

The Bearberry

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Biology 4

- Three species of dwarf shrubs adapted to the Arctic and sub-arctic climates
- Distributed in North America, Europe, and Central America



Arctostaphylos alpina

- The Alpine Bearberry a.k.a. Mountain Bearberry, Black Bearberry
- The leaves turn from green to red in the autumn
- Berries are dark purple or black

Arctostaphylos rubra

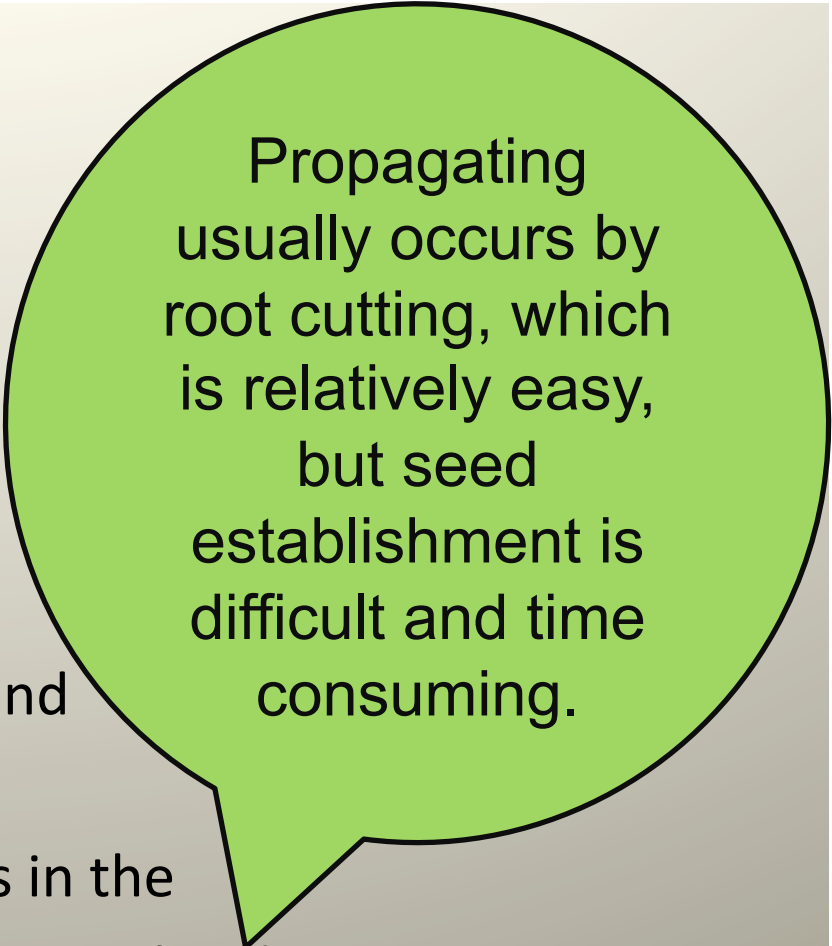
- The Red Bearberry
- Leaves fall in autumn to leave bare stems
- Berries are red

*** They are both distributed in high altitudes and range from 10-30cm high. Plant morphologies are very similar - toothed leaves whose edges turn downward and white flowers**

Arctostaphylos uva-ursi:

- Arktos meaning “bear” and stafulh meaning “grapes”
- Other common names include, Arberry, Bear’s Grape, Crowberry, Kinnikinnick, Mountain Cranberry
- Family: Ericaceae
- Evergreen shrub 2”-8” tall
- The leaf color change with the seasons, but remain thick and leathery – alternate -
- Flowers are rose or white, waxy-looking, small, they appear in early summer on short branches and are urn-shaped
- Fruit bright red, glossy, smooth, drupes - .25-.5 inches in diameter, ripen in autumn
- Stems are short and covered in brown bark
- Roots can extend to a depth of 4-6 feet.
- Largely wind pollinated, perennial plant

- Uva-ursi is usually found on dry, nutrient poor soils. In fact its leaves tend to last longer on plants growing in sandy soil.
- Propagated through seeds, or softwood cuttings
- It is often found in pine forest under the Jack Pines, White and Black Spruce, and Paper Birch.
- It possess latent buds and stores seeds in the soil allowing this species to endure fires. It can lay dormant up to three years.
- The fruit is not of high nutritional value, and tasteless when raw. It however lasts through the winter when most fruits are gone, making it important to some mammals (mainly bears) and many birds.



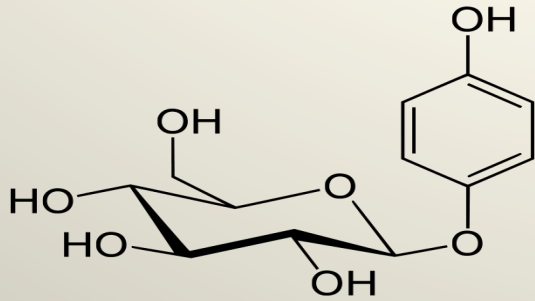
Propagating usually occurs by root cutting, which is relatively easy, but seed establishment is difficult and time consuming.

- Cheyenne, Algonquin, and other Native Americans used leaves as tobacco –Kinnikinnick
- Medicine:
 - Uva Ursi tea treats inflammation of the urinary tract, urethritis, kidney stones, and cystitis. Sprains
 - Powdered leaves applied directly to sores
 - Some tribes used it to treat venereal disease
 - Berries used in tea to ward off obesity

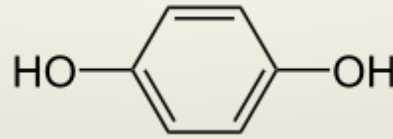


- Fruit branches are used as Christmas décor
- Seeds sold as natural holistic remedies and used for casual gardening
- Medicinal:
 - Leaves are dried for use in infusions, liquid extracts, medicinal tea bags, and tablets.
 - It is described as an anti-lithic, astringent, disinfectant, diuretic, sedative, stimulant (mild), arthritis, diabetes, and a urinary antiseptic.
 - Claimed to strengthen heart muscle and urinary tract

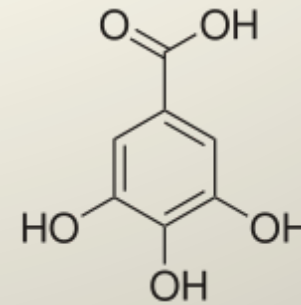
Large doses cause nausea, green urine, bluish-grey skin, vomiting, fever, chills, severe back pain. It should not be used on pregnant women or children under the age of 12.



Arbutin



Hydroquinone



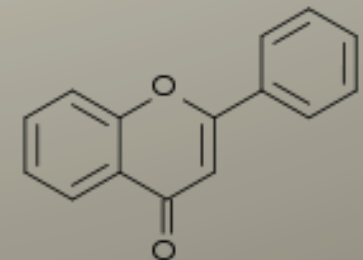
Hydrolyzable



Tannins



Condensed



Main contents of Bearberry

- Arbutin – an ether and glycoside. It prevents the formation of melanin. Its extract is used in skin lightening cosmetics, mainly in Asian countries.
- Hydroquinone – a phenol that can easily undergo oxidation to reduce to quinone. Soluble in water – it reduces silver and is therefore a major component in photographic developers. It is also used as a topical application in skin whitening. (It is a carcinogen)
- Tannins – astringent that either bind and precipitate or shrink proteins

Bibliography

- Native Plant Database. The University of Texas at Austin

http://www.wildflower.org/plants/result.php?id_plant=aruv