



**National Plant Germplasm System
Support for Alaskan Small Fruit Growers**



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www.ars.usda.gov/Main/docs.htm?docid=19218

What is the NPGS?

The National Plant Germplasm System is a cooperative effort by State and Federal agencies and private organizations to preserve the genetic diversity of plants.



<http://www.ars-grin.gov/npgs>

Our roles in crop germplasm are to:

- acquire
- conserve
- characterize
- document
- distribute




Acquire

We work with scientists, gene banks, and cooperators around the globe to collect diverse germplasm from selected crops.



Collecting red huckleberries on Washington's Olympic Peninsula

- Done through collections and donations.
- Guided by crop germplasm committees.
- In accordance with international treaties and laws.

Conserve

Collections are maintained as:

- Seeds
- In vitro storage
- Cryogenically preserved materials






Conserve

Collections are also maintained as:

- Container-grown plants
- Field-grown plants

When possible, collections are backed up at another location.




Small fruits at Corvallis and Palmer

Blueberries, bilberries, and huckleberries	Jostaberries
Crowberry	Kiwi
Currants and gooseberries	Raspberries and blackberries
Edible honeysuckles	Saskatoons
Gaultheria	Strawberries

Other crops in the NPGS

- berries and grapes
- temperate zone tree fruits
- peonies, phlox, and other herbaceous ornamentals
- hickories, maples, and other woody ornamentals
- potatoes, sweet potatoes, peppers, & other vegetables
- beans and peas
- mint, rhubarb, and other medicinals
- hazelnuts and almonds
- hops
- Safflower and cotton
- Small grains, corn, and rice
- sugar cane and sorghum
- Agave, saltbush, cactus, and other arid land crops
- citrus, figs, papaya, and other subtropical and tropical crops

Characterize

- Horticultural characteristics
- Pest and disease resistance
- Virus indexing
- Genetic analyses



Document

Information on plant accessions in the NPGS are maintained online in the Germplasm Resources Information Network.

Grin is available to the public at no cost.

<http://www.ars-grin.gov>



PI 638181
Rubus hybrid ROSACEAE
'Kiska'

Developed in: Alaska, United States (Comment: Released by Dr. Donald Dinkel in 1976 (not officially published, just locally released).)

Maintained by the Natl. Germplasm Repository - Corvallis. NPGS received: 16-Aug-1993.
PI assigned: 2005. Inventory volume: 214. Life form: Perennial. Improvement status: Cultivar. Form received: Plant.

Accession names and identifiers

Kiska
Idtype: CULTIVAR.
CRUB 1741
Idtype: SITE.

Availability

Material is available for distribution. The normal amount distributed is 2 cuttings (NOTE: You will receive Unrooted cuttings not Rooted plants unless specific arrangements have been made with the curator).

Request this germplasm

Distribute

- Plant materials are made available to researchers around the world, usually at no cost to them.
- In some cases, researchers must be associated with a scientific organization, university, or governmental agency. Each curator decides for his or her collection.
- Plant materials are often available to "cooperators" in the general public, conditional upon agreements to provide feedback on plant performance.

Requesting plant materials

Materials can be requested online through the GRIN system

<http://www.ars-grin.gov/npgs/orders.html>

Raspberry requirements

Soil pH values of 6.2 to 6.8 are best.

Soils must be well drained. Plant in raised beds.

Plant in full sun in areas with good air movement.



Photo courtesy of USDA

Purple raspberries

Hybrids between black & red raspberries. Vigorous and high yielding.

Hardy to -20° to -25°F. Perform best in USDA zones 5-7.

Fair for fresh use, excellent for processing.

'Royalty' can be used at red or purple stages.

No purple raspberries have proven reliably hardy in Interior Alaska



- Brandywine
- Royalty

Red and yellow raspberries

Both are the same species.

Cold Hardy to -20° to -30°F. Perform best in USDA zones 5-7.

Most widely adapted raspberries.

Summer- and fall-bearing (everbearing) cultivars are available.



Growing Raspberries and Blackberries
www.cals.uidaho.edu/edComm/detail.asp?IDnum=713

Summer bearing red raspberries

- Algonquin (S)
- Boyne (I, S)
- Festival (S)
- Killarney (S)
- Kiska * (I, S)
- Latham (I, S)
- Mammoth Red (I, S)
- Newburgh (S)
- Nordic (S)
- Reveille (S)
- Taylor (S)

Fall-bearing red raspberries

- Autumn Bliss (S)
- Summit (S)

Fall bearers are hard to ripen in Interior, Alaska. Best success is under high tunnels.

* most cold hardy
 (I) Popular in Interior Alaska
 (S) suited to southern Alaska

Yellow raspberries

Summer-Bearing
 ➤ Golden West

Fall-Bearing
 ➤ Amber
 ➤ Fall Gold

These varieties are best suited to mild climate areas in southern Alaska.



Photo courtesy of USDA

Strawberries

Most adaptable small fruit.

Plants bear fruit during the planting year or the year after planting.

Strawberries should be replanted at least every 3 to 4 years.



Strawberries grow well in fields, raised beds, & containers. They can be grown indoors in hanging baskets and in greenhouses.

There are three types of strawberries:

- June-bearing.
- Everbearing.
- Day-neutral.



Strawberry requirements

Soil pH of 6.0 to 7.0 is best.

Soils must be well drained. Best grown in raised beds or containers.

Strawberries do not tolerate drought.

Plant in full sun.

Keep rows no more than 18 inches wide.

Overwintering strawberries is a problem in Alaska!

June-bearing strawberries

Bear one heavy crop over about 3 weeks during late spring and early summer.

Different cultivars ripen at different times.

Bear fruit during the second and third years.

Produce ½ to 1 pound of berries per foot of row.



Everbearing strawberries

Bear two light crops during late spring and late summer with a trickle of berries in between.

Bear fruit during the second and third seasons.

Produce ¼ to ¾ pounds of berries per foot of row.

Day-neutral strawberries

Bear similarly to everbearing strawberries, but yields are higher.

Can produce fruit during the planting year. Heaviest crops are produced during the second and third years.

Yield ½ to 1 ½ pounds per foot of row during the second and third years.

Well suited to high-intensity plantings.

Can be grown as annual and greenhouse crops!

June-bearing strawberries in order of ripening

- | | |
|------------------|------------------|
| 1. Earliglo (S) | 10. Guardian (S) |
| 2. Lester (S) | 11. Lateglow (S) |
| 3. Honeoye (S) | 12. Totem (S) |
| 4. Catskill (S) | 13. Glooscap (S) |
| 5. Surecrop (S) | 14. Micmac (S) |
| 6. Cavendish (S) | 15. Benton (S) |
| 7. Redchief (S) | 16. Jewell (S) |
| 8. Scott (S) | 17. Blomidon (S) |
| 9. Allstar (S) | 18. Shuksan (S) |

Pioneer (I, S)
Toklat (I, S)

(I) Popular in
Interior Alaska.

(S) Suitable for
southern Alaska

Day-neutral & everbearing strawberries

- Day Neutral
- Albion (A)
 - Hecker
 - Fern
 - Seascape (A)
 - Selva
 - Tribute
 - Tristar

- Everbearing
- Fort Laramie *
 - Quinault **

(A) Only for annual production in Alaska
* Most cold hardy
** Heaviest yields in annual trials (1980s)
good fresh, disease susceptible.

Growing Strawberries

www.cals.uidaho.edu/edComm/detail.asp?IDnum=715
www.uaf.edu/ces/publications-db/catalog/anr/HGA-00235.pdf

Currant requirements

Currants are very cold hardy (-30° to -40°F).

Cool, moist sites are best.

Sensitive to heat and drought, and tolerate light and partial shade.

Tolerate heavy soils better than most small fruits, but perform best on deep, well drained soils.

Optimum soil pH 6.0 to 6.8.

Currants bloom early and the flowers are susceptible to frost damage.

Red and white currants

Mature in 3-4 years.

Yield 5 to 8 pounds per bush.

Used for jellies, syrups, juices, relishes, and garnishes.

White currants are used for baby food in Europe.

Generally tolerant of or resistant to white pine blister rust.



Black currants

Among the most cold hardy small fruits.

Several cultivars are resistant to white pine blister rust.

Mature in 3-4 years and yield 5 pounds per bush.

The berries are high in vitamin C and are used for jellies, syrups, & juices.

The buds, leaves, and berries are used in herbal medicines and teas.



Currants

Black

- Ben Alder (M)
- Ben Sarek (B,M)
- Crandall (B,M)
- Erkheikki VII (I)
- Melalathi (I)
- Nikkala XI (I)
- Risager (B,M)
- Swedish Black (I, M)
- Titania (B,M)

White

- Primus (M)
- White Imperial (I, M)
- White Versailles (M)

Red

- Holland Long Bunch (I)
- MN 71 (M)
- Red Lake (I)
- Rondom (B, M)
- Rovada (M)

(B) Resistant to blister rust and powdery mildew

(M) Resist. to powdery mildew

(I) Popular in Interior Alaska

Gooseberries

Mature in 4 to 5 years and yield 5 pounds per plant.



Site requirements are similar to those for currants, but gooseberries tolerate higher temperatures.

Excellent for fresh use or pastries.

For cold areas, gooseberries make good substitutes for grapes.

Gooseberry varieties

- Captivator (B, M)
- Jahn's Prairie (B, M)
- Jeanne (B, M)
- Pixwell (B, M)
- Poorman (B, M)



(B) blister rust resistant
(M) powdery mildew resist.

Few gooseberries have proven reliably hardy in interior Alaska.

Growing Currants, Gooseberries, and Jostaberries
www.cals.uidaho.edu/edComm/detail.asp?IDnum=1473

Blueberries

Domestic blueberries are now being tested on the Kenai peninsula.

Given appropriate soils, blueberries are among the easiest fruits to grow.



Excellent in edible landscapes, with red fall foliage.

Winter cold hardiness and spring and fall frost damage are issues in many parts of Alaska!

There are three types of domestic blueberries suited to cold climates:

- Northern highbush – yield 8 to 20 pounds per bush.
- Lowbush – yield 1 pound per bush.
- Half-high – yield 1 to 3 pounds per bush.

Southern highbush and rabbiteye blueberries are not reliably cold hardy for Alaska.

Blueberry requirements

Many cultivars are hardy to -25° to -33° F.

Require acid soils with a pH of 4.2 to 5.2.

Moist, well drained soil. Plant in full sun.

Best grown in raised beds. Half-high and lowbush varieties do well in large containers.

Respond well to organic mulch.

Highbush blueberries

1. Blueray (S)
2. Patriot (S)
3. Rancocas (S)

Half-high blueberries

1. St. Cloud (S)
2. Polaris (S)
3. Northblue (I, S)
4. Northland (I, S)
5. Chippewa (S)

- (I) Can be grown in Interior Alaska with snow cover.
(S) Best grown in warm areas of southern Alaska.

Growing Blueberries
www.cals.uidaho.edu/edComm/detail.asp?IDnum=711

Mountain Huckleberry

Vaccinium membranaceum



Soil pH 4.0-5.2, organic or inorganic.

Full sun to moderate shade (60% full sun).

Well-drained, light-textured soils with good moisture-holding capacity - will not tolerate drought.

Native to Southeast Alaska. Might survive in warmer parts of southcentral Alaska with 3-4 feet of snow cover.

No named varieties are available yet.

Alaska blueberry

Vaccinium ovalifolium



A.K.A. oval-leaved bilberry.

Native to coastal Alaska. Not likely to thrive or survive outside of Southeast and Southcentral coastal areas.

Requires moist, well-drained soils. Often found under the edge of forest canopies along streams.

pH 4.0 - 5.0 ideal.

Moderate shade to full sun; depends on soil moisture.

No named varieties are available yet.

Alaska blueberry

Vaccinium uliginosum



A.K.A. alpine bilberry.

Any aspect, full sun.

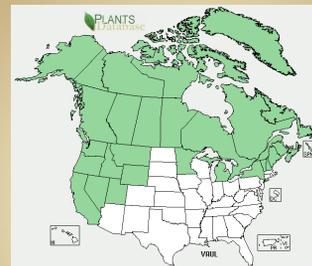
From sea level to 9,000 feet.

Native throughout much of Alaska. In colder areas, 3-5 feet of snow cover throughout the winter is beneficial.

Adapts to a wide range of soil types. Often found at edges of ponds and streams. Can be found on peaty, upland soils.

Soil pH 4.3 - 5.5, organic or inorganic.

No named varieties yet. Local, wild plants can be cultivated or managed wherever they occur.



Distribution of *Vaccinium uliginosum* in North America. Also widespread in Europe and Asia.

Growing Western Huckleberries

www.cals.uidaho.edu/edComm/detail.asp?IDnum=717

Lingonberries



Also known as:
mountain cranberry
lowbush cranberry

Vaccinium vitis-idaea
ssp. *Minus* is native to
Alaska.

Probably developed from a natural cross between blueberries and cranberries.

Resemble cranberries in appearance and flavor, and are used for relishes.

Similar to blueberries and in site requirements.

Well suited to containers and landscape beds.

Lingonberries



Photo courtesy of the Smithsonian Institution

- Erntedank
- Erntestegen
- Koralle
- Red Pearl
- Sana
- Suisa
- Regal

These named varieties are not reliably hardy in Interior Alaska and may be hard to grow in some southern locations. In colder areas, try propagating local, wild lingonberries from rhizomes.

Lingonberry Production Guide for the Pacific Northwest
<http://extension.oregonstate.edu/catalog/html/pnw/pnw583-e/>

Saskatoons

Amelanchier species in North America are known by many names, i.e. serviceberry, shadbush, & Juneberry.

Widely distributed in Alaska.

Resemble blueberries in appearance & flavor. Grow 6 to 30 feet tall with showy white flowers.

Good for wildlife plantings and naturalized landscapes.

They are grown commercially in Canada for fruit.

Excellent for edible landscapes.

Saskatoon requirements



Cold hardy to near -60°F.

Plant in full sun.

Bloom early and the flowers are susceptible to frost. Avoid frost pockets.

Adapted to a wide range of soil types and pH values.

Saskatoons do not compete well with quackgrass, Canada thistles, and other perennial weeds. Protect from browse damage.

Saskatoon Varieties

Martin (I, S)
Northline (S)
Pembina (S)
Smokey (I, S)
Thiessen (S)



Photo courtesy of Oregon State University

(I) Suitable for Interior Alaska.

(S) Suitable for Southcentral & Southeastern Alaska.

Growing Saskatoons

www.cals.uidaho.edu/edComm/detail.asp?IDnum=1508



Questions?