



Agriculture and Agri-Food Canada

Kentville Research and Development Centre
Kentville, Nova Scotia

Beatrice Amyotte

Small Fruit Germplasm Development Scientist

Agriculture and Agri-Food Canada (AAFC)

Kentville Research and Development Centre, Kentville, Nova Scotia, Canada

beatrice.amyotte@canada.ca

1. List your research and extension projects under the official NCCC 212 objectives, emphasizing collaborative projects with other researchers. A suggested format is below.

Objective 1 - Develop improved small fruit germplasm through cooperative breeding and evaluation programs:

The Canadian Berry Trial Network. B. Amyotte, AAFC, Nova Scotia; E. Gerbrandt, Sky Blue Horticulture, British Columbia; M. Dossett, B.C. Berry Cultivar Dev. Inc., British Columbia; J. Zandstra, A. Dale, University of Guelph, Ontario; P. Lafontaine, Carrefour Industriel et Expérimental de Lanaudière, Québec. 2018-2023

Strawberry, Raspberry, Blueberry

The Canadian Berry Trial Network (CBTN) is an industry- and public-funded variety trial network for strawberry, raspberry and blueberry. The trials are conducted at agricultural research institutions in British Columbia, Ontario, Quebec and Nova Scotia. All trials are planted in outdoor field plots as RCBDs and managed under regional production methods.

The CBTN invites NCCC212 members and colleagues to send us your new advanced selections and varieties of strawberry, raspberry and blueberry. The trials are an opportunity to test your pre-commercial selections and to show Canadian growers how your named varieties perform in their regions. We will plant new trials in spring 2021 and 2022. Interested? Please contact B. Amyotte: beatrice.amyotte@canada.ca



Strawberry Variety Development. A. Jamieson, B. Amyotte, AAFC, Nova Scotia. 2016-2021

Strawberry

Three new strawberry varieties have been released from the Nova Scotia breeding program. They are: '[AAC Audrey](#)', '[AAC Evelyn](#)' and '[AAC Kate](#)'. The varieties were bred by Andrew Jamieson and selected in collaboration with two Canadian berry nurseries. The formal prefix 'AAC' designates Agriculture and Agri-Food Canada.

'Audrey', 'Evelyn' and 'Kate' are June-bearing strawberries with medium-large, firm berries that ripen in the mid-season with 'Mira' and 'Lila'. They have moderate yields in Nova Scotia and Quebec, and are currently being tested in other Canadian provinces. North American plant sales are licensed to [Lareault Nursery](#) in Quebec and [C.O. Keddy Nursery](#) in Nova Scotia. Variety protection is in progress, and plants will soon be available for sale in the USA.

Raspberry Redomestication. M. Dossett, BC Berry Cultivar Dev. Inc., British Columbia; G. Zdanowicz, AAFC, British Columbia; B. Amyotte, AAFC, Nova Scotia. 2018-2023

Raspberry

In 2018, M. Dossett evaluated a diverse collection of wild *Rubus idaeus* plants in a field trial at Clearbrook, British Columbia, selected individual plants based on plant health and fruit quality, and made crosses among the selections. In 2019, M. Dossett and G. Zdanowicz seedlings from these crosses to the AAFC Kentville Research and Development Centre in Nova Scotia. The seedlings will be evaluated in Kentville in 2021 and 2022, and the best selections will be intercrossed. The population will be sent back and forth between British Columbia and Nova Scotia for 2-3 generations. The objective is to build a new germplasm pool for raspberry breeding, with emphasis on adaptation to variable climates.

Strawberry Diversity Collection Evaluation. B. Amyotte, AAFC Nova Scotia; B. Fofana, AAFC, Prince Edward Island; K. Hummer, USDA, Corvallis, OR; K. Hummer collaborators (many, various locations). 2019-2022

Strawberry

In 2019, K. Hummer sent a collection of 300 *Fragaria x. ananassa* accessions from the USDA clonal germplasm repository in Oregon to the AAFC Kentville Research and Development Centre in Nova Scotia. This collection has previously been genotyped and phenotyped for various plant and fruit characteristics in Corvallis and elsewhere. The collection was planted in Kentville in summer 2020 and will be phenotyped for phenological and fruit quality traits in 2021 and 2022. The Nova Scotia data will be integrated into the larger study to serve as another dimension of genotype x environment for the genome wide association study. The objective is to identify new genetic sources of variation for breeding and selection.



2. List brief impact statements as they relate to each objective. How have the results been disseminated to communities of interest? What do you plan to do during the next reporting period to accomplish the goals?

Objective 1 - Develop improved small fruit germplasm through cooperative breeding and evaluation programs:

The AAFC small fruit germplasm development program serves small fruit growers across Canada through breeding, variety evaluation and germplasm development. Our plants and data have strong relevance to NCCC212 members and stakeholders. The breeding program is focused primarily on June bearing strawberry: our three new releases, selected in Nova Scotia, Canada, are 'AAC Audrey', 'AAC Evelyn' and 'AAC Kate.' These varieties are licensed to [Lareault Nursery](#) and [C.O. Keddy Nursery](#), and will soon be available for purchase in the USA. The Canadian Berry Trial Network is our vehicle for testing new varieties of strawberry, raspberry and blueberry, and disseminating trial results with growers. Annual updates and trial results are disseminated to our grower associations through regional meetings and through our CBTN Google drive. We welcome the addition of new genetics from university, public and private breeding programs on an annual basis. Lastly, AAFC's germplasm development work includes evaluating diverse strawberry and raspberry populations with the goal of increasing breeding resources in the long term. Interim results from this work will be discussed with NCCC212 members throughout the projects, and final results will be submitted for scientific publication upon completion.

3. Include any data, germplasm/cultivar descriptions, research results, etc. that you would like to discuss at the meeting. Please keep this brief, highlighting no more than three discussion points within 500 words. Additional information (data tables, abstracts, etc...) can be included in an appendix.

Objective 1 - Develop improved small fruit germplasm through cooperative breeding and evaluation programs:

The Canadian Berry Trial Network

The CBTN invites NCCC212 members and colleagues to send us your strawberry, raspberry and blueberry plants. The trials are an opportunity to test pre-commercial selections and new commercial varieties in Canada.

The CBTN planted strawberry and raspberry trials in 2019 and 2020. The trials include new varieties and trial selections from AAFC Nova Scotia (A. Jamieson), AAFC Quebec (S. Khanizadeh), U. Guelph (A. Dale) and B.C. Berry Cultivar Development Inc. (M. Dossett) alongside commercial standards. The trial sites are located at the Agassiz Research and Development Centre in British Columbia (E. Gerbrandt and M. Dossett), the University of



Guelph in Ontario (J. Zandstra and A. Dale), the Carrefour Industriel et Experimental in Quebec (P. Lafontaine) and the Kentville Research and Development Centre in Nova Scotia (B. Amyotte). All trials are managed under standard conventional outdoor production practices in each region. Data collection and analyses are ongoing.

We are planning new trials for strawberry, raspberry and blueberry in 2021 and 2022, and we would like to expand our variety mix to include more material from U.S. breeding programs. To plant a full trial in 2021, we would need about 200 plants per variety for strawberry, 100 for raspberry, and 80 for blueberry. We welcome entries from university, public and private breeding programs. We are able to write custom testing agreements with your institution to ensure your germplasm is well protected. Please send me an email if you would like to discuss the program: beatrice.amyotte@canada.ca.

Strawberry Variety Development

'AAC Audrey'

A new June bearing strawberry variety developed in Nova Scotia, Canada, by Andrew Jamieson. 'AAC Audrey' was selected in 2013 as 'K13-11' and named in 2018. It is derived from a cross of 'K04-21', a Kentville selection with medium productivity and medium-high fruit quality, and 'AAC Lila', a cultivar released in 2013 with medium productivity and sweet, attractive fruit. 'Audrey' ripens in the mid-season, at the same time as 'Lila'. It has medium yields, medium-large berries with good firmness and shelf-life, and a consistent conic shape. The plant has some susceptibility to powdery mildew.

'AAC Evelyn'

A new June bearing strawberry variety developed in Nova Scotia, Canada, by Andrew Jamieson. 'AAC Evelyn' was selected in 2013 as 'K13-19' and named in 2018. It is derived from a cross of 'K11-9', a Kentville selection with medium productivity and medium fruit quality, and 'K09-4', a Kentville selection with medium productivity and very firm fruit. 'Evelyn' ripens in the mid-late season, at the same time as 'Mira'. It has medium-high yields, large berries with good firmness, medium shelf-life, and a wedge to conic shape. The plant has some susceptibility to powdery mildew and fruit have shown some sun scald.

'AAC Kate'

A new June bearing strawberry variety developed in Nova Scotia, Canada, by Andrew Jamieson. 'AAC Kate' was selected in 2012 as 'K12-14' and named in 2018. It is derived from a cross of 'K07-32', a Kentville selection with high productivity and low fruit quality, and 'K04-21', a Kentville selection with medium productivity and medium-high fruit quality. 'Kate' ripens in the mid-late season, at the same time as 'Mira'. It has medium yields, large berries with good firmness, medium shelf-life, and a mostly conic shape. 'Kate' berries have medium-high acidity, similar to 'Mira'. The plant has some susceptibility to powdery mildew.

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4. List retrievable or archived publications arising from your collaborative research projects including journal articles, book chapters, review articles, theses, proceedings, and extension publications. Please use ASHS style.

N/A