

Observations of Japanese Haskap in Oregon

In May I visited Maxine Thompson's breeding program in Oregon during harvest and participated in the evaluation of her seedlings and she allowed me to take back many cuttings and seeds. In addition to scrutinizing her collection, we had long discussions about Haskap breeding and research. The following summarizes some of my observations and conclusions:

Maxine's breeding program focuses on the Japanese Blue Honeysuckle. She finds that the Russian cultivars are unreliable. The Russian varieties have a very short chilling requirement which may be satisfied by November in Oregon. Then if warm temperatures occur the plants start to grow and often bloom mid-winter. Then they don't get pollinated because no bees are available and likely will get cold injury when temperatures get low. Although reports in Russia state that their varieties can take -40C, Maxine has seen damage at -10C when plants begin to grow mid winter. Maxine has been getting regular yields from the Japanese Haskap which blooms 3 weeks later than Russian types (when the Russians bloom in spring). Unfortunately many growers in the warmer areas of the US are trying Russian blue honeysuckles and will likely be disappointed. The poor showing of Russian varieties in Oregon makes me wonder if they will do poorly in BC.



Maxine is hoping that the term "Haskap" will become identified with the Japanese version of the plant, and that growers will recognize that there is a difference particularly in having larger fruit and later blooming. In Saskatchewan, the Russian varieties seem ideally adapted and we have had reliable production since our first plants began bearing in 2000, but we do not yet know if Japanese Haskap are fully winter hardy. We are using Japanese Haskap in our breeding at the U of S and it is likely in a few years that we will have our own adapted varieties.

Beside the blooming problem with Russian Honeysuckles, Maxine doesn't like the small fruit size of Russian varieties. In Oregon, the Russian varieties have a fruit weight of about 0.5 to 0.7 grams with 0.8 grams being the largest ever seen. But her best Haskaps are 1.4 to 1.6 grams! I suspect that Maxine has bred larger berries in her program than those that are in Japan. I noticed that a paper describing Japan's only named variety "Yufutsu" which listed berry size to be 1.0 grams. I had been telling people that 'Japanese haskap berries' were much larger than Russian berries, but now I tell people that 'Maxine's Japanese haskap berries' are larger. At the U of Sk, we had several hybrids that had 1.4 to 1.6 grams berry size but they were very rare indeed. Our best Russian varieties had berries only 0.9 grams in size.

On the term 'Haskap' I think that we should keep that term reserved for either those varieties that come from Japan or those varieties that have substantial amount of Japanese material in their lineage. If we want to market Haskap into

Japan, it should be those varieties that the Japanese themselves think are good enough quality to be called 'Haskap'. There are in fact many small berried Russian varieties some of which are bitter that are turning people off of this crop. As far as I can see, only the Japanese Haskap or selections from the Kurile Islands (North of Japan and were once part of Japan) have genetic potential for breeding a large blue honeysuckle berry. I've been calling my program "Haskap breeding" because I fully appreciate the importance of the Japanese Haskap and will be using them extensively as parents.



Oregon had an unusually wet May which resulted in some plants suffering from a disease that caused leaves to die. It was uncertain if the shoots had died as well and we will have to wait until next year to see if those same shoots will put out new leaves.



Example of Botrytis in Haskap

Most plants had no or few problems with this disease, but a few plants were severely damaged and only one clone was killed. If a plant was infected, it was spread throughout the plant rather evenly. That many plants seemed unaffected made me feel confident that resistance was widespread in her breeding program. I put some of these sick leaves in plastic bags in a warm place and in a few days fungi grew from it that looked like Botrytis. Likewise Maxine had a pathologist confirm that it was Botrytis. We also observed that the infection was mainly on the current season's growth and very rarely went into older wood. In Japanese literature, Botrytis is mentioned as the major disease. I have occasionally seen something like Botrytis in Saskatchewan, but it has not been severe. With other fruits such as strawberries, Botrytis is thought of as a disease that usually attacks fruit and not shoots or leaves. With Haskap, the opposite seems to be true as Maxine has never seen infected berries. Because Botrytis spreads mostly with wet conditions, it may not be

possible to spray with fungicides (if any were registered) but there is every reason to believe that breeding may be the answer.

In Oregon, as in our University of Saskatchewan plots, the waxwings are the biggest pest. The week I stayed in Oregon, I watched the flock triple in size. Maxine covered her favourite plants but birds managed to get under some of the nets and got trapped inside. I suspect that they ate greater than 50% of the uncovered plants. If the netting has a 1 inch mesh, the birds can get their heads caught in the netting; a half inch netting would be too small for put their heads through so they wouldn't get stuck. As much as it might be tempting to wring their little necks, keep in mind that it is highly illegal to kill these birds and it would be extremely bad PR (especially in a pick-your-own situation) for customers to know that this had happened. At the University of Saskatchewan we put a bird net over our breeding field but kept the older plants uncovered for the birds. I observed dozens of Waxwings in the older bushes and they did not attempt to get into the breeding field.



Bird with it's head caught on the underside of netting

The Japanese Haskaps are not only bigger but come in a wonderful assortment of various shapes and sizes. Maxine was particularly fond of the heart shaped ones. As a whole, the Japanese types have berries that are thicker and rounder and I consider a better shape for mechanized processing. There was also quite a variation in flavours with some similar to blueberries, boysenberries, rhubarb, blackberries, or raspberries or combinations of these.

Maxine is testing her breeding selections in 5 locations in the US and I have 3 sites in Canada testing her seedlings. At the U of S we began crossing some of Maxine's selections with the Russian varieties and our selections. I am certain Maxine's Haskap will figure prominently in the lineage of our future varieties.

The Haskap Canada group, which is in the process of forming, is hoping to get funding to bring Maxine to speak at our next Haskap Day in June (probably the 3rd week) in 2007. That group has started a website at [Haskap.ca](http://www.haskap.ca), which will post the information. On the University's fruit website http://www.usask.ca/agriculture/plantsci/dom_fruit/ are slides from my talk on Haskap day along with pictures of Maxine and her Haskap.