

**Scientific Name:** *Juniperus communis* L.    **Family:** Cupressaceae

**Common Names:** common juniper, ground juniper, dwarf juniper, low juniper



**Juniperus communis illustration**  
A. female cone B. Male cone C. Seed

### Plant Description

Prostrate or spreading dioecious shrubs, usually forming carpets or broad clumps, sometimes 1 m high; evergreen needle-like leaves, whorls of three; 5 to 15 mm long, upper surface grooved and whitish green (Royer and Dickinson 2007).

**Fruit:** Male cones are small, appearing at the ends of branches; female cones are pale blue, berry-like, 6 to 13 mm across (Royer and Dickinson 2007).

**Seed:** Dormant embryo in a semi-permeable but thick seed coat (Rook 2002).

### Habitat and Distribution

Open wooded areas and slopes, intolerant of heavy shade (Royer and Dickinson 2007, Thomas et al. 2007).

**Seral Stage:** Found in early to late successional communities (Tirmenstein 1999).

**Soil:** Can grow in coarse to fine textured soils as long as they are well drained (USDA NRCS n.d.). Drought tolerance is high and can grow in a pH range of 5.5 to 8 with a medium tolerance to salinity (USDA NRCS n.d.).

**Distribution:** Circumpolar: Alaska to Labrador and Newfoundland south to California, Colorado, southern Saskatchewan, southern Manitoba, Great Lakes, Appalachia (Moss 1983).

### Phenology

Plants flower January to April. Fruit ripens from September to October (Young and Young 1992). Seed takes up to 3 years to ripen on the plant (Government of the Northwest Territories n.d., Verheyen et al. 2005).



**Berry-like cones of Juniperus communis.**

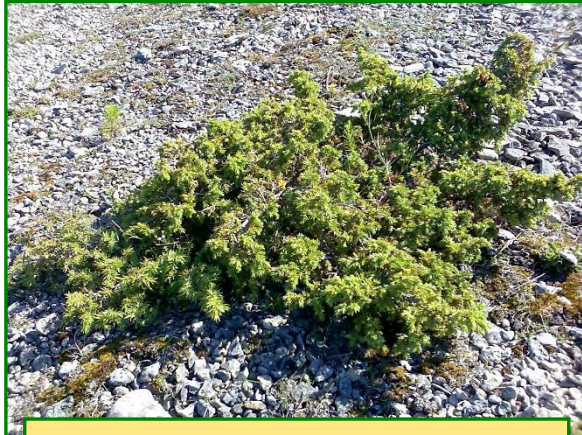


### Pollination

Wind pollinated (Hedge Nursery 2008).

### Seed Dispersal

Birds are the main agent in seed dispersal for (Verheyen, et al. 2005).



*Juniperus communis* spreading growth form.

### Genetics

2n=22 (Moss 1983).

### Symbiosis

Ectomycorrhizae do colonate but they appear to have a facultative relationship (Thomas et al. 2007). Endomycorrhizas are more common; the following arbuscular fungi associations have also been found with *J. communis* in Poland (Thomas et al. 2007).

### Seed Processing

**Collection:** Juniper berries are collected in the fall by stripping or picking them off the shrub; collect as soon as they are ripe to avoid losses due to birds and rodents (Young and Young 1992).

**Seed Weight:** 23.3 g/1,000 seeds (Royal Botanic Gardens Kew 2008).

**Seed by Weight:** 80 seeds/g (Young and Young 1992).

**Average Seeds/Fruit:** 1 to 3 seeded (Royer and Dickinson 2007).

**Harvest Dates:** Seeds are harvested in autumn (Plants for a Future n.d.).

**Cleaning:** Seeds can be recovered by maceration and floatation (Young and Young 1992).

**Storage:** Store very well; they should be dried to 10% to 12% moisture and sealed in containers (Young and Young 1992).

**Longevity:** Seed is not persistent in the seed bank (Verheyen et al. 2005).

### Propagation

**Natural Regeneration:** Reproduces by seed and layering though it is unclear if the layered piece continues to live after the original plant dies (Thomas et al. 2007, Tirmenstein 1999).

**Germination:** An experiment done by Djavanshir and Fechner (1976) showed that *Juniper spp.* germinate slowly due to a combination of dormancy and seed coat impermeability.

Viability of seed can range from 0% to 80% (Thomas et al. 2007).

With a pre-chill 90 days at 3 to 5°C germination should take about 28 days at temperature of 20°C (Young and Young 1992).

**Pre-treatment:** Using *J. virginiana* seeds, the highest rate of germination was achieved by soaking seeds for 96 hrs in 10,000 ppm of citric acid followed by 6 weeks warm stratification and 10 weeks of cold stratification (Van Haverbeke and Comer 1985).

**Direct Seeding:** Seeds must be planted in the fall; seedlings will appear in the second year (Young and Young 1992).

Juniper seeds are usually drilled in a well-prepared seedbed in rows 15 to 20 cm apart, covered with 0.6 cm of soil and mulched to protect plants from severe climate (Young and Young 1992).

**Planting Density:** 1,700 to 5,400 plants per hectare (USDA NCRC n.d.).

**Seed Rate:** No literature found.

**Vegetative Propagation:** Cuttings are easy to root but slow growing (Young and Young 1992).

**Micro-propagation:** No literature found.



### Aboriginal/Food Uses

**Food:** The berries would be dried whole and ground into meal for mush and for cakes; also used as a coffee substitute. Teas were made from the leaves, stems and berries of the plant. The bark could be consumed in times of famine to suppress hunger (Mackinnon et al. 2009).

Berries should not be eaten in large quantities as they may cause digestive upset and kidney irritation (Droppo 1987, Gray 2011, Wilkinson 1990).

**Medicinal:** Juniper berry tea is used to help digestion, stimulate appetite, relieve colic and water retention (it is a diuretic – Gray 2011), treat diarrhea, and heart, lung and kidney problems, prevent pregnancy, reduces swelling and calms hyperactivity. Teas were drunk to treat coughs, treat fevers, and to soak stiff and sore joints (Mackinnon et al. 2009, Wilkinson 1990).

The Cree use the inner bark as a poultice (Wilkinson 1990).

Also is found to have anti-mycobacterial properties (Carpenter et al. 2012). Leaves contain the antibiotic podophyllotoxin which has been found to be active against tumors (CYSIP: Botany n.d.).

**Other:** Beads for necklaces, the wood was used for lance shafts and bows, brown dye was also made from the berries, bark and needles (CYSIP: Botany n.d., Mackinnon et al. 2009, Wilkinson 1990). Used as fumigants, deodorizers and cleansers by BC Aboriginals (Wilkinson 1990). A decoction of the needles and branches can be used as a wash for dry, dandruff-prone scalp and as a facial astringent to help cure acne (Gray 2011).

### Wildlife/Forage Usage

**Wildlife:** Deer, moose, mountain goats, hares, caribou all eat juniper only when other food sources are not available. Birds and small mammals eat the cones (Tirmenstein 1999).

It is also used as shelter and nesting areas for birds, rodents and deer (Tirmenstein 1999).

**Livestock:** Will only consume if there is no other food source present (Tirmenstein 1999). Believed to be toxic to livestock (Wilkinson 1990).

**Grazing Response:** Juniper is a decreaser (Tirmenstein 1999).

### Reclamation Potential

Useful for preventing erosion (Tirmenstein 1999).

May act as a nurse species; it protects other growing shrub species from predation by large herbivores and will provide a cool growing environment for mosses and lichens (Thomas et al. 2007).

Are acid tolerant and drought tolerant and were moderately successful when they were used in a reclamation trials on sandy mine sites in Denmark (Cornwell and Kiff 1973).

### Commercial Resources

**Availability:** Is available from nurseries in Alberta. (ANPC 2010).

**Cultivars:** Gold cone and Golden Schnapps (Rook 2002).

**Uses:** They are well known for their use in flavoring gin, beer and other alcoholic beverages. They were also picked, mashed and dried into cakes for winter food (Mackinnon et al. 2009).

A scented wax which can be used for candles can be obtained by boiling the waxy coating off the berries (CYSIP: Botany n.d.).

### Photo Credits

**Photo 1:** Fungus Guy 2010.

**Photo 2:** Paul Hänninen 2007.

**Line Diagram:** Prof. Dr. Otto Wilhelm Thomé Flora von Deutschland, Österreich und der Schweiz 1885, Gera, Germany.

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