

Haskap Compatibility, Flowering and Ripening Charts for U of SK Varieties

By Bob Bors, Dec 2016

Like many other fruit crops, haskap requires pollen from an unrelated variety in order to set fruit. Generally speaking, closely related plants will not set fruit with each other. Haskap plants have complete flowers meaning they have pollen and ovules. Haskap does NOT have separate male and female plants. When two compatible haskap varieties are planted close to each other, both bushes will set fruit.

But it is not enough to have compatible pollen. To pollinate each other both plants must bloom at the same time and be genetically compatible. At the U of SK, we categorize our varieties and breeding stock into 5 bloom periods: very early, early, mid, late, and very late. There is overlap between nearby groups but peak bloom is usually 5 days different between categories. For example, it is estimated that a very early and an early haskap will overlap 75% of the time. But a very early and mid-bloom varieties might only overlap 50% or 25% of the time. But a very early and a late blooming haskap usually won't overlap at all. Table 1 takes into account both genetic compatibility and overlapping of bloom.

Table 1: Compatibility chart for haskap cross pollination of University of Saskatchewan varieties. This is based on crossing these varieties together and observing peak bloom times under recent years in Saskatoon, Saskatchewan.

Compatibility Chart for haskap cross pollination, U. of Sask Varieties

	Russian* Varieties	Tundra	Borealis	Indigo Series	Aurora	Honey Bee	Boreal Blizzard	Boreal Beast	Boreal Beauty
Russian Varieties	GOOD	OK	OK	OK	OK	OK	POOR	BAD	BAD
Tundra	OK	BAD	BAD	BAD	GOOD	GOOD	OK	POOR	BAD
Borealis	OK	BAD	BAD	BAD	GOOD	GOOD	OK	POOR	BAD
Indigo Series	OK	BAD	BAD	BAD	GOOD	GOOD	OK	POOR	BAD
Aurora	OK	GOOD	GOOD	GOOD	BAD	GOOD	BAD	OK	BAD
Honeybee	OK	GOOD	GOOD	GOOD	GOOD	BAD	OK	OK	BAD
Boreal Blizzard	POOR	OK	OK	OK	BAD	OK	BAD	GOOD	POOR
Boreal Beast	BAD	POOR	POOR	POOR	POOR	OK	GOOD	BAD	GOOD
Boreal Beauty	BAD	BAD	BAD	BAD	BAD	BAD	POOR	GOOD	BAD

Good = pollen is compatible and blooms in sync, best pollination

OK = Pollen compatible but bloom is somewhat out of sync, cross pollination is likely to be good most years, with perhaps 25% less yield.

Poor = Pollen compatible but bloom is very out of sync, could have 50% less or worse reduced yield from poor cross pollination, but some years could be fine

Bad = Pollen is not compatible, or very out of sync, unlikely to work most years

* There are dozens of Russian varieties. This chart is based mostly on our experience using them in breeding

Haskap is a world-wide species found in northern areas and mountains of Asia, Russia, and North America. Wild haskap in Russia and Canada bloom much earlier than wild plants from Japan. Plants from the Kuril Islands bloom even later. Russian breeders likely bred for earlier blooming as that is certainly a desirable trait if you want early fruit. At the U of Sask, we have been deliberately breeding all the types of haskap to make a better varieties which include have varieties that bloom and ripen at different times.

Time of bloom varies from year to year. Tables 2, 3, and 4 attempts to show how haskap plant overlap their bloom under different conditions. But it is quite possible to have alternating cold and hot spells which may not fit any of the tables below. As an example, in a normal year maybe some variety starts to bloom 2 days after another. But if in that slight delay very cold weather arrives, that 2 day delay could turn into a week delay.

Table 2.

Haskap Bloom Overlap, average year					
	Very Early	Early	Mid	Late	Very Late
Russian Varieties	XXXXXXX				
Tundra		XXXXXXX			
Borealis		XXXXXXX			
Indigo Series		XXXXXXX			
Aurora		XXXXXXX			
Honey Bee		XXXXXXX			
Boreal Blizzard			XXXXXXX		
Boreal Beast			XXXXXX	XXXXXX	
Boreal Beauty				XXXXXXX	

Table 3.

Bloom Overlap, slowly warming year					
	Very Early	Early	Mid	Late	Very Late
Russian Varieties	XXXX				
Tundra		XXXX			
Borealis		XXXX			
Indigo Series		XXXX			
Aurora		XXXX			
Honey Bee		XXXX			
Boreal Blizzard			XXXX		
Boreal Beast			XXXX	XXXX	
Boreal Beauty				XXXX	

Table 4.

Bloom Overlap, fast warming year					
	Very Early	Early	Mid	Late	Very Late
Russian Varieties	XXXXXXXXXX				
Tundra		XXXXXXXXXX			
Borealis		XXXXXXXXXX			
Indigo Series		XXXXXXXXXX			
Aurora		XXXXXXXXXX			
Honeybee		XXXXXXXXXX			
Boreal Blizzard			XXXXXXXXXX		
Boreal Beast			XXXXXXXXXX	XXXXXXXXXX	
Boreal Beauty				XXXXXXXXXX	

Haskap fruits obtain almost full size 4 weeks after blooming and begin to turn purple. At 5 weeks old they are fully purple but at 6 or 7 weeks old they are fully ripe and tasty. That is for a normal year. But some varieties do develop slower especially if not pruned to let in enough light. Table 5 summarizes observation made over several years in Saskatoon and might be a good estimate for much of the prairies. But if growing haskap elsewhere it might be best to compare to harvest times of other fruits. Haskap from our breeding program usually can last 2 weeks in prime condition on the bushes once fully ripe. Some of early types have held on for 4 week, if the birds don't find them.

Table 5. Ripening times of University of Saskatchewan haskap varieties compared to other fruits grown in Saskatoon and to other types of Haskap. Weather conditions have shifted ripening a week earlier or later. If growing haskap far from Saskatoon it may be best to compare to other fruit crops to estimate ripening in your location. Fruits usually hold on 2 weeks after ripe, sometimes longer if cool weather.

	June		July				August	
	3rd week	4th week	1st week	2nd week	3rd week	4th week	1st week	2nd week
Other Fruits			Strawberries		Raspberries			
				Saskatoons		Dwarf Sour Cherries		
U of SK Haskap Varieties			Borealis		Boreal Beast		Boreal Beauty	
			Tundra		Boreal Blizzard			
			Indigo Series					
			Aurora					
			Honey Bee					
Other Haskap								
	Russian Varieties*			Japanese Varieties**		Kuril Varieties***		
	* There are dozens of varieties bred in Russia but other breeders in Eastern Europe have used Russian stock							
	** This is based on plants tested from Maxine Thompson's program and seedlings we obtained from Japan.							
	*** Kuril varieties are an ornamental, low yield type of haskap and not widely available.							