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Growing Minor Stone Fruit in Montana

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"Stone fruit" refers to trees and shrubby plants in the genus that includes peaches, apricots, plums and cherries. This publication discusses shrub-type stone fruit, including chokecherries and so-called bush plums and cherry-plum hybrids.

The common collective name "stone fruit" refers to tree and shrubby plants in the genus *Prunus (*family Rosaceae), a large and diverse genus containing more than 400 species, including peaches, apricots, plums and cherries. Members are mostly native to the Northern Hemisphere and produce one-seeded fruit.

This publication discusses only the shrub-type stone fruit and includes the so-called bush plums, bush cherries and cherry-plum hybrids. While strongly hybridized tree plums form the bulk of the commercial plum industry, bush-type plums are usually single-species types grown on small farms and for home production. Following is a discussion of production practices for the bushy stone fruit adapted to Montana.

Chokecherries
P. virginiana L.

Chokecherry, wild cherry, wild black cherry, black chokecherry, rum chokecherry, whiskey chokecherry, chuckley-plum, sloetree, cabinet cherry

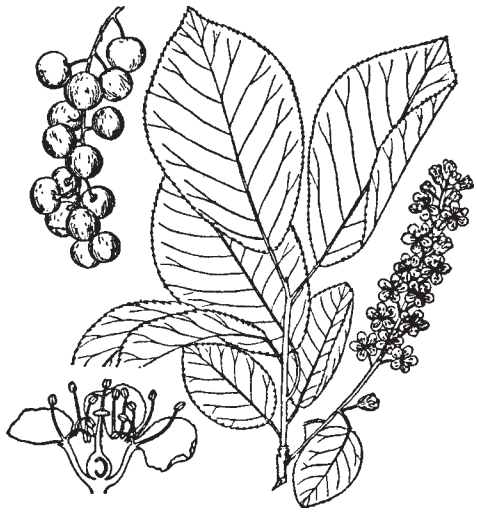
Of the cherries, the chokecherry has received the most interest from Montana growers. The fruit has long been favored for jellies, syrups, sauces, jams and wine in the prairie states and provinces of the U.S. and Canada. The fruit was widely used as food by Native Americans, who considered the vegetative parts of the plant medicinal. Plants also are used widely in shelterbelts and for erosion control.

This is a shrub or small tree up to 20 feet tall that may form thickets in the wild. The plants are strongly competitive and have a productive life span of about 40 years. The small red fruit are true cherries about a quarter-inch in diameter; they're borne in clusters of about two dozen individuals, and become purple to black, acid and astringent when ripe. The plant is native from Newfoundland to Saskatchewan and south to North Carolina and Kansas. It is hardy to USDA Zone 2 and was introduced into cultivation in 1724.

The species is highly variable, with several forms and varieties.

P. virginiana var. *demissa* (Nutt.) Sarg. forms dark red fruit and plants may reach heights of 20 feet.
P. virginiana var. *melanocarpa* (A. Nels.) Sarg. normally produces black fruit. This variety has two forms—*melanocarpa* (black-fruited) and *xanthocarpa* (yellow-fruited).
P. virginiana var. *virginiana* produces a large shrub that reaches heights of up to 40 feet on deep, well-drained loam sites and is widely grown across Canada and the US. Its form *virginiana* produces crimson to deep red fruit; its form *leucocarpa*, white to yellow fruit.

The chokecherry is noted for its toxic properties. Children and livestock have been poisoned by ingesting leaves, seeds and stems. The inner bark, buds, flowers, seeds and suckers of this plant contain the cyanogenic glycoside prunasin, which, when digested by stomach enzymes, becomes hydrocyanic (prussic) acid and may result in cyanide poisoning. The plant is most toxic in spring and summer, the leaves becoming relatively nontoxic when the fruit mature.



CHOKECHERRY

Flower buds are formed on the current year's wood and bloom on one-year-old wood. Since the plants flower later in the spring they are not especially subject to spring frost damage.

The chokecherry is self-fruitful (that is, it will set fruit by its own pollen) and insect-pollinated, with daytime temperatures below 86°F and cool nights favoring fruit set. The

use of a different cultivar for every tenth plant in the row, and supplemental honeybees, may improve fruit set. Plants rarely begin to fruit in their second year, though the first good fruit set usually occurs before the fourth year.

Fruit mature about 10 weeks after bloom. Harvest the entire cluster and strip the fruit prior to use. Each shrub will yield about 30 pounds of fruit, with from 350 to as many as 1,100 berries per pound.

Plants do best in full sun in moisture-retentive but well-drained soils and are intolerant of salty soils. Soil pH is not critical, with the optimum range between 6 and 8.

Several superior cultivars have been introduced. 'Boughen Sweet,' from Manitoba, produces large mild-flavored fruit. 'Canada Red' produces high yields of large black fruit with excellent flavor. 'Johnson,' from Minnesota, produces high yields of good-quality fruit, and the tree has high ornamental value. 'Mission Red' and 'Mission Yellow' have excellent ornamental value. 'Schubert,' a North Dakota introduction, produces good yields of large black fruit that are excellent for jams, jellies and wines.

Chokecherries are propagated by seed, suckers, rhizome cuttings, semi-hardwood cuttings, crown division, grafting onto *Prunus padus* (non-suckering) stocks and through micropropagation. Seedling plants are variable and often do not closely resemble the parent type. Sow seed outdoors in the autumn about half an inch deep. Germination varies from 30 to 70 percent and only about a quarter of the seedlings will be usable after the year or two they take to reach transplant size.

Transplant dormant plants 20 to 40 inches tall in the early spring or late fall, spacing them about 6 feet apart in rows about 20 feet apart. A dry fall followed by a cold winter can substantially increase mortality of fall-planted stock. To promote branching, cut back spring-set plants to about 8 inches. Cut back fall-set plants the following spring.

Newly established plants need about one gallon of water per plant per week, increasing to four to five gallons every two weeks in the second year. Excessive irrigation will increase the incidence of cracked and insipid fruit and promote root rot and poor mineral absorption.

Although fertilizer requirements have not been determined for this species, the following general recommendations should prove adequate. Short terminal growth and pale green leaf color suggest the need for increased fertilizer application. While plants are young and growth is vigorous, apply about two pounds of actual nitrogen per tree per year. On mature plantings, apply about one pound of actual nitrogen per tree per year. Apply fertilizer in early spring just before budswell or in late fall after the leaves have fallen.

Prune the trees lightly to keep them productive. Remove weak, damaged wood and low, spreading branches in early spring to open the center of the shrub. Remove older, nonproductive wood so that most of the remaining shoots are one to four years old—these are the most productive. Prune out cankers and other diseased tissue as soon as you see it, and disinfect pruning shears with rubbing alcohol between cuts.

Plums

Plums of commercial importance are tree type and involve species not discussed below except as they may be involved in some hybrid forms. Bush-type plums are useful for homeowners and small farmers in the northern plains because they display good hardiness and relatively good production under Montana conditions. They fall into three groups that stretch across species lines.

GROUP 1 PLUMS

P. americana, P. nigra

Group 1 contains species native to North America, particularly *P. americana* Marsh (Wild Plum, August Plum, American plum, Goose plum, Hog plum, or Sloe) and *P. nigra* Ait. (Canada plum or Manitoba Native plum), both noted for their cold hardiness (USDA Zone 3), though their red to yellow fruit are only of fair quality. This group includes the cultivars 'Assiniboin,' 'Bounty' and 'Cheney' (*P. nigra*), and 'Chilcott,' 'Manet,' 'Black Hawk,' 'Hawkeye,' 'North Dakota' and 'DeSoto' (*P. americana*). These cultivars produce abundant pollen and are the second to bloom in spring, following shortly after the hybrid plums of Group 2. They can effectively pollinate hybrid cultivars when planted at a ratio of one plant of this group to six plants of the hybrids. The American plums are grafted to wild plum or Myrobalan stocks and also can be propagated from autumn-sown seed.

Plants do best on heavy loams but tolerate other well-drained soils.

Space plants about 10 feet apart in rows spaced about 20 feet apart on sites with good air drainage. This reduces spring frost damage. Because plants most often bear on spurs, lightly thin the outside limbs each spring to give sunlight to those spurs. Remove damaged wood as needed and keep the center of the bush open. Fertilize with a light application of ammonium sulfate (about one pound per plant) before budswell in early spring.

GROUP 2 PLUMS

Hybrids

Group 2 contains hybrids between the native plums and the Japanese plum (*P. salicina* Lindl.), or between the native plums and some other species, such as *P. simonii* Carriere, the Chinese Apricot plum. They have mostly replaced native species in cultivation, although they are neither as hardy nor as prolific. Many plants in this group are not cross-fruitful, are poor pollen producers, and therefore are interplanted with native plums for cross-fertilization. The native X Chinese Apricot plum hybrids also will cross-fertilize other hybrid plums. Cultivars include 'Pipestone,' 'Pembina,' 'Cree' and 'Fiebing' (native X *P. salicina*), 'Grenville' ('Burbank' X native plum), and 'Tokata,' 'Kaga,' 'Superior' and 'Hanska' (native X *P.*

simonii). The fruit of native X *P. simonii* have distinctly pleasant, apricot-scented flesh.

Site selection and requirement are similar to those for other plums. Set one- or two-year-old plants about 15 feet apart and train them to bush form. Group 2 plants need more pruning than American plums since they bear on one-year-old wood; regular pruning will keep the plants vigorous and encourage a good supply of new wood each year. Head plants to about one foot above the ground at planting and prune to five or six strong branches in the second year. Head each of them back by about one quarter their length to promote vigorous lateral shoot growth and to reduce legginess.

Fertilize the plants as you would American plums.

The fruit must be harvested when well colored but still firm, since overmature fruit will drop quickly.

GROUP 3 PLUMS

Cherry-Plum hybrids

Group 3 contains very hardy, drought-resistant, late-blooming hybrids of either the native or Japanese plums and *P. besseyi.* These are sometimes called the Cherry-Plum or Plum-Cherry hybrids. The plants come into bearing and their fruit ripens early, and the fruit has better flavor than those of the native plums. The plants are generally short-lived (eight to 10 years), poor pollen producers, and self-sterile, and bear small fruit with poor keeping quality. 'Oka,' 'Opata' and 'Compass' are the hardiest cultivars. Since this group bears on one-year-old wood, winterkill can be a problem. Sunscald may also be a problem in some areas, particularly on plants trained to tree form.

Site and soil requirements are similar to those for other plums. Set the plants about 6 to 10 feet apart and cut existing branches back to 4 inches from their base at planting to induce strong branching near the ground. Although they are hybrids of shrubs and shrubby trees, these plants are best grown as shrubs since pruning them to tree form would destroy too much of the bearing wood. Pruning entails simply heading back branches in the second spring to encourage lateral branching and removing all dead and injured wood. As vigor declines with plant age, cut the plants back by half. You may cut back half the plant in one year and half in the next to avoid "weedy" growth and overproduction of new growth.

Fertilize the plants in early spring as needed to promote vigorous new shoot growth.

Other Minor Species

While the chokecherry and the bush plums are the more important bush stone fruit, several other minor species are suited for Montana. They include:

P. armeniaca var. *mandshurica* Maxim. Manchurian Bush apricot. Native to Korea and Manchuria, this plant is hardy only to USDA Zone 6 and so should be planted only in the warmest and most protected sites in Montana.

P. armeniaca var. *siberica* C. Koch. Siberian bush apricot. Native to east Asia, this plant is hardy to USDA Zone 5 and bears edible but very small fruit. Popular cultivars include 'Mandan,' 'Scout' and 'Manchu.' As with the Manchurian Bush Apricot, plant this species only on protected sites in the warmer parts of the state.

P. besseyi L.H. Bailey. Sand Cherry, Western Sand Cherry. The fruit of this species are purplish-black and sweet and measure about a half-inch in diameter. Plants are sometimes used as rootstocks for other *Prunus*, but they sucker profusely and are shallow-rooted. Sand cherry is often propagated by budding onto native plum seedlings and sometimes onto its own seedlings. The plant is adapted to most of Montana, being hardy to USDA Zone 3. A few superior cultivars are available.

P. cerasifera J.F. Ehrh. Cherry plum, Myrobalan plum. This plant forms a deciduous shrub or small shrubby tree bearing yellow or red fruit about one inch in diameter. The plant is hardy to USDA Zone 4 and is sometimes used as a rootstock for other *Prunus* spp. Plant on protected sites only.

P. X *cistena* N.E. Hansen. Purple-Leaf Sand cherry. This is a weak shrub hardy to Zone 3 that is usually grown as an ornamental, although its seldom-produced black to purple fruit are edible.

P. fruticosa Pall. European Dwarf cherry, European ground cherry, Siberian dwarf cherry. This is a bush up to 10 feet high that bears sour red to purple fruit about a quarter-inch in diameter resembling small specimens of 'Early Richmond' tart cherry. It is native to Europe and Siberia and hardy to USDA Zone 4, growing farther north than other sour cherries.

P. japonica Thunb. Japanese bush cherry, Japanese plum, Flowering almond. This species forms a shrub up to four feet high that produces wine-colored fruit about a half-inch in diameter. It is native to China and Korea, hardy to USDA Zone 4, and much cultivated in Japan both as an ornamental and for its fruit. Cultivars include 'Alba,' 'Kuliensis,' 'Koziensis,' 'Kinkiensis,' 'Rosea' and 'Rubra.'

P. tomentosa Thunb. Nanking cherry, Hansen's Bush cherry, Chinese bush fruit, Chinese Bush Cherry. This compact shrub grows up to six feet high and bears scarlet fruit about a half-inch in diameter. It is self-unfruitful and not highly productive. Native to temperate zones of eastern Asia, the plant is hardy to USDA Zone 3 and is especially well adapted to lighter soils. The plant has ornamental value and the fruit are used in preserves. Cultivars are propagated by budding onto Nanking cherry stocks, by seeds or by transplanting suckers.

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