Canadian Agri-Science Cluster for Horticulture 3

Update to Industry

Semi-Annual – Spring 2022

Activity title:

The Canadian Berry Trial Network

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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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Ontario

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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. Results from the 2021 trials were provided in the fall 2021 update to industry, and are shown again below. As well, the lists of new varieties for the 2022 strawberry trials are provided.

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	12 g
	BC 10-2-1	Very early	16 weeks (3 wk. pause)	700 g / plant	13 g
	CABRILLO	Very early	16 weeks (3 wk. pause)	700 g / plant	13 g
Nova Scotia	AAC DYNAMIK	Early	17 weeks (2 wk. pause)	500 g / plant	11 g
	K16-31 DN	Early-mid	16 weeks (4 wk. pause)	500 g / plant	13 g
Ontario	AAC DYNAMIK	Fall harvest only	10 weeks	400 g / plant	12 g
	K16-31 DN	Fall harvest only	8 weeks	300 g / plant	14 g
	VALIANT	Fall harvest only	8 weeks	300 g / plant	14 g
British Columbia	(to be determined)	(data analysis ongoing – details to be provided in final report)			

The varieties to be planted in 2022 are: ALBION, SEASCAPE, AAC DYNAMIK, BC 10-2-1, K16-31 DN, K17-08 DN, MURANO, SHANNON M KENT, FLORIDA BEAUTY, UCD FINN, UCD MOJO, SALMA

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	13 g
	FLORIDA BRILLIANCE	Mid-late	5 weeks	200 g / plant	11 g
	VALLEY SUNSET	Late	4 weeks	200 g / plant	18 g
Nova Scotia (matted row)	CAVENDISH	Mid	2 weeks	900 g / plant	17 g
	AAC EVELYN	Mid-late	2 weeks	800 g / plant	19 g
	K16-21	Late	2 weeks	800 g / plant	20 g
Ontario (matted row)	DARSELECT	Early-mid	2.5 weeks	1400 g / m row	15 g
	CAVENDISH	Mid	2.5 weeks	1400 g / m row	15 g
	JEWEL	Mid-late	2.5 weeks	1400 g / m row	12 g
	SUMMER EVENING	Late	2.5 weeks	1400 g / m row	11 g
British Columbia (plasticulture)	(to be determined)	(data analysis ongoing – details to be provided in final report)			

The varieties to be planted in 2022 are: WENDY, CAVENDISH, JEWEL, VALLEY SUNSET, AAC AUDREY, AAC EVELYN, AAC KATE, AAC LILA, SONATA, PUGET CRIMSON, FLORIDA PEARL, K09-4, K12-12, K14-4, K15-11, K16-21, K18-21, RG28-6-18.

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	K14-03	Floricane	8 weeks	2.6 kg / m row	3.1 g
	AAC EDEN	Floricane	9 weeks	2.1 kg / m row	3.9 g
	POLKA	Primocane	15 weeks	3.7 kg / m row	2.4 g
	K14-19	Primocane	15 weeks	2.6 kg / m row	2.9 g
Nova Scotia	NOVA	Floricane	3 weeks	700 g / plant	2.5 g
	KILLARNEY	Floricane	4 weeks	900 g / plant	2.6 g
	POLKA	Primocane	10 weeks	800 g / plant	3.2 g
	K14-13	Primocane	10 weeks	600 g / plant	3.5 g
Ontario	(to be determined)	(data analysis ongoing – details to be provided in final report)			
British Columbia	(to be determined)	(data analysis ongoing – details to be provided in final report)			

There will be no new raspberry varieties planted in 2022.

Blueberry

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

VARIETY	ORIGIN
Early	
PATRIOT	Maine, 1957
DUKE	New Jersey, 1987
TITANIUM	Oregon Blueberry Farm, 2013
PEACHYBLUE	Fall Creek Farm and Nursery, 2020
ARABELLABLUE	Fall Creek Farm and Nursery, 2020
Mid-Season	
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
Late	
AURORA	Michigan State University, 2003
LUNABLUE	Fall Creek Farm and Nursery, 2020
Unreleased	
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 through the 2021 growing season. 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 an additional round of observations. For raspberry, newly released Washington State University cultivar, CASCADE PREMIER, as well as another selection from the same program, WSU 2188, performed well under commercial conditions in BC. Blueberry evaluations included CARGO, LAST CALL, TOP SHELF, CLOCKWORK, BLUE RIBBON, VALOR, and CALYPSO, as well as selections from the BC breeding program tested at several locations across the production region. Fruit quality during cooler storage was assessed, and results were presented to growers at virtual events in BC during 2021 and 2022.

Extension Activities:

The CBTN team gave virtual presentations at the following virtual industry event:

- October 21, 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 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. Dr. Eric Gerbrandt 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 2021-2022. 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 and strawberry plants for the 2022 trials. The team was also pleased to share research updates with growers and industry colleagues through virtual meetings in fall 2021 and winter 2022. We are now actively drafting our work plan for the second CBTN that, if approved, will begin in 2023. Thanks to all of our industry partners for supporting this ongoing work, and best wishes for a productive season in 2022.

This project is generously funded through the Canadian Agri-Science Cluster for Horticulture 3, in cooperation with

Agriculture and Agri-Food Canada's AgriScience Program, a Canadian Agricultural Partnership initiative,
The Fruit & Vegetable Growers of Canada and industry contributors.