

**Scientific Name:** *Prunus pensylvanica* L.

**Family:** *Rosaceae*

**Common Names:** pin cherry, fire cherry, wild red cherry, pigeon cherry, bird cherry



***Prunus pensylvanica*: a. inflorescence  
b. winter twig, c. leaf d. leaf margin  
e. flower f. fruit g. seed h&i. pollen**

### Plant Description

Perennial, slender shrub or small tree, 8 m, reddish brown branches with orange lenticles; alternate, simple, lance to oblong leaves, coming to a point, 5 to 10 cm, toothed margins; 2 to 5 cm clusters of flowers occurring from leaf axis with white petals, 6 mm, fuzzy on back (Moss 1983). Plants live to 40 years (Government of the Northwest Territories n.d.).

**Fruit:** Drupe, spherical, 5 to 8 mm, red, glossy, sour (Moss 1983).

**Seed:** One seed per drupe, 5 to 7 mm stone, ridged margin, oval, whitish to leather yellow, rough (Moss 1983).

### Habitat and Distribution

Pin cherry occurs in open woods, clearings and ravines (Moss 1983). It is often associated with forests of *Populus tremuloides*, *Betula papyrifera*, *Prunus virginiana*, and *Pinus banksiana*. Other shrubs found with pin cherry include *Amelanchier alnifolia*, *Symphoricarpos albus*, *Ribes* sp., *Vaccinium* sp., *Arctostaphylos uva-ursi*, and *Rubus* sp. (Anderson 2004).

**Seral Stage:** Relatively shade intolerant therefore seldom found in mature forests (Inkpen and Van Eyk n.d.); pin cherry may pioneer disturbed area, such as landslides, as well as logged and burned areas (Anderson 2004).

**Soils:** Infertile, rocky, and sandy well-drained soils; moist loamy soils and rich loams (Burns and Honkala 1990).

Tolerant of acidic conditions (Anderson 2004).

**Distribution:** Southwestern District of Mackenzie, eastern British Columbia to Newfoundland south to



***Prunus pensylvanica* flower buds.**



Montana, Colorado, South Dakota, Louisiana, Indiana, Virginia (Moss 1983).

### Phenology

Flower buds appear in August or September and open between April and July of the following year. Fruit ripens in July through September. Seeds mature in time with fruit.



### Pollination

Cross-pollinated by bees, butterflies and other insects (Anderson 2004).

### Seed Dispersal

Two phased dispersal, first by birds, and other fructivores (Anderson 2004) and then deposited in soil by seed hoarding rodents (Beck 2009).

### Genetics

2n=16, 32 (Moss 1983).

### Seed Processing

**Collection:** Seeds can be hand harvested or shaken from trees onto tarps.

**Harvest Dates:** Collect mid to late July or early August, when fruit are bright red in colour (Banerjee et al. 2001).

Collect August 1 to August 30 (Formaniuk 2013).

**Cleaning:** Mash fruit by hand or using a potato masher, apple-saucer, or ricer, or run through a hand

meat grinder. Alternatively, use a food processor on low speed with blunt mashing blade (not a sharp blade) or use a blender with blades covered by plastic tubing or duct tape. Suspend residue in water and mix. Allow seeds to settle and decant water with floating and suspended larger chaff. Repeat this step until seeds are clean. Sieve and place seeds on paper towel or cloth to dry. Dry at room temperature or up to 25°C preferably over a moving air stream.

**Seed Weight:** 34.4827 g/1,000 seeds.

45.8 g/1,000 seeds (Royal Botanic Gardens Kew 2008).

**Fruit Volume:** 1,620 fruit/L (1,620 seeds/L fruit).

**Fruit Weight:** 3,310 fruit/kg (3,310 seeds/kg fruit).

**Average Seeds/Fruit:** One seed/fruit.

**Storage Behaviour:** Orthodox; seeds can be dried, without damage, their longevity increases with reductions in both moisture content and temperature (Royal Botanic Gardens Kew 2008).

**Storage:** Stored dry in containers at cool temperatures. 76% germination after 10 years hermetic air-dry storage at 1° to 3°C (Royal Botanic Gardens Kew 2008).

**Longevity:** *P. pensylvanica* seeds have been kept for up to 10 years when stored in sealed containers at 1° to 4°C (Vilkitis 1974).

### Propagation

**Natural Regeneration:** Primarily by rhizomes and to a lesser extent by seeds (Gerling et al. 1996).

**Germination:** No significant germination (<10%) regardless of treatment.

>75% germination after 24 hours scarification in a chemical solution (0.5 M hydroxylammonium chloride) followed by a series of drastic temperature fluctuation treatments – a very time consuming and tedious process (Laidlaw 1987). 62% germination in 60 days after 60 day stratification at alternating temperatures of 20° to 30°C and 90 day stratification between 3° to 5°C (Grisez 1974).

**Pre-treatment:** 60 day cold stratification before seeding (Wood pers. comm.); Cold stratification 120 to 150 days at 3° C is recommended by Nichols (1934); 120 days stratification (Formaniuk 2013).



**Direct Seeding:** Produced vigorous seedlings (>4% emergence the second growing season and >3% the fifth growing season).

**Seed Rate:** 50 fruit/m<sup>2</sup>.

**Vegetative Propagation:** Suckers readily and root cuttings may be a successful transplanting mechanism. Can be propagated through rhizome cuttings (Johnson 2000).

**Micro-propagation:** Pruski et al. (2000) describe tissue culture methods used to propagate cultivars of *Prunus pensylvanica*.

**Greenhouse Timeline:** 20 weeks in the greenhouse before out-planting. Plants can be over wintered for spring or September out planting (Wood pers. comm.). Grow for 180 days before harvest (Formaniuk 2013).



### Aboriginal/Food Uses

**Food:** Fruit is made into jelly, pemmican and wine (Marles et al. 2000). Pits contain cyanic acid and are potentially fatal if eaten in large quantities; all other parts of the plant except the fruit contain hydrocyanic acid and may be poisonous if consumed (Royer and Dickinson 1996, Wilkinson 1990).

**Medicinal:** Fevers are treated with parts of the bark, fruit, leaves and roots. Eyewash can be prepared

from the bark and whooping cough is treated with concoctions from the root (Marles et al. 2000).

**Other:** Fruit is used to create a dye (Marles et al. 2000). Narrow strips of bark were used as rope (Royer and Dickinson 1996).

### Wildlife/Forage Usage

**Wildlife:** Birds and mammals feed on fruit of pin cherry trees aiding in seed dispersal. Deer also browses the foliage. Sharp-tailed and ruffed grouse eat the buds and the fruit (Anderson 2004).

**Livestock:** Occasionally poisonous to sheep and cattle; leaves lethal to livestock – Droppo (1987). Less palatable to livestock.

**Grazing Response:** Decreaser (Gerling et al. 1996).

### Reclamation Potential

Salvaging topsoil may preserve pin cherry seeds in seed bank. Cutting stems may result in as many as 32 suckers (Jobidon 1997). Pin cherry is an early successional species that undergoes rapid growth and plays an important role in minimizing nutrient loss and erosion (Burns and Honkala 1990). Pin cherry rapidly develops young, very dense stands following disturbance. It reduces erosion and nutrient losses by slowing runoff, and it incorporates nutrient elements into the developing biomass (Marks and Bormann 1972).

### Commercial Resources

**Availability:** Available from various commercial sources in Alberta.

Seeds have been collected by the Oil Sands Vegetation Cooperative for use in the Athabasca oil sands region.

**Cultivars:** Cultivars and species available by mail order from specialty suppliers are not suitable for reclamation purposes in Alberta.

**Uses:** This plant is used as a grafting and budding stock for sour cherry in the nursery trade (Burns and Honkala 1990). Fruit are used to make jellies, wines and syrups.

## Notes

*Prunus pensylvanica* is listed as 83% intact (less occurrences than expected) in the Alberta oil sands region (Alberta Biodiversity Monitoring Institute 2014).

## Photo Credits

**Photos 1 & 2:** Allan Carson, University of Northern British Columbia, British Columbia.

**Photo 3:** Wild Rose Consulting, Inc.

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