

The **New!** Canadian Berry Trial Network

SCOTIA HORTICULTURAL CONGRESS
JANUARY 28, 2019

BEATRICE AMYOTTE

© GOVERNMENT OF CANADA

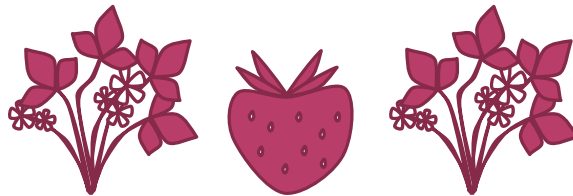
Introduction to the CBTN

BACKGROUND + OBJECTIVE

PARTICIPANTS

PHASES

OUTLOOK



BACKGROUND

The **Canadian Berry Trial Network** is a 5 year research activity of the Horticulture Cluster within the Canadian Agricultural Partnership (CAP) Program (2018-2023).

This project follows past berry research projects conducted through the Canadian Horticultural Council.



Canadian
Horticultural
Council

Conseil
canadien de
l'horticulture

The voice of Canadian fruit and vegetable growers



 **CANADIAN
AGRICULTURAL
PARTNERSHIP**
Innovate. Grow. Prosper.

 **PARTENARIAT
CANADIEN pour
l'AGRICULTURE**

BACKGROUND

2007 - 2012: Growing Forward Horticulture Cluster

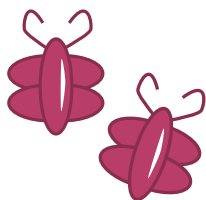
- Wild blueberry risk management
- Day neutral strawberry breeding
- Raspberry tunnel production

2012 - 2017: Growing Forward 2 Horticulture Cluster

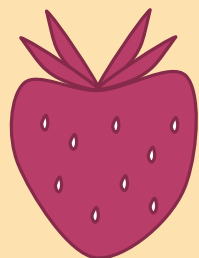
- No small fruit activities (apple and potato only)
- **Discussions for the next policy framework**

BACKGROUND

CHC Berry research priorities



Integrated
Pest
Management



**Cultivar
Development**



Product-
Market
Development



Health
Research



**Production
Research**



Canadian
Horticultural
Council

Conseil
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l'horticulture

The voice of **Canadian fruit and vegetable growers**

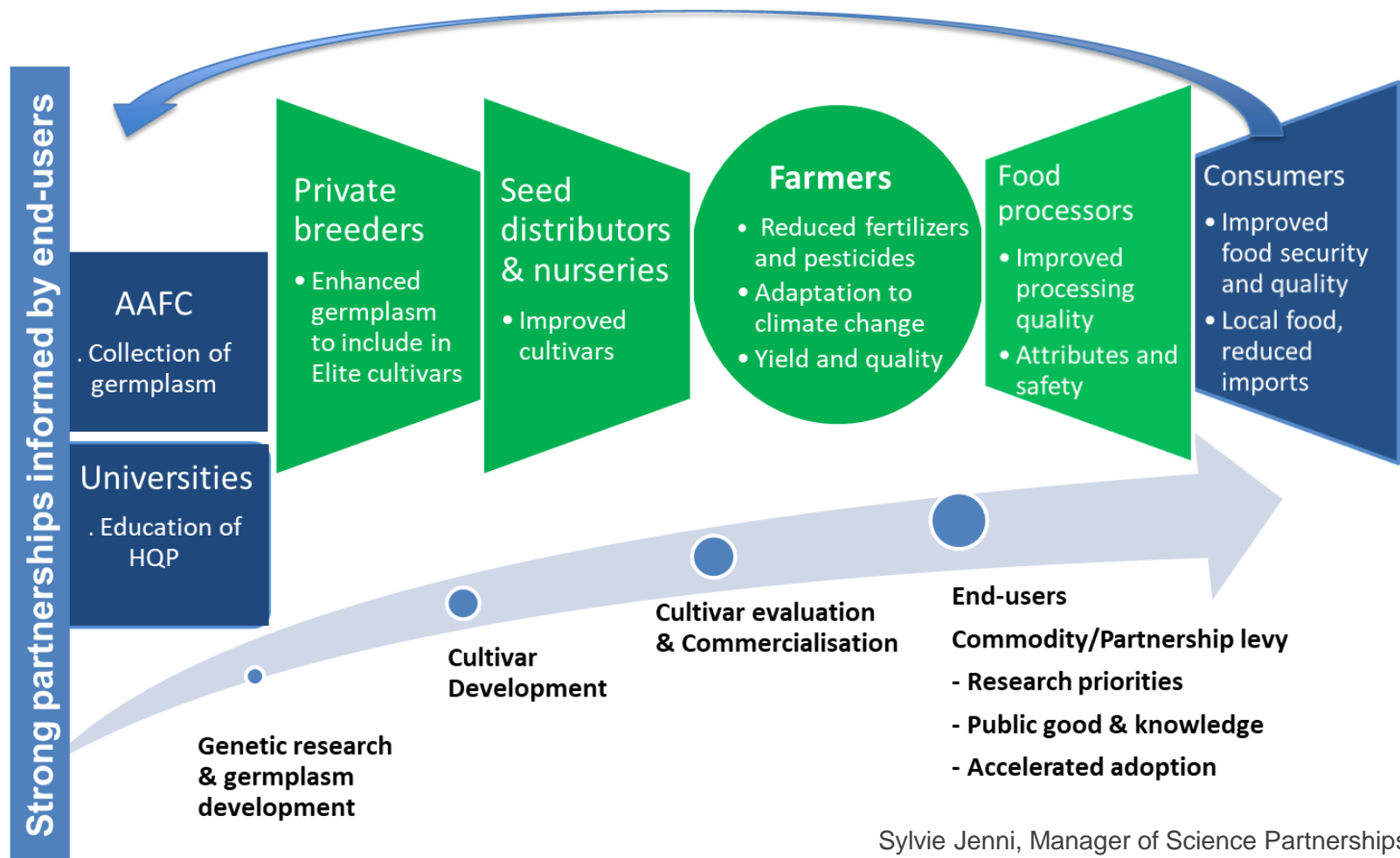
Growing
Forward **2**

Cultivons
l'avenir **2**



BACKGROUND

AAFC vision for plant breeding



BACKGROUND

AAFC continues berry program in Kentville!

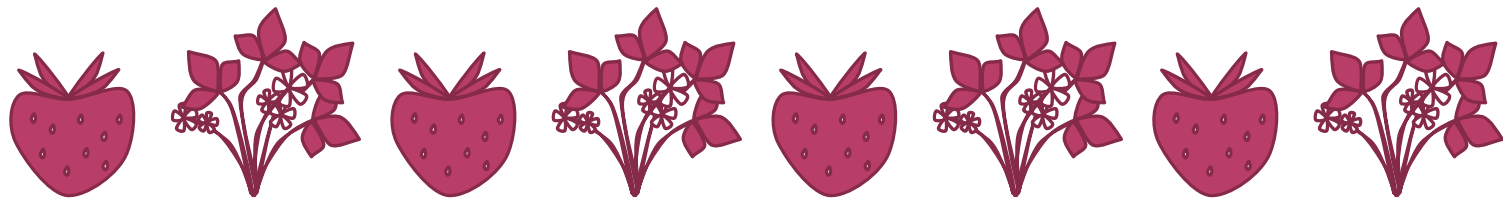


Aug. 2017

BACKGROUND

2017: Canadian Horticultural Council – Call for Proposals

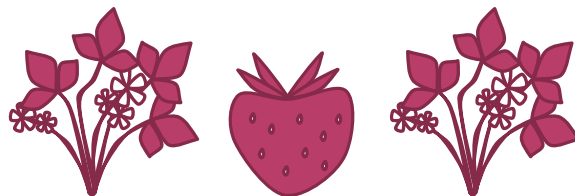
- **Berry Priorities:** Cultivars, Production
- **AAFC Priorities:** Industry-led Plant Breeding
- Activity proposal developed: **Canadian Berry Trial Network**



- **2018: Activity approved (\$1.3 M)**

OBJECTIVE

- To combine the expertise of Canadian **growers, plant breeders, horticultural production researchers** and **extension specialists** in designing a **Canadian Berry Trial Network**
- To test new selections of **strawberry, raspberry** and **blueberry** and identify **new cultivars for the Canadian industry**
- To develop strong collaboration between researchers and stakeholders in **British Columbia, Ontario, Quebec** and **Nova Scotia**



PARTICIPANTS

Industry Associations

- Horticulture Nova Scotia
- L'Association des producteurs de fraises et framboises du Québec
- Ontario Berry Growers Association
- British Columbia Strawberries & Raspberries

Research Institutions

- Carrefour industriel et expérimental de Lanaudière
- University of Guelph
- British Columbia Berry Cultivar Development Inc.
- Sky Blue Horticulture
- Agriculture and Agri-Food Canada

Ministries and Extensions Services

- Ontario Ministry of Agriculture, Food and Rural Affairs
- Perennia Food and Agriculture
- BC Ministry of Agriculture
- Québec Ministry of Agriculture & Réseau de lutte intégrée Orléans

Total
Contributions:

\$396 330
(30% project cost)

PARTICIPANTS

CBTN Project Management Committee



**Jennifer
Crawford**
APFFQ
Stakeholder
Engagement + KTT



**Beatrice
Amyotte**
AAFC
Research
Coordination (NS)



**Eric
Gerbrandt**
Sky Blue Hort.
Research
Coordination (BC)



**Pierre
Lafontaine**
CIEL
Research
Coordination (QC)



**John
Zandstra**
U. of Guelph
Research
Coordination (ON)

PARTICIPANTS

Research Trial Locations

- Fraser Valley, BC – Eric Gerbrandt
- Agassiz, BC – Michael Dossett
- L'Assomption, QC – Pierre Lafontaine
- Ridgetown, ON – John Zandstra
- Simcoe, ON – Adam Dale
- Kentville, NS – Beatrice Amyotte



PARTICIPANTS

British Columbia



Industry

- Raspberry 3000 acres
- Blueberry 30,000 acres
- Strawberry 600 acres



Research

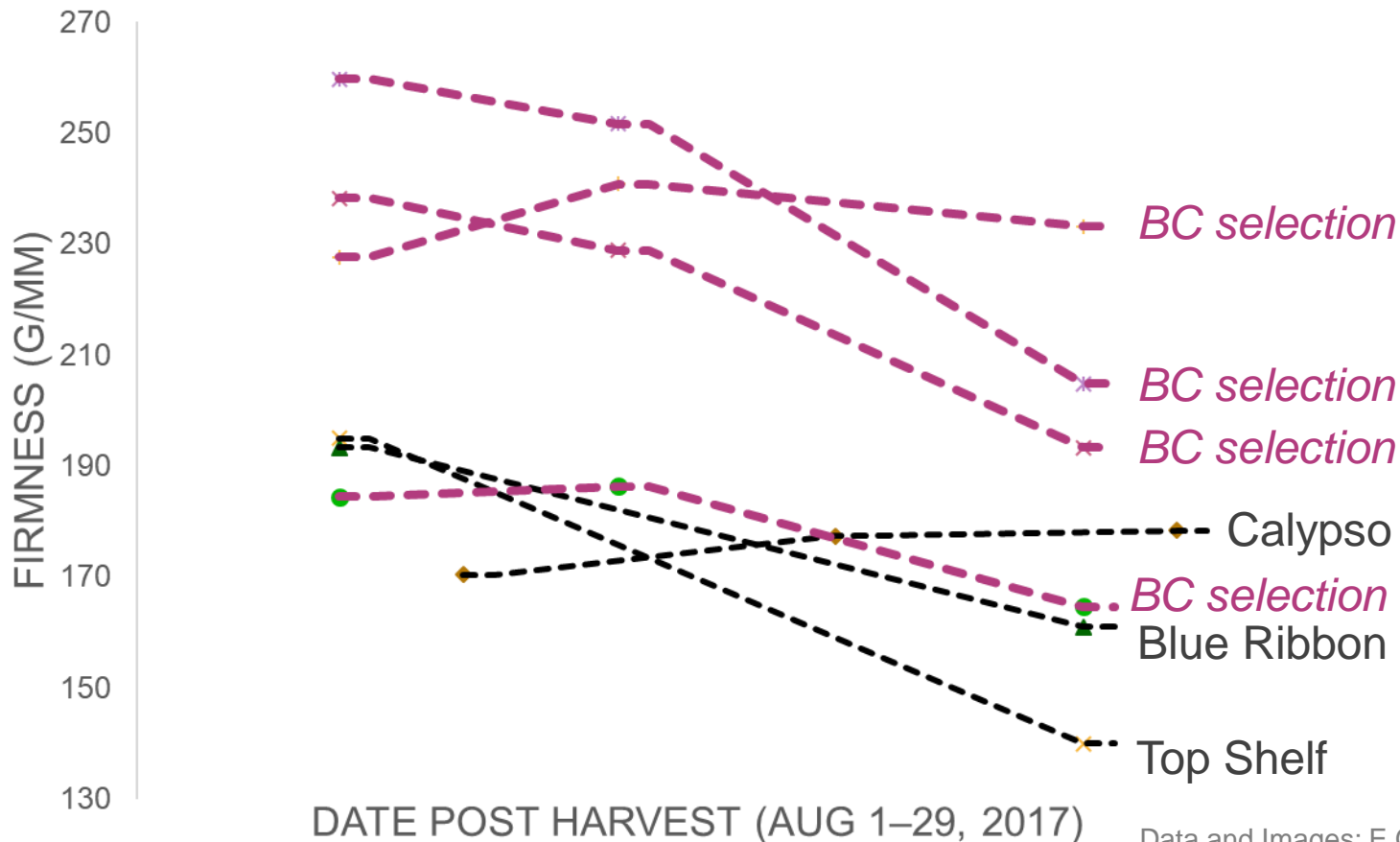
- Eric Gerbrandt & Michael Dossett
- Industry-led berry breeding program
- Variety trials at AAFC Clearbrook
- On-farm trials across South Fraser Valley



PARTICIPANTS

British Columbia

Blueberry postharvest firmness trial (Eric Gerbrandt 2018)



PARTICIPANTS

Ontario



Industry

- Raspberry 700 acres
- Blueberry 1000 acres
- Strawberry 3000 acres



Research

- John Zandstra & Adam Dale
- University-led berry breeding program
- Variety trials at Simcoe & Cedar Springs



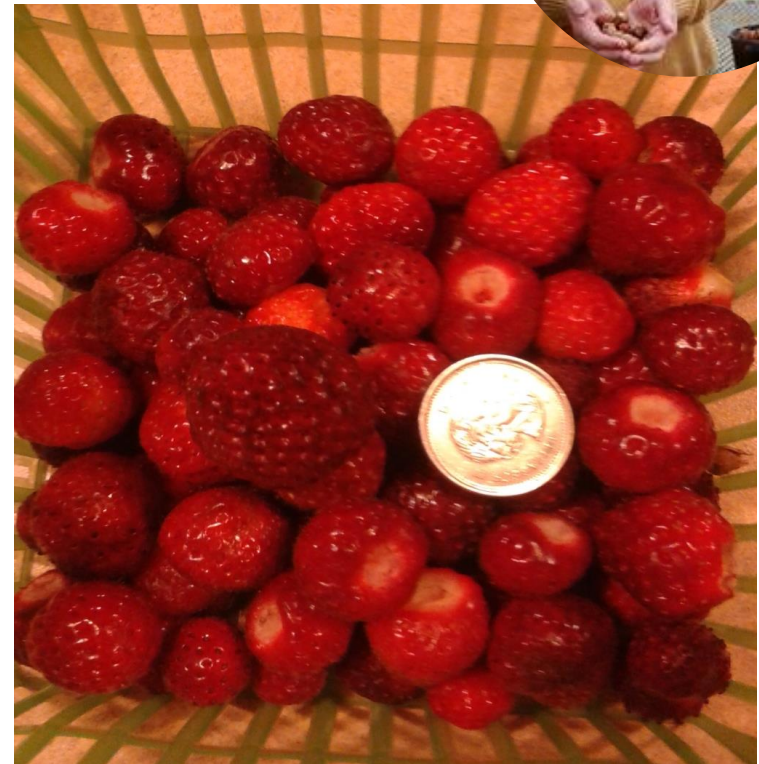
PARTICIPANTS

Ontario

Recent varieties and selections (Adam Dale 2018)

Day Neutral Strawberries

- Summer Daisy
- Summer Flavor
- Summer Evening
- 33GY43
- **Berrielle™**

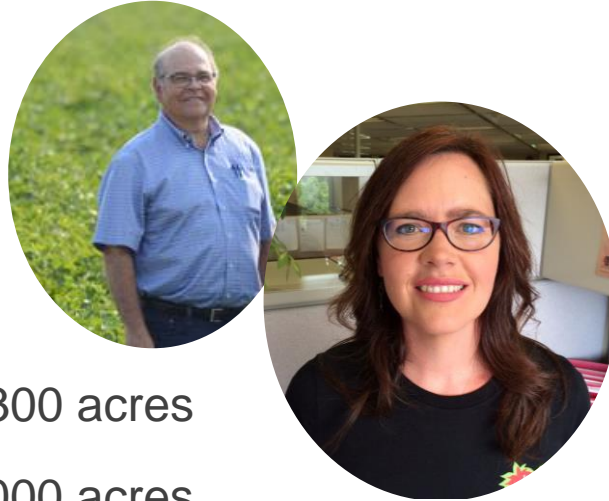


PARTICIPANTS

Québec

Industry

- Raspberry 1300 acres
- Blueberry 75,000 acres
- Strawberry 5000 acres



Research

- Pierre Lafontaine & Jennifer Crawford
- No large berry breeding programs
- Variety trials at CIEL research station, l'Assomption

PARTICIPANTS

Québec

Current projects at CIEL (Pierre Lafontaine 2018)

- In-field soilless strawberry cultivation
- Reduced risk fungicides for Anthracnose in strawberry + blueberry
- Effect of plant density in plasticulture for June bearing strawberry
- Forecasting model for Anthracnose in strawberry
- New application methods for acaricide against cyclamen mite
- Comparison of IPM and CM in day neutral strawberry

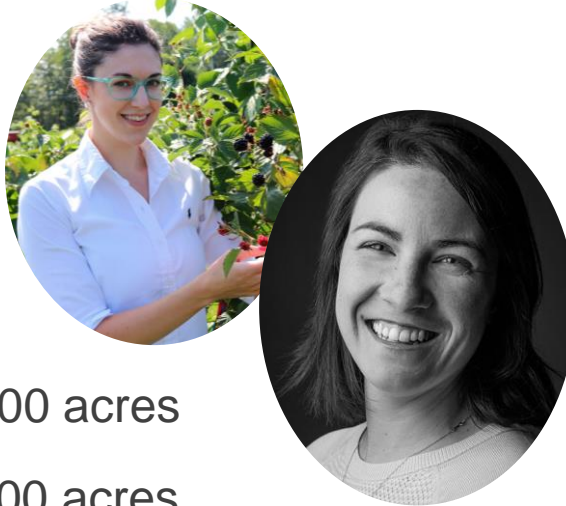


PARTICIPANTS

Nova Scotia

Industry

- Raspberry <100 acres
- Blueberry 42,000 acres
- Strawberry 1000 acres



Research

- Beatrice Amyotte & Jennifer Haverstock
- AAFC berry breeding program
- Variety trials at AAFC Kentville
- On-farm trials in collaboration with NS nurseries



Collecting



Crossing



Seedling
Selection



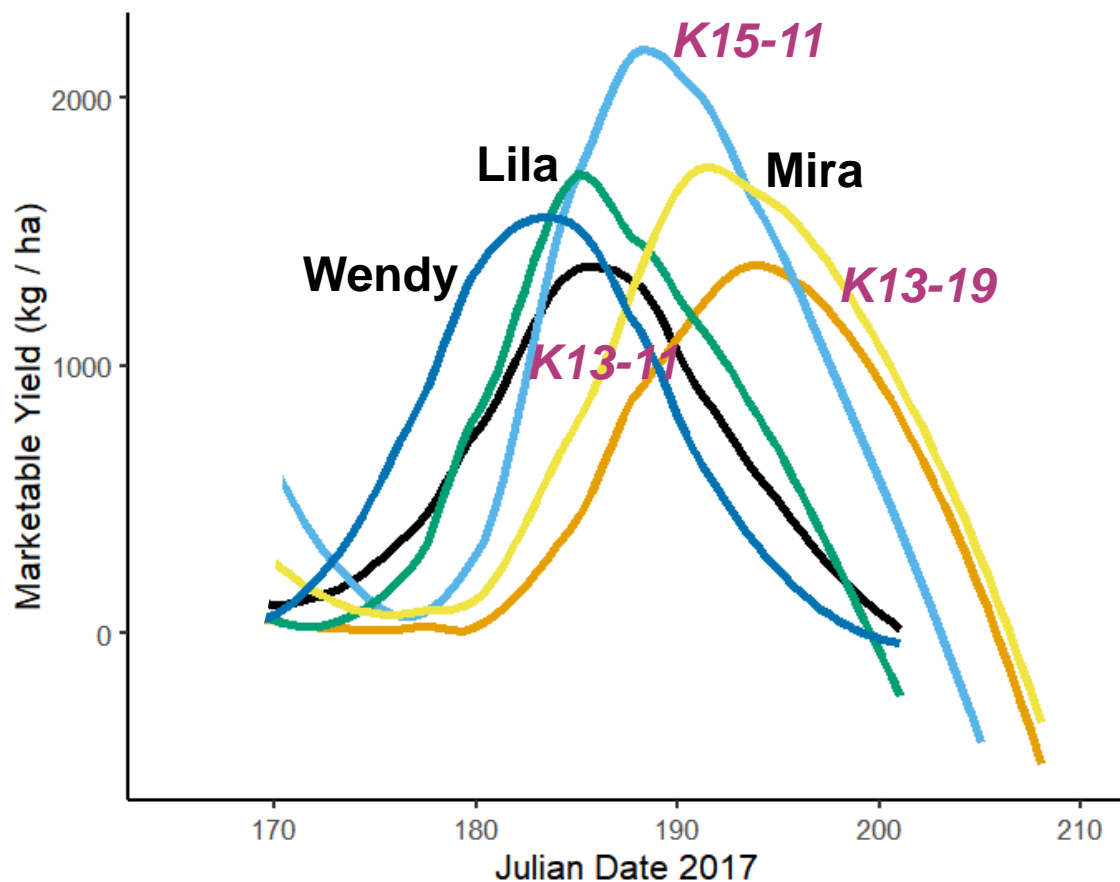
Replicated
Trials

**Objectives set by Industry
Process led by AAFC**

PARTICIPANTS

Nova Scotia

June bearing strawberry yield trial (Jamieson, Rand, Amyotte 2018)

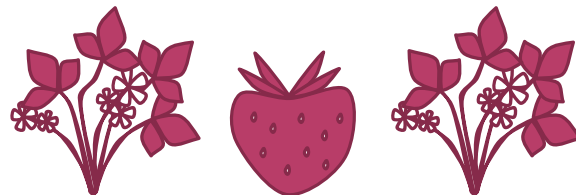


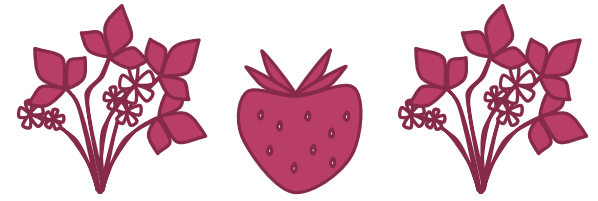
‘AAC Lila’

Jamieson et al. 2013

PARTICIPANTS

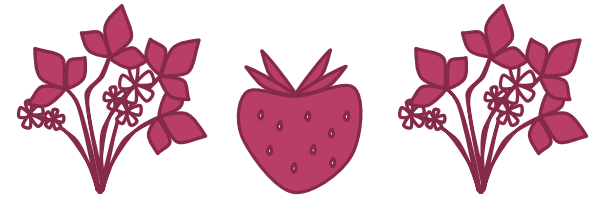
The CBTN: Collaborative variety trials across Canada!





CBTN PHASES

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
PHASE I: Implementation					
PHASE II: Evaluation					
PHASE III: Dissemination					

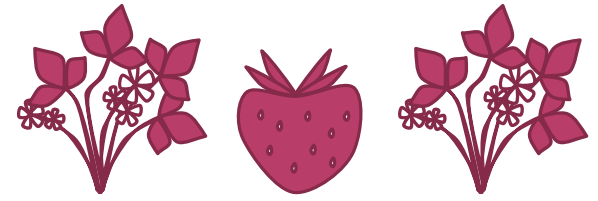


PHASE I

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
PHASE I: Implementation					

Design and launch the CBTN

- Coordinate evaluation methods and choose varieties to evaluate
- Develop reporting and stakeholder engagement strategy

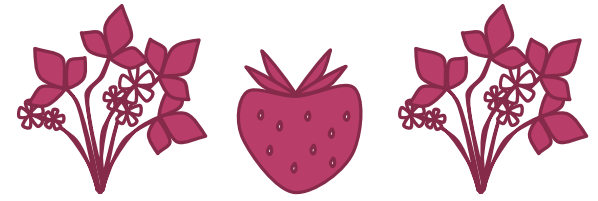


PHASE II

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
PHASE II: Evaluation					

Plant and evaluate the coordinated trials

- Establish BLUEBERRY, RASPBERRY & STRAWBERRY trials
- Collect data on plant performance and fruit quality
- Conduct statistical analysis of multi-location, multi-year data

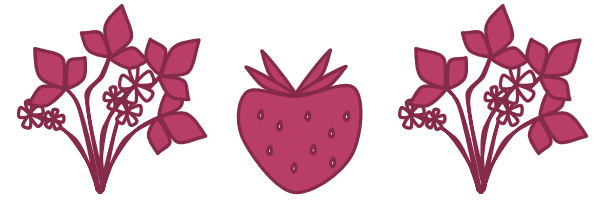


PHASE III

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
PHASE III: Dissemination					

Share and communicate results

- Discuss ongoing observations and challenges
- Develop annual reports: documents, presentations and posters
- Present findings to stakeholders and decide next steps

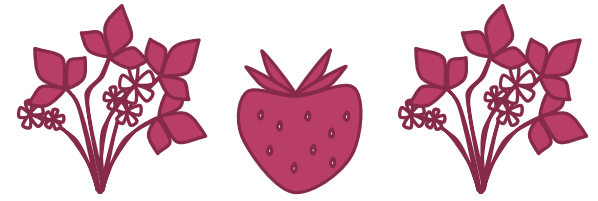


PHASE III

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
PHASE III: Dissemination					

Key Deliverables

- Presentations at industry events in 4 provinces
- Reports for industry and scientific audiences
- Field days for industry stakeholders
- Bilingual fact sheets for top performing selections



PROJECT OUTLOOK

- This 5-year project will help to achieve the integration of AAFC and other small fruit breeding programs into a national berry cultivar development continuum, with industry leadership.



CONCLUSIONS

- This project aims to develop cohesive partnerships for science-based testing of new high value small fruits in Canada's major growing regions.
- The work will lead to the development of new commercial cultivars suited to important fruit production regions.
- The project will be a framework for ongoing collaborations between Canadian berry industry stakeholders, breeders and researchers.

