

## Northern-Hardy Fruit Evaluation Project: Highlights of Our Thirteenth Year

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The Northern Hardy Fruit Evaluation Project celebrated its 13<sup>th</sup> year at the Carrington Research Extension Center in 2018. The project brought information to over 1,100 people through tours, meetings, video conference programs and personal phone calls; in our 13 years we have reached approximately 11,800 people. We responded to five calls about starting orchards this year. In addition to constituents in North Dakota, calls came from Minnesota, Montana, Pennsylvania, Michigan, New Jersey and Rhode Island.

Fall 2017 was dry with no rain falling after September 26, although temperatures still averaged 60°F. Winter and spring 2018 were slightly below average for temperature. Summer temperatures were slightly warmer than average while the season's rainfall was 6.71" below average. Most of our summer rain fell between June 1 and July 3. Many areas of North Dakota received plentiful rain this season but the storms skirted Carrington.

Last year, our aronia aborted its crop due to drought stress. This year, some varieties had over 25 pounds of fruit per plant, which was more than the plants could ripen. The fruit was able to sweeten but much of it was small and of low quality due to high tannin levels. Of 455 pounds harvested, 132 pounds of larger fruit remained after screening to remove the small, poor quality, berries.

### **Notable events in the fruit orchard:**

Because of the lack of rainfall, fruit-eating birds in the area moved on and did not cause crop losses in either juneberries or later haskaps.

Work continues to select Japanese haskap plants that hold their fruit better in windy conditions. We have 52 selections under evaluation, of which, 21 were planted in fall 2017 and 13 were new this fall. Fruiting will occur in 2020 and 2021.

The cherry shrubs were kept so that an NDSU graduate student could finish their project. The plants will be removed as soon as possible to decrease spotted winged drosophila numbers in the orchard.

Juneberry harvest was impacted by hot, dry, breezy weather. Veraison began June 25 and harvest began July 5. Fruit began to shrivel and fall within five days and we rushed to get the best berries off the plants. The late-ripening variety 'Smoky,' was picked July 11-12 and was discarded after weighing due to extreme 'raisining' of the fruit.

The fruit project manager attended the Midwest Aronia Association annual meeting in Omaha, NE. Through these contacts, we invited Dave VanderWerf, an Iowa aronia grower, to be the featured speaker at the 2018 Field Day fruit tour. In the afternoon, he lectured on aronia marketing.

One pear cultivar, 'Schroeder Hardy ND,' had fruit this year. The cultivar 'Ayers' is not winter hardy enough and will be removed. All the trees continue to be trained to widen their branch angles.

Northern Hardy Fruit Project - Yearly Production Records											
		No. of plants	2015		2016		2017		2018		
			Date	pounds	Date	pounds	Date	pounds	Date	pounds	
<b>Aronia</b>	Nero	4	31-Aug	25.7	9/3-6	54.5	9/12-13	12.6	9/10-11	105.8	
	Raintree Seedling	4	28-Aug	17.8	2-Sep	52.1	x	x	12-Sep	70.3	
	Raintree Select	4	1-Sep	21.4	6-Sep	60.0	9/13-19	7.4	8/31-9/5	94.2	
	Viking	4	1-Sep	19.7	9/2-7	63.2	12-Sep	4.5	8/22-9/5	105.7	
	McKenzie	4	2-Sep	0.9	7-Sep	42.0	11-Sep	5.1	8/28-30	78.0	
	Galicjanka	4			6-Sep	3.6	5-Sep	1.0	27-Aug	29.0	
						<b>85.5</b>		<b>275.4</b>		<b>30.6</b>	<b>483.0</b>
			Freeze, hail, wind - All				Crop aborted		Overcropped		
<b>Hardy Cherries</b>	SK Carmine Jewel	12	x	x	13-Jul	93.1	19-Jul	306.4	12-Jul	loss	
	SK Crimson Passion	12	x	x	13-Jul	32.2	20-Jul	129.3	13-Jul	loss	
						<b>0.0</b>		<b>125.3</b>		<b>435.7</b>	
										<b>x</b>	
				2014 - CJ crop apx. 7lb per shrub prior to Field Day tasting		Hail, SWD 70% loss				All lost to SWD	
	Evans / Bali	3	x	<b>0.0</b>	19-Jul	<b>17.3</b>	8/1-2	loss	7/20	loss	
			Reduced to 2 trees in 2013		Hail, SWD 70% loss		SWD infested (all)		SWD infested (all)		
<b>Black Currant</b>	Ben Sarek	12	x	x	x	x	Removed	x	Removed	x	
	Variety Trial	Black Down	16	x	x	7/22-28	36.7	x	x	x	
		Hilltop Baldwin	16	x	x	25-Jul	17.5	Removed	x	Removed	x
		Swedish Black	11	x	x	15-Jul	x	Removed	x	Removed	x
		Titania	15	x	x	25-Jul	20.1	x	x	18-Jul	2.6
		Whistler	12	x	x	7/27-28	53.0	x	x	7/31	6.3
					<b>0.0</b>		<b>127.3</b>		<b>0.0</b>		<b>8.9</b>
			Whistler replaced Ben Sarek 2011		Freeze, hail, wind - All		Hail, SWD ≥ 50% loss		Pruned out bearing canes		
<b>Black Currant</b>	Blackcomb	15			1-Aug	6.3	31-Jul	67.2	7-Aug	60.9	
	New	Cheakamus	15		28-Jul	6.7	28-Jul	79.7	31-Jul	79.8	
	Variety Trial	Stikine	15		1-Aug	0.1	26-Jul	115.4	7/18-24	52.2	
		Tahsis	15		28-Jul	2.8	26-Jul	77.6	26-Jul	83.5	
		Tiben	15		1-Aug	3.8	8-Aug	88.0	6-Aug	82.2	
		Tofino	14		10-Aug	3.0	8/1-4	45.9	8-Aug	14.3	
		Nechako -2 ft space	7		15-Aug	2.5	11-Aug	21.5	9-Aug	12.7	
		Nechako -3 ft space	7		15-Aug	3.5	11-Aug	26.6	9-Aug	18.6	
							<b>28.7</b>		<b>521.9</b>		<b>404.2</b>
				Whistler replaced Ben Sarek 2011		hail, SWD ≥ 50% loss		some SWD		some SWD	
<b>Black Currant</b>	Ben Lomand	4	x	x	26-Jul	8.3	x	x	25-Jul	4.9	
		Blackcomb	4	x	x	26-Jul	21.4	x	x	1-Aug	17.6
		Champion	4	x	x	26-Jul	6.7	x	x	25-Jul	11.5
		Consort	4	x	x	x	x	x	x	x	
		Minaj Smyriou	4	x	x	26-Jul	3.2	x	x	18-Jul	5.5
					<b>0.0</b>		<b>39.6</b>		<b>0.0</b>		<b>39.5</b>
			Blackcomb replaced Consort 2011		hail, SWD ≥ 50% loss		Pruned out bearing canes		Recovery year		
<b>Red Currant</b>	Jhonkheer Van Tets	4	x	x	21-Jul	42.9	21-Jul	46.1	25-Jul	3.2	
		Red Lake	4	x	x	x	x	21-Jul	18.4	removed	removed
		Redstart	4	x	x	x	x	x	x	SWD	x
		Rosetta	4	x	x	26-Jul	20.9	3-Aug	70.5	SWD	x
		Rovada	4	x	x	27-Jul	52.3	31-Jul	83.6	7/25-8/1	12.4
					<b>0.0</b>		<b>116.1</b>		<b>218.6</b>		<b>15.6</b>
					SWD loss			Pruned for Borer 2018			
<b>White Currant</b>	Blanka	4	x	x	22-Jul	15.0	x	x	x	x	
		Swedish White	4	x	x	21-Jul	20.5	x	x	x	x
				<b>0.0</b>		<b>35.5</b>		<b>0.0</b>		<b>0.0</b>	
			Freeze, hail, wind - All		SWD loss		Removed plants 2017		Removed plants 2017		

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		No. of plants	2015		2016		2017		2018	
			Date	pounds	Date	pounds	Date	pounds	Date	pounds
<b>Ore. Honeyberry</b>	22-37	3/ 2 2016	7-Jul	1.8	1-Jul	5.8	<i>did not pick</i>	x	6/26-28	5.9
	41-100	3/ 1 2016	7-Jul	1.8	30-Jun	3.0	<i>did not pick</i>	x	7-Jul	x
	43-87	3/ 2 2016	1-Jul	2.0	30-Jun	1.2	<i>did not pick</i>	x	6/22-28	7.9
	43-97	3/ 2 2016	9-Jul	2.3	5-Jul	3.6	<i>did not pick</i>	x	28-Jun	x
	45-57	3/ 1 2016	9-Jul	1.6	5-Jul	1.2	<i>did not pick</i>	x	28-Jun	4.1
	85-26	3/ 2 2016	7-Jul	8.3	5-Jul	8.8	<i>did not pick</i>	x	7/2-5	3.2
	20-04	3			30-Jun	3.8	7-Jul	12.8	26-Jun	3.2
	21-20	3			6-Jul	1.9	12-Jul	4.3	2-Jul	5.9
	22-14	3			6-Jul	2.8	7-Jul	8.2	28-Jun	6.5
	22-26	3			6-Jul	3.4	7-Jul	12.0	26-Jun	8.9
	41-75	3			6-Jul	3.7	7/4-6	15.7	6/27-7/2	15.8
	44-19	3			6-Jul	2.2	12-Jul	9.4	2-Jul	7.1
	57-49	3			6-Jul	4.6	11-Jul	13.0	2-Jul	10.1
	88-92	3			30-Jun	2.0	4-Jul	6.3	27-Jun	6.2
	88-102	2			30-Jun	0.9	4-Jul	5.8	26-Jun	4.7
	108-23	3			30-Jun	4.8	7/6-7	17.0	26-Jun	8.9
	131-08	3			6-Jul	2.8	12-Jul	10.8	5-Jul	8.7
	142-30	3			6-Jul	1.9	10-Jul	6.8	28-Jun	5.7
	78-89	2					7-Jul	0.8	5-Jul	3.5
				<b>17.8</b>		<b>58.4</b>		<b>122.9</b>		<b>116.3</b>
							<i>Excellent Bbee popl.</i>			
<b>Rus. Honeyberry</b>	Berry Blue	4	30-Jun	7.5	21-Jun	12.4	28-Jun	23.6	<i>did not pick</i>	x
	Blue Belle	4	6/22-25	12.4	13-Jun	10.1	19-Jun	21.8	<i>did not pick</i>	x
	Blue Moon	4/ 2 2016	x	x	x	x	<i>did not pick</i>	x	<i>removed</i>	<i>removed</i>
	Blue Velvet	4/ 2 2016	x	x	1-Jul	1.8	<i>did not pick</i>	x	<i>removed</i>	<i>removed</i>
	Kamchatka	4	25-Jun	7.4	15-Jun	9.2	<i>did not pick</i>	x	<i>did not pick</i>	x
	Cinderella	4	22-Jun	1.3	14-Jun	6.0	<i>did not pick</i>	x	<i>removed</i>	<i>removed</i>
				<b>28.6</b>		<b>39.5</b>		<b>45.4</b>		<b>0.0</b>
							<i>Excellent Bbee popl.</i>			
<b>Haskaps - Canadian</b>	Borealis	4/ 2 2016	7-Jul	0.8	30-Jun	0.7	26-Jun	9.6	22-Jun	0.2
	Tundra	5/ 3 2016	1-Jul	2.8	27-Jun	2.8	27-Jun	17.7	21-Jun	4.8
	Indigo Gem (9-15)	5/ 4 2016	1-Jul	6.1	22-Jun	12.4	27-Jun	20.9	21-Jun	3.6
	Indigo Treat (9-91)	5/ 2 2016	7-Jul	0.2	27-Jun	0.5	29-Jun	6.9	21-Jun	3.7
	Aurora	1								0.3
				<b>9.9</b>		<b>16.4</b>		<b>55.1</b>		<b>12.6</b>
					<i>Reduced plant numbers</i>		<i>Excellent Bbee popl.</i>			
<b>Juneberry Variety Trial</b>	<i>Honeywood</i>	20	7/16-20	19.5	7/9-12	144.6	7/10-11	166.2	7/10	68.3
	<i>JB30</i>	20	7/9-10	25.4	7/6-7	174.3	7/5-7	133.4	7/5-9	60.8
	<i>Martin</i>	20	7/9-10	32.5	7/5-7	131.4	7/5-6	101.0	7/5-9	68.6
	<i>Smoky</i>	20	7/16-19	71.8	7/8-12	147.3	7/13-14	154.1	7/11-12	115.9
	<i>Thiessen</i>	20	7/9-13	35.4	7/5-8	164.9	7/5-6	142.2	7/6-9	60.0
					<b>184.6</b>		<b>762.5</b>		<b>696.9</b>	
			<i>Freeze, hail, wind - All</i>		<i>Some SWD after 7/8</i>				<i>Only 2 of 4 rows picked</i>	

The Project was planted in 2007, except Juneberries 2006.



Aronia flowering in the orchard.