

Blue Honeysuckle

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Also Called:

Lonicera caerulea L. ; Honeyberries ;
Sweetberry Honeysuckles; Edible
Honeysuckles;
In Japan they are called Haskap or Haskappu.

Introduction: It isn't very often that a new fruit is discovered, and even rarer that the new fruit is something that we can grow on the Prairies! While it is new to us, it is not new to Russians and Japanese. Blue Honeysuckles are native to Siberia, North Eastern Asia, and Japan. Russians began breeding improved varieties in 1950. It is quite interesting to note that many Northern European gardeners and fruit growers are clamoring to get their hands on the newly discovered Saskatoons from Canada.

North American Research: The earliest work on this species was at Beaverlodge Alberta, when this crop was bred as an ornamental. If you have tried the Canadian "Sweetberry Honeysuckles" please realize that those old varieties were never bred for flavour and are garbage compared to newer varieties from Russia. Those old varieties have a bitterness that the Russians have bred out.

Jim Gilbert of One Green World Nursery in Molalla, Oregon regularly travels Russia looking for new fruit varieties. He obtained several blue honeysuckle varieties in Russia starting in the early 1990's and began selling them as 'Honeyberries'. He and his partner, Lorraine Gardner, have given numerous talks to grower groups in Canada and the USA which have helped to spur interest in this crop.

Maxine Thompson was the first researcher to collect, study and breed blue honeysuckles for fruit production in North America. Maxine is mainly working with Japanese types as she has found the Siberian type unsuitable for Oregon. Although she is a 'retired' professor from the University of Oregon she continues to breed blue honeysuckles.

In Canada, the University of Saskatchewan is the only institution doing breeding of blue honeysuckles. Starting



in 1998 we began testing the Siberian types. We have the largest collection in Russian Cultivars in North America with 35 clones and about 2500 seedlings. In 2005, Bob Bors visited Maxine and assisted her with the evaluation of her breeding program and brought back a large collection of Japanese selections and seedlings for testing. Jim Gilbert of Northwoods Nursery in Oregon has also generously donated many varieties to our program.

Manual: Blue Honeysuckles are so new that there are no manuals in English on the subject.

Hardiness: The Siberian types are said to be hardy to at least -50°C. At the U. of Sk. they had -47°C in 2004 without damage. The Japanese type have not yet been tested for winter hardiness.

Spacing: Within-row spacing should be about 1 meter. If mechanically harvesting, spaces between rows should be about 5m depending on tractor width. If hand harvesting, perhaps 2.5 or 3m between rows is acceptable.

Planting: Young plants are much more fragile than other fruit bushes. I think mechanical planters could break them. They can be planted in spring or late summer. We have also planted them in mid summer but shaded them with Remay row cover. Remay is made of a white synthetic fiber that gives the plant partial shade.

Pollination and flowers: Blue Honeysuckles are not self-pollinating so at least two varieties are required, three would be better. We have not yet done pollination tests to determine which varieties are compatible although we know the combination of Blue Belle and

Berry Blue is successful. It is quite interesting that blue honeysuckle flowers can take -7°C to an open flower. They bloom in early May in Saskatchewan, which is a month before our average last frost day. Fortunately, we have bee hives and 3 species of wild bees living in our windbreaks. Many species of wild bees will work at lower temperatures than honeybees so it would be worthwhile to encourage them. One way to encourage them is to not spray excess pesticides into the windbreak and to have other plants in the area that will provide blooms all summer.

Soil: Russian literature suggests 5 to 7 pH is optimum, but they have been growing well at the U of Sk site in Saskatoon with 8.0 pH.. A few growers in Saskatchewan have had plants with yellow leaves, but we do not yet know the reason. I suspect it might be high salinity or a higher pH than 8. If this happens with your plants, please send me a 1 L soil sample directly from where the plant was grown. I have no data to base fertilizer recommendations. I can only assume requirements to be similar to other berry crops. Soil testing and fertilizer incorporation prior to planting is recommended. Subsequent fertilizing should take place only during spring as rapid succulent growth occurring in the fall may be prone to winter injury.

Watering: During the first three years watering is extremely important to establishment of any fruit crop. Irrigation is less critical for established bushes. Russian literature suggest this species is 'mildly tolerant' of drought. At the U of Sk we discontinue irrigation in fall but we have clay soil that retains moisture.

Grass Cover: Grass between rows serves to reduce mud, and to compete with trees for moisture at the end of the growing season. In dry areas it is best to maintain grass-free alleys between rows. Similarly, young bushes should be kept grass and weed free to promote faster growth. In areas with adequate moisture, grass can be permitted to fill in between established bushes. Some growers keep orchards weed/grass free through July, but permit weeds and grass to grow in August to reduce the available moisture supply promoting dormancy. In winter tall grass traps snow which insulates plants and provides soil moisture for the beginning of the growing season.

Windbreaks: Protection to the west and north of any prairie orchard is highly recommended. Prevailing winds can cause winter damage by desiccation or by branches rubbing together. High winds discourage bees from pollinating the orchard. When ripe, the fruit of blue honeysuckles can be knocked off by strong winds too. Because of their hardiness, some have been tempted to use blue honeysuckles as a windbreak. I suspect they would survive but reduced pollination and increased fruit drop could occur.

Harvest: This is the first fruit crop to ripen. Berries begin to change colours in early to mid June and are ripe 7 to 10 days later during a normal year. Once they become completely purple, wait a few days for them to fully ripen. A good check for ripeness is to bite one in half. If it is green inside, it is not ripe. When ripe the

interior should be red. When unripe, berries are slightly bitter and may have a grass-like flavour or mild astringency . I suspect they will be easily adapted to mechanical harvesting. (Anyone want to donate a mechanical harvester to the breeding program?) The skin of the blue honeysuckle is rather durable and somewhat 'rubbery'. The plants do not sucker. Russian Honeysuckle varieties ripen all at once in

Saskatoon and there is only a few days difference between the earliest and latest varieties. Uniform ripening is a very desirable characteristic for mechanical harvesting. The fruit are very easy to detach by gentle shaking. In Oregon I observed that the Japanese varieties ripen rather unevenly perhaps over a two week period. It is not known if the unevenness is due to the climate, genetics or both.

Unfortunately, the varieties we have so far tested readily drop their fruit when they are ripe, unlike saskatoons and cherries. Some Russian varieties are reported to hold onto their fruit when ripe. Hopefully, some of the varieties we recently obtained will have that characteristic. Two of the goals in the breeding program are to breed for late ripening for extending the harvest season and for fruit to stay longer on the bushes.

Yield: Bushes often begin bearing the year after planting! Yield will increase as the bushes get larger. Russians report 1.5 to 3.5 kg/bush for yield. Our variety trial is too young to estimate yield.



Pests: Birds like to eat Blue Honeysuckles, especially cedar waxwings. Netting may be needed. Placing netting directly on the bushes doesn't work because birds will sit on the netting and eat. A framework is needed to hold the net several inches away from the plants, out of the reach of the bird. We have not had problems with deer nor any insect pest or disease in the field. In the greenhouse, aphids and whiteflies will attack them, but so far these pests have not appeared in the honeysuckle orchard.

Pruning: Blue Honeysuckles have bushes, not vines. This species will need minimal training because it naturally has a nice branching habit. Typically in spring all the buds will break; this is quite different than most other fruits where the top buds have apical dominance. Therefore, blue honeysuckles will not require heading back cuts. It will however require thinning cuts. We have been removing the centres of our bushes when the plants get a meter tall. When the plants become full grown they will need to be thinned. This would be done by removing a few of the largest branches at the base, taking out approximately 20% of the major branches each year. This would renew the bush so that all the main branches are relatively young and easy to shake at harvest time. Late winter and early spring is the best time to prune.

Fruit Appearance: The skin of blue honeysuckle fruits are black with a blue waxy coating called "bloom" which is similar to blueberries or concord grapes. Bloom is a natural waxy coating that some consumers mistake for pesticide residue. Most varieties have berries that are elongated; 2 cm long but thin as a pencil. Some varieties can be oval, pear shaped, or like a lumpy sack. Although consumer preference interviews suggest the pear and oval shapes are more desirable, those fruits are typically smaller than the pencil or sac type berries. I suspect the later will be the higher yielding varieties. The flower end of the fruit often looks like a belly button. Seeds are similar to tomato seeds in shape and colour but are 1/4th the size. You don't have to remove them and you don't notice them.

Flavour: Flavour can be quite variable, from a good sweet + sour to bland or bitter. While Blue Honeysuckles have their own flavour, most people feel their flavour is similar to blueberries. However, others have described their flavour as similar to: raspberries,

blackberries, rhubarb, saskatoons, and black currants. I think the flavour can vary quite a bit amongst varieties. The mild-flavoured ones are nice for fresh eating, but I find the sour ones are superior for cooking.

Bitterness can be found in the old 'sweet berry honeysuckles' such as 'Bugnet' that have been grown in Canada for over 60 years. That bitterness is strongly reminiscent of quinine and for the most part has been bred out of newer Russian varieties. In some selections, there are traces of bitterness in fresh fruit, particularly if not fully ripe, which many people find objectionable. When processed, the bitterness partially disappears. I recall my grandmother talking about 'bitter pills to swallow' and it is known that bitterness may be due to tannins and other compounds that can have health benefits. From what I have tasted, there are many Russian varieties that have no bitterness at all.

Uses: Anything that can be done with a berry can be done with a blue honeysuckle, including:

- Fresh fruit (some varieties)
- candy, chewing gum
- jam, jelly, gelatin
- ice cream, yogurt,
- pies, fruit cake, tarts, berry bars
- juice, juice-concentrate, soda pop, wine, tea
- canned fruit, frozen fruit
- medicinal uses as an antioxidant or in health foods



When cooked, the berries hold their shape but flatten as the juice comes out of them. Incidentally, the blue honeysuckles turn a very deep mahogany red when cooked.

Market: The market for this fruit will have to be developed. As the first fruit of the season it should be able to attract attention of consumers.

Giving free taste tests is recommended.

Some varieties can be eaten fresh but others may need to be processed.

Acknowledgments:

The University of Saskatchewan and Saskatchewan Agriculture and Food finance the research of blue honeysuckles and other fruit crops. To find out more information about this and other fruit crops, go to <http://www.usask.ca> and search the word "fruit".