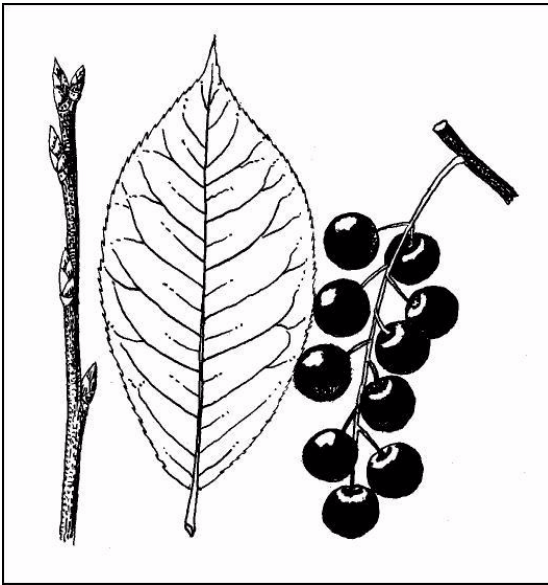


Prunus virginiana L.
ROSACEAE

chokecherry

Synonyms: *Cerasus demissa* Nutt.
Cerasus virginiana L.
Padus demissa Nutt.
Padus melanocarpa A. Nelson
Padus virginiana L.
Prunus demissa Nutt.



General Description.—Chokecherry is a thornless, deciduous shrub or small tree that grows to 8 m tall (Cronquist and others 1997). Young stems are finely puberulent, greenish at first then become glabrous and reddish in color. Older stems are ashy-gray with a reddish-brown undertone (Cronquist and others 1997, Welsh and other 1987). The alternate leaves are simple. A pair of reddish glands appears on the petioles near the base of the leaves. Leaves are 2 to 10 cm in length and 1.5 to 7 cm in width. Leaves are elliptic to oblong-ovate, finely serrated and abruptly acuminate apically. At the base, the leaves are acute to rounded. Leaves are dark green above and pale beneath. The midrib is impressed above and prominent beneath. (Cronquist and others 1997, Welsh and others 1987). Inflorescence is a raceme that is 4 to 20 cm long with leafy peduncles 2 to 8 cm long. The white perfect flowers are 10 to 20 mm wide and numerous with 4 to 17 mm long pedicels. Petals are white and are 4 to 6 mm long and suborbicular. Sepals are fringed and glabrous. Hypanthium and pedicels are also glabrous. The

mature fruit 6 to 8 mm thick, known as a drupe, is dark red to black in color (Cronquist and others 1997, Welsh and other 1987). The diploid chromosome number of chokecherry is 16, 26, or 32 (Cronquist and others 1997).

Taxonomy.—Two varieties of chokecherry are recognized: var. *melanocarpa* and var. *demissa* (Cronquist and others 1997). They are in the words of Cronquist and others 1997: “weakly separated as follows: 1. Leaves glabrous or rarely with a few tufts of hairs in the axils of the lateral leaf veins beneath; drupe blackish.....var. *Melanocarpa* (A. Nelson) Sarg. 2. Leaves pubescent; drupe dark red; California, in White Mountains and Sierra Nevada, westwardvar. *demissa* (Nutt.) Torr.”

Range.—Chokecherry occupies a variety of sites across Canada and the United States (Little 1976). It grows in 20 ecosystems and occurs in 47 of Kuchler’s plant associations (Pacific Southwest Experiment Station. 2002). The Society of American Foresters list chokecherry as occurring in 51 of its cover types, and the Society for Range Management finds chokecherry growing in 40 of its rangeland cover types (Pacific Southwest Experiment Station 2002). It ranges from Newfoundland in eastern Canada to British Columbia in the west (Little 1976). Scattered stands can be found as far north as the southern portion of the Northwest Territories of Canada and as far south as western Texas, Southwest, and southern California (Little 1976). In the United States chokecherry occurs in the Northeast, Midwest, Central Plains, Pacific Northwest, and Intermountain regions (Little 1976). Isolated patches occur in Virginia, West Virginia, Tennessee, Kentucky, North Carolina and Oklahoma (Little 1976).

Ecology.—Usually chokecherry can be found growing in canyon bottoms, sheltered slopes,

along streams and roads. It grows in a wide range of soils, ranging from Entisols to Mollisols that have textures ranging from sandy loams to clays. It can be found from 177 (Michigan) to 3,100 (Utah) m in elevation where the combinations of soil and topography permit greater than average accumulation of moisture (Pacific Southwest Experiment Station. 2002). Weakly salty soils are tolerated by chokecherry, but it cannot tolerate soils that are poorly drained or suffer from prolonged flooding. It grows in soil pH ranges from 3.5 to 7.6. It is found in numerous habitat and plant associations that range from post disturbance invaders to early successional to climax or stable (Pacific Southwest Experiment Station 2002). Chokecherry is intolerant to intermediate in tolerance of shade and resprouts from root crowns and rhizomes readily, thus giving it the ability to persist under open or forest canopies of moderate densities. It is well adapted to disturbance by fire. Chokecherry is a primary host of the eastern tent caterpillar and a fungus *Plowrightia stansburiana*, which causes black knot-like tumors on stems (Pacific Southwest Experiment Station 2002). Western X virus can kill entire stands of chokecherry.

Reproduction.—Chokecherry is among the first of the deciduous woody shrubs to leaf out and to flower in the spring. It can reproduce sexually from seeds and asexually from root crowns and rhizomes. Seeds are encased in a stony endocarp and have an after-ripening requirement for germination. Heat treatment improves germination. Seeds weigh about 0.095 grams (Grisez 1974). Passing through digestive systems of mammals and birds may enhance germination (Auger and others 2002). Also a number of birds and mammals may be responsible for long distance dispersal (Auger and others 2002). Chokecherry seeds persist in the soil seedbank.

Growth and Management.—Heights of this species vary greatly as to variety and site quality. Chokecherry may grow as high as 12 m with a trunk diameter 20 cm on some sites in the Great Basin. It has a deep root system that can grow to depths exceeding 1.8 m with lateral roots more than 10.6 m in length. Rhizomes ranging from 1 to 2 cm in diameter are produced by this species. Chokecherry rhizomes sprout at a faster rate with a higher percentage of sprouts than Gambel oak. It is moderately tolerant of browsing. However, excessive livestock grazing has damaged some populations in many areas of the northern Great Plains. Hydrogen glycoside prunasin is a toxin

produced by chokecherry that could be poisonous to grazing livestock. Highest levels (5 percent) are found in new stems and leaves. These levels diminish over the growing season to 1.2 to 2.2 percent.

Benefits.—Chokecherry adds to the biodiversity of a multitude of ecosystems. It provides habitat and food for a number of wildlife species, and watershed protection. Fruits, leaves, or twigs are eaten by bears, moose, bighorn sheep, pronghorn, elk and deer. A number of small mammals also consume chokecherry including coyotes, snowshoe hares, red foxes, bobcats, raccoons, and porcupines. Chokecherry fruits are eaten by many birds including robins, western, eastern, and mountain bluebirds, European starlings, and Columbian sharp-tailed grouse. Livestock also eat chokecherry. Winter twigs contain 38.9 percent total digestible nutrients, which is lower than a number of winter shrubs (Dietz 1972, Welch 1981.) Winter protein, calcium, and phosphorus levels are above average. Fruits are harvested to make wines, syrups, jellies, and jams. Chokecherry plants are planted as ornamentals, for enhancing backyard wildlife habitats, and as windbreaks.

References

- Auger, J., S.E. Meyer, and H.L. Black. 2002. Are American black bears (*Ursus americanus*) legitimate seed dispersers of fleshy-fruited shrubs? *American Midland Naturalist*. 147:352-367.
- Cronquist, A., N.H. Holmgren, and P.K. Holmgren 1997. Intermountain flora: vascular plants of the Intermountain west, U.S.A. Vol. 3. Part A; Subclass Rosidae (except Fabales). The New York Botanical Garden, New York. 446 p.
- Dietz, D.R. 1972. Nutritive value of shrubs. In: C. M. McKell, J. P. Blaisdell, J. R. Goodin, tech. eds. Wildland shrubs—their biology and utilization, an international symposium; Proceedings; 1971 July; Logan, UT. General Technical Report INT-1. U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT. p. 289-302.
- Grisez, T.J. 1974. *Prunus* L. Cherry, peach, and plum. In: C.S. Schopmeyer, tech. coord. Seeds of woody plants in the United States. Agriculture Handbook 654. U.S. Department of

Agriculture, Forest Service, Washington, DC. p. 658-673.

Little, E.L., Jr. 1976. Atlas of United States trees. Vol. 3. Minor Western hardwoods. Miscellaneous Publication 1,314. U.S. Department of Agriculture, Forest Service, Washington, DC. 210 p.

Pacific Southwest Experiment Station. 2002. Fire effects information system. <http://www.fs.fed.us/database/feis/plant>. 33 p.

Welsh, S. L., N. D. Atwood, S. Goodrich, L. C. Higgins. 1987. A Brigham Young University, Utah flora. Great Basin Naturalist Memoirs 9. Provo, UT. 894 p.

Bruce L. Welch, Plant Physiologist, Rocky Mountain Research Station, U.S. Department of Agriculture, Forest Service, 735 N. 500 E., Provo, UT 84606