

Canadian Agri-Science Cluster for Horticulture 3



Update to Industry

Semi-Annual – Fall 2021

Activity title: The Canadian Berry Trial Network

Name of Lead Researcher:

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Names of Collaborators and Institutions:

British Columbia

Michael Dossett	BC Blueberry Council Raspberry Industry Dev. Council BC Strawberry Growers Association
Gosia Zdanowicz	Agriculture and Agri-Food Canada
Anju Gill	BC Blueberry Council
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Carolyn Teasdale	BC Ministry of Agriculture

Ontario

Adam Dale	University of Guelph
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Nova Scotia

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Activity Objectives:

The Canadian Berry Trial Network (CBTN) project involves testing new varieties and selections of strawberry, raspberry and blueberry in four provinces across Canada: British Columbia (BC), Ontario (ON), Quebec (QC) and Nova Scotia (NS).

- The objective for Phase I (2018-2019) was to initiate the project through an in-person meeting and the development of an experimental design. Phase I also included plant propagation, field preparation and the acquisition of research materials and supplies.
- The objective for Phase II (2019-2023) is to establish and evaluate standard varieties, new varieties and advanced selections of raspberry, blueberry and strawberry in the four provinces.
- The objective for Phase III (2020-2023) is to share the results of the trials with our industry partners and to discuss commercial opportunities for some of the new trial varieties and selections.

Research Progress to Date:

Replicated Trials

In 2021, the CBTN evaluated strawberry and raspberry trials, planted new strawberry trials, and prepared blueberry trials for 2022. The trials included numbered selections, new named cultivars, and industry standards.

Day Neutral Strawberry

Nine strawberry varieties were evaluated between 2019 and 2021. In general, the top performing varieties were:

PROVINCE	VARIETIES	CHARACTERISTICS			
		Season Start	Harvest	Yield	Fruit Size
Quebec	AAC DYNAMIK	Early	16 weeks (2 wk. pause)	1000 g / plant	40% > 10 g
	BC 10-2-1	Very early	16 weeks (3 wk. pause)	700 g / plant	40% > 10 g
	CABRILLO	Very early	16 weeks (3 wk. pause)	700 g / plant	40% > 10 g
Nova Scotia	AAC DYNAMIK	Early	17 weeks (2 wk. pause)	500 g / plant	11 g / berry
	K16-31 DN	Early-mid	16 weeks (4 wk. pause)	500 g / plant	13 g / berry
Ontario	AAC DYNAMIK	Fall harvest only	10 weeks	500 g / plant	12 g / berry
	K16-31 DN	Fall harvest only	8 weeks	400 g / plant	14 g / berry
British Columbia	To be determined.	Data collection and processing is ongoing. An update will be provided at year end.			



Photos: 'AAC DYNAMIK' (left) and 'BC 10-2-1' (right) (B. Amyotte 2021)

June Bearing Strawberry

Twenty strawberry varieties were evaluated between 2019 and 2021. In general, the top performing varieties were:

PROVINCE	VARIETIES	CHARACTERISTICS			
		Season	Harvest	Yield	Fruit Size
Quebec (plasticulture)	CAVENDISH	Mid	4 weeks	300 g / plant	50% > 10 g
	FLORIDA BRILLIANCE	Mid-late	5 weeks	200 g / plant	30% > 10 g
	VALLEY SUNSET	Late	4 weeks	200 g / plant	70% > 10 g
Nova Scotia (matted row)	CAVENDISH	Mid	2 weeks	900 g / plant	17 g / berry
	AAC EVELYN	Mid-late	2 weeks	800 g / plant	19 g / berry
	K16-21	Late	2 weeks	800 g / plant	20 g / berry
Ontario (matted row)	DARSELECT	Early-mid	2.5 weeks	1400 g / m row	15 g / berry
	CAVENDISH	Mid	2.5 weeks	1400 g / m row	15 g / berry
	JEWEL	Mid-late	2.5 weeks	1400 g / m row	12 g / berry
	SUMMER EVENING	Late	2.5 weeks	1400 g / m row	11 g / berry
British Columbia (plasticulture)	To be determined.	Data collection and processing is ongoing. An update will be provided at year end.			



Photos: June bearing strawberries 'CAVENDISH' (left) and 'SUMMER EVENING' (right) (B. Amyotte 2021)

Raspberry

Fifteen raspberry varieties were evaluated in 2021. After the first harvest year, the varieties with potential are:

PROVINCE	VARIETY	CHARACTERISTICS			
		Season	Harvest	Yield	Fruit Size
Quebec	To be determined.	Data collection and processing is ongoing. An update will be provided at year end.			
Nova Scotia	NOVA	Floriscane, early	3 weeks	700 g / plant	2.5 g / berry
	KILLARNEY	Floriscane, mid	4 weeks	900 g / plant	2.6 g / berry
	POLKA	Primocane, early	10 weeks	800 g / plant	3.2 g / berry
	K14-13	Primocane, early	10 weeks	600 g / plant	3.5 g / berry
Ontario	To be determined.	Data collection and processing is ongoing. An update will be provided at year end.			
British Columbia	To be determined.	Data collection and processing is ongoing. An update will be provided at year end.			

Blueberry

Seventeen blueberry varieties were distributed to trial sites for planting in 2022. They are:

VARIETY	ORIGIN
<i>Early</i>	
PATRIOT	Maine, 1957
DUKE	New Jersey, 1987
TITANIUM	Oregon Blueberry Farm, 2013
PEACHYBLUE	Fall Creek Farm and Nursery, 2020
ARABELLABLEUE	Fall Creek Farm and Nursery, 2020
<i>Mid-Season</i>	
BLUECROP	New Jersey, 1952
DRAPER	Michigan State University, 2003
CALYPSO	Michigan State University, 2013
OSORNO	Michigan State University, 2013
VALOR	Fall Creek Farm and Nursery, 2016
LORETOBLUE	Fall Creek Farm and Nursery, 2020
<i>Late</i>	
AURORA	Michigan State University, 2003
LUNABLU	Fall Creek Farm and Nursery, 2020
<i>Unreleased</i>	
BC 12-6-8	British Columbia (M. Dossett)
BC 14-8-76	British Columbia (M. Dossett)
ORUS 264-1	US Department of Agriculture / Oregon State University (C. Finn)
ORUS 292-2	US Department of Agriculture / Oregon State University (C. Finn)

British Columbia On-Farm Trials

Evaluation of blueberry, raspberry and strawberry cultivar performance through on-farm trials continued uninterrupted in 2020 and 2021. In 2020, for strawberry, Californian June-bearing (UCD VICTOR and WARRIOR) and day-neutral (UCD ROYAL ROYCE and VALIANT) cultivars were assessed in multiple field plantings but did not match current standards in terms of fruit quality. However, these cultivars were planted again in 2021 for a second round of observations. For

raspberry, newly released Washington State University cultivar, CASCADE PREMIER, as well as selections from the same program, were observed in established trials. In both 2020 and 2021, blueberry evaluations were more extensive, with samples of fruit being collected on three successive harvest dates from numerous selections and standard cultivars from several locations across the production region. Fruit quality during cooler storage was assessed via measurement of fruit firmness at 1, 7, 21 and 35 days. Results were presented to growers at three virtual events in BC in 2020-2021.

Extension Activities:

The CBTN team gave virtual presentations at the follow virtual industry event in fall 2021:

- October, 2021: BC Berries Research Review Meeting
 - Berry breeding, including CBTN trial results (British Columbia), M. Dossett
 - CBTN trial results (Nova Scotia and Quebec), B. Amyotte, P. Lafontaine and R. Pusnel
 - CBTN trial results (Ontario), J. Zandstra and A. Dale
 - Collaborative testing, including a vision for the future of the CBTN, E. Gerbrandt

Presentation materials for the meeting listed above are available in the Canadian Berry Trial Network Google Drive, accessible [here](#). Semi-annual reports for this cluster project are available [here](#).

Please contact us for any questions you have about the CBTN, or if you'd like to schedule an update presentation:

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COVID-19 Related Challenges:

COVID-19 affected this activity in the following ways: 1) while the BC version of the replicated blueberry trial was established in spring of 2021, sending plants to the other provinces was delayed until fall of 2021, which means establishment s at these sites will also be delayed until spring 2022; 2) all stakeholder events were virtual; and 3) no in-person tours of replicated trials were permitted. However, the activity progressed well, and we were able to plant new strawberry trials, evaluate existing strawberry and raspberry trials, conduct on-farm evaluations of all three crops in BC, and distribute blueberry plants for trial in 2022. We are particularly proud of the teamwork approach used to coordinate Dr. Eric Gerbrandt's efforts to access and obtain plants of unreleased blueberry selections from top tier breeding programs in BC and Oregon, so that growers in each province can get a first look at this material before it is widely available. Eric and the BC berry team also successfully hosted a two-day virtual research event in October 2021 at which CBTN results were presented by all four provinces. As planning for the 2022 growing season gets underway, we all continue to work safely under decreasingly restrictive provincial COVID-19 guidelines.

Key Message(s):

Despite some minor challenges due to COVID-19, the Canadian Berry Trial Network progressed well during 2021. The project team was able to successfully plant new strawberry trials, evaluate existing strawberry and raspberry trials, conduct on-farm evaluations in BC, and secure blueberry plants for the 2022 trials. The team was also pleased to share research updates with growers and industry colleagues through a virtual meeting in fall 2021, and we hope to speak to you again throughout the coming winter months. Happy holidays, and best wishes to all for a safe and productive 2022.

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