30 days after germination.

Black cherry also reproduces by stump sprouts following cutting or fire, and sprouting frequency remains high for trees up to about 60 years of age.

Black cherry rarely occurs in the canopy of late successional deciduous forests but buried seeds are present and an abundance of small seedlings is common in the understory. These grow slowly in dense shade, sometimes reaching 15 cm in height in 3-4 years, but any canopy opening will release this

bank of suppressed plants, which grow rapidly to overtop shade-tolerant associates. Black cherry saplings in the understory may repeatedly die back to the stem base and resprout and can persist for 40-60 years by maintaining a small above-ground size until released. Because of its abundant soil-stored seeds and sprouting ability, black cherry may dominate secondary succession following logging, fire, or wind-throw. Trees have been reported to grow to more than 250 years, although mortality increases rapidly after 80-100 years.

Management

Black cherry is sometimes grown in even-aged management — clearcutting or shelterwood cuts are used, depending on the availability of soil-stored seed. Where deer populations are high, successful regeneration may require that larger seedlings be so abundant that deer cannot eat them all. Because it is shallow-rooted and has a tendency to overtop its associates in mixed stands, black cherry is susceptible to wind throw. Best results in establishing black cherry on reclamation or rehabilitation sites are by planting 1-year or older nursery grown seedlings. Direct seeding has generally been unsuccessful.

The thin bark of black cherry makes it highly susceptible to girdling, and it is usually killed or top-killed by fires of moderate severity. As fire severity increases, the percentage of tree-sized individuals killed also increases. When aboveground portions are killed by fire, black cherry sprouts prolifically from the root crown or stump. This vegetative reproduction, however, depletes carbohydrate reserves and leaves plants in a weakened condition. Quickly repeated fires would probably kill any seedlings and saplings that survived the first fire by resprouting.

Pests and Potential Problems

The eastern tent caterpillar and the cherry scallop shell moth defoliate black cherry and can cause growth loss and mortality. The fungal disease "black knot" is common on black cherry — it causes elongated, rough, black swellings on the twigs, branches, and trunk.

Cultivars, Improved and Selected Materials (and area of origin)

These plant materials are readily available from commercial sources. Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation

Service will be listed under the subheading
“Department of Agriculture.”

References

- Allard, H.A. 1944. *Second year sprouts of black cherry, Prunus serotina, fruiting.* Castanea 9:117.
- Carter, K.K. 1980. *Geographic variation in black cherry (Prunus serotina Ehrh.).* Ph.D. diss., West Virginia Univ., Morgantown.
- Downey, S.L., R. Karle, A.F. Iezzoni, J.F. Hancock, & B.K. Epperson 1998. *Patterns of genetic diversity within and among black cherry (Prunus serotina Ehrh.) populations from the U.S., Mexico, and Ecuador.* Abstract, 1998 Annual Meeting of the Bot. Soc. Amer., Baltimore, MD [http://www.ou.edu/cas/botany-micro/bsa-abst/section4/abstracts/11.shtml]
- McVaugh, R. 1951. *A revision of the North American black cherries (Prunus serotina Ehrh. and relatives).* Brittonia 7:279-315.
- McVaugh, R. 1952. *Suggested phylogeny of Prunus serotina and other wide ranging phylads in North America.* Brittonia 7:317-346.
- Marquis, D.A. 1990. *Prunus serotina Ehrh. Black Cherry.* Pp. 594-604, IN: R.M. Burns and B.H. Honkala. *Silvics of North America. Volume 2. Hardwoods.* USDA Forest Service Agric. Handbook 654, Washington, D.C. <http://willow.ncfes.umn.edu/silvics_manual/Table_of_contents.htm>
- Mulligan, G.A. & D.B. Munro 1981. *The biology of Canadian weeds, 51. Prunus virginiana L. and P. serotina Ehrh.* Canad. J. Pl. Sci. 61:977-992.
- Uchytil, R.J. 1991. *Prunus serotina.* IN: W.C. Fischer (compiler). *The fire effects information system [Database].* USDA, Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory, Missoula, Montana. <http://www.fs.fed.us/database/feis/>

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