



# Canadian Agri-Science Cluster for Horticulture 2

## Progress Report April 2016

Activity 18, Potato 17

### Canadian Potato Variety Evaluation Program

#### Research Lead

Mary Kay Sonier

#### Names of Collaborators and Institutions

##### PEI

David Main, Research Biologist, Agriculture and Agri-Food Charlottetown  
 Zenaïda Ganga, PhD, Research Scientist, Cavendish Farms

##### Québec

Andre Gagnon and Sophie Massie, Progest Inc.

##### Ontario

Allan Sullivan, PhD, and Vanessa Currie, University of Guelph  
 Sam Squire, Agricultural Consultant  
 Rickey Yada, PhD, Reena Pinhero, PhD, University of Guelph

##### Manitoba

Darin Gibson, Gaia Consulting Ltd.

##### Alberta

Michele Korschuh, PhD, Alberta Agriculture and Rural Development

##### British Columbia

Heather Meberg, E.S.Cropconsult Ltd.

### Activity Objectives

This activity includes 7 areas of sub-activity:

- PEI - Variety evaluation: adaptation and yield trials & development of management profile of selected promising varieties.
- QC – Potato varieties and line evaluation
- ON – Variety Development
- ON – Nutrient Quality Evaluation of Processing and Table Stock Potatoes
- MB – Evaluation and Adaptation of French Fry Potato Varieties
- AB – Variety Evaluation
- BC – Variety Evaluation

## **Research Progress to Date**

Trials have been completed in all regions for the 2015 crop year and final reports submitted. In the majority of locations, field days were held to display varieties to the industry. Plots were evaluated for total and marketable yield and for various quality parameters as outlined in the project work plan. Method of distribution of results varies by location has included presentations at 2016 winter meetings, sending reports to industry members and collaborators, publication of articles in trade newspapers and magazines, articles printed in peer reviewed journals, and posters at research meeting and grower extension days. There were changes in trial entries as some were dropped due to poor results when compared against standards or other production weaknesses were discovered. Some varieties that have been in the trials have proceeded to small volumes of commercial production and some new lines were added to trials. Some specifics can be found in the Success Stories section of the full report.

## **Extension Activities**

### ***Peer reviewed publications***

American Journal of Plant Sciences, 2016, 7, 69-81 Published Online January 2016 in SciRes.

<http://dx.doi.org/10.4236/ajps.2016.71008>

<http://www.scirp.org/journal/ajps>

Pinhero, R.G., Tsao, R., Liu, Q., Sullivan, J.A., Bizimungu, B., Yada, R.Y. (2016). Protein and phenolic contents and antioxidant activities of 14 early maturing potatoes as affected by processing, American Journal of Plant Sciences, 7: 69-81.

### Book chapter

Pinhero, R.G; Yada, R.Y. (2016). Postharvest storage of potatoes. In: Advances in Potato Chemistry and Technology, 2nd Edition, Jaspreet Singh, Lovedeep Kaur (Eds), ISBN9780128005767, Academic Press eBook ISBN :9780128005767 Print Book ISBN :9780128000021 Pages: 283-313.

Summary report is published in the proceedings for the LMHIA meeting.

A report is sent via email or fax to all BC potato growers by ES Crop Consult Ltd.

Activity 18.v10 –Potato 17.v10 Canadian Potato Variety Evaluation Program – Alberta 2015 prepared by Michele Kanschuh, Alberta Agriculture and Rural Development, Crop Diversification Centre South, 301 Horticultural Station Road East, Brooks, AB T1R 1E6.

Ten client specific reports distributed to variety contributors.

FINAL REPORT: Canadian Horticulture Council Canadian Agri-Science Cluster For Horticulture 2, Activity 18 Potato 17

Project title: Evaluation and Adaptation of French fry potato varieties for Manitoba.

Project leader: Darin Gibson, Gaia Consulting Ltd.

Collaborators: Stephen Paget, J. R. Simplot Company, Mary LeMere, McCain Foods. The report was published in a bound printed publication and distributed at the Keystone Potato Producers Association spring meeting.

J. A. Sullivan and V. Currie. 2015. Ontario Cooperative Potato Variety Trials 2015. Report to Ontario Potato Board Annual General Meeting. Dec 2, 2015. Cambridge ON

J. A. Sullivan and V. Currie. 2016. Final Report to the Stuart Cairns Memorial Fund, Canadian Snack Food Association, Canadian Horticultural Council. Evaluation of Chipping Potato Varieties in Ontario 2014-2015.

Report of the 2016 National Accelerated Release of Potato Selections-Open House. April 08, 2016. B. Bizimungu.

Potato Variety Evaluation in Quebec prepared by PROGEST 2001 INC., . 6833 Marie-Victorin, Sainte-Croix, Québec, G0S 2H0, André Gagnon Research Coordinator, M.Sc., Sophie Massie Project Manager, agr., M.Sc. Report provided to all trial collaborators and suppliers of clones and varieties.

Potato Cultivar Evaluation Trial Report – 2015, January 29, 2016, Collaborators: David Main, Agriculture and Agri-Food Canada, Mary Kay Sonier, PEI Potato Board Report distributed to all collaborators and article summarizing trial results published in trade magazine Prince Edward Island Potato News.

### **Media reports**

<http://www.agannex.com/potatoes-in-canada/digital>

[http://magazine.agannex.com/publication/?i=292041#{\"issue\\_id\":292041,\"page\":24}](http://magazine.agannex.com/publication/?i=292041#{\)

<https://www.guelphtoday.com/local-news/potato-release-highlights-science-of-spuds-196072>

[https://www.youtube.com/watch?v=2YSawf5UcPs&utm\\_content=buffer0d1d1](https://www.youtube.com/watch?v=2YSawf5UcPs&utm_content=buffer0d1d1)

<http://www.plant.uoguelph.ca/news/budding-spuds>

<https://www.youtube.com/watch?v=uzRGZsEb6BI>

<http://adaptcouncil.org/read-news.php?id=9c2I5j1k7r0d>

<http://kitchener.ctvnews.ca/video?clipId=808600>

<https://www.guelphtoday.com/columns/urban-cowboy-digging-deep-to-find-yukon-golds-193118>

<http://www.thegrower.org/news/pink-spud>

<http://www.thegrower.org/news/keeping-their-eyes-open-next-yukon-gold>

<http://www.thegrower.org/news/potato-production>

### **Information events**

- Presentation at ES Crop Consult Potato AGM – made by Heather Meberg, ES Cropconsult Ltd.
- Presentation on trials made at grower short course at LMHIA Ag Show, January 2016, H. Meberg, ES Cropconsult Ltd.
- Field Day, August 27, 2015, Brent Kelly Farms, 4044 96th St Delta, BC
- Field Day, August 27, 2015, Crop Diversification Centre South, 301 Horticultural Station Road East, Brooks, AB
- Oral update presented at the Potato Growers of Alberta Annual General Meeting held November 17-19, 2015 by Michele Konschuk
- Preliminary Results were presented to the Manitoba Potato Research Committee Results Meeting in December and then to the entire grower base at their spring meeting in March.
- June 19, 2015. Visit to Grand Bend Produce. Vanessa Currie, Dr Reena Pinhero and visiting PhD student Roberta Camparos toured the farm and packing plant at Grand Bend Produce. Research results were shared and plans made for future collaborations.
- August 11, 2015. The newly appointed VP Research for the University of Guelph, Dr. Malcom Campbell, toured the Elora Research Station. Vanessa Currie gave Dr Campbell a short tour of the potato research plots.
- August 12, 2015. Potato Research Field Day. Elora Research Station.
- August 20, 2015. Alliston Potato Day and BBQ. Vanessa Currie and Reena Pinhero attended and networked with growers.
- August 25, EarthFresh Foods, Burlington, Ontario. Vanessa Currie and Reena Pinhero were invited to tour EarthFresh Foods' new state of the art packing facility and warehouse.
- October 14, 2015. Ontario Potato Board District 1 meeting. Leamington Ontario. Vanessa Currie attended and shared highlights of research results.
- November 13, 2015. Ontario Potato Board District 2 meeting. Grand Bend, Ontario. Vanessa Currie attended and shared highlights of research results
- November 24, 2015. District 4 meeting. Shelburne, Ontario. Vanessa Currie attended and shared highlights of research results.

- December 2, 2015. Ontario Potato Board AGM. Cambridge, Ontario. University of Guelph Potato Trials. Vanessa Currie presented research results to the industry and distributed approximately 100 printed reports.
- February 4. The Breadalbane Inn, Fergus Ontario. Vanessa Currie was a guest judge at a chefs' competition to create a signature potato dish for the chain of restaurants.
- February 10, 2016. AAFC Potato Variety Release Open House.
- February 18, 2016. Ontario Seed Potato Growers' Association AGM. Shelburne, Ontario. Vanessa Currie attended and shared research highlights.
- February 24, 2016. CHC Stuart Cairns Potato Research Committee meeting. Toronto, Ontario. Vanessa Currie and Al Sullivan attended and discussed research activities and results with the committee.
- March 1, 2016. Ontario Potato Conference. Vanessa Currie and Reena Pinhero attended the conference and networked with industry
- Pinhero, R.G., Yada, R.Y. (2015). Effect of processing on the bioactive constituents, antioxidant potential and estimated glycemic index of early maturing potato varieties, International conference on food chemistry and technology, November 16-18, 2015, San Francisco, USA.
- Pinhero, R.G., Yada, R.Y. (2015). Early potatoes – a healthier food choice, Potato Research Field day, Elora Research Station, August 12, 2015.
- Pinhero, R. G. (2015). All about Potatoes – discussion on different types of potatoes, uses, nutrition, growing and storage. An interactive course for youth aged 13-18, Farm Smart Youth Programme, January 24, 2015. About 75 youth attended in two sessions.

#### ***Other KTT activities***

- February 4, 2015. Dr. Rickey Y Yada, presented "The Science behind Potato Chips" in Research Café at UBC, Vancouver.
- February 27th, 2015. Reena Pinhero attended 4th annual OAC-GSC Colloquium, Arboretum Centre, University of Guelph. About 150 attendees including students, professors and industry
- April 4, 2015. Reena Pinhero attended Food for Health Research forum, at 1 Stone Road, Guelph, had discussions on health benefits of phytochemicals with various stake holders.
- June 19, 2015. Visit to Grand Bend Produce. Dr Reena Pinhero, Vanessa Currie and visiting PhD student Roberta Camargos de Oliveira toured the farm and packing plant at Grand Bend Produce. Research results were shared and plans made for future collaborations
- August 20, 2015. Alliston Potato Day and BBQ. Reena Pinhero and Vanessa Currie attended and networked with growers.
- August 25, 2015. EarthFresh Foods, Burlington, Ontario. Reena Pinhero and Vanessa Currie were invited to tour EarthFresh Foods' new state of the art packing facility and warehouse
- October 21, 2015. Reena Pinhero attended the Microbes, Memories and Mansel: 12th Annual GFSS Symposium on at Delta Guelph Hotel and Conference Centre, 50 Stone Road West, Guelph, ON
- November 11, 2015. Reena Pinhero attended the Project Management course, at the University of Guelph, Ontario
- March 1, 2016. Reena Pinhero attended Ontario Potato Conference, at Delta Guelph Hotel and Conference Centre, 50 Stone Road West Guelph, ON and have productive discussions with growers and potato industry
- March 17, 2016. Reena Pinhero participated in Social Media use for Researchers, University of Guelph
- March 21, 2016. Reena Pinhero attended the Product Development Research Day, 1 Stone Road, Guelph, Ontario
- Variety Trial Field Day, September 4, 2015, AAFC Harrington Research Farm, PEI.
- Cavendish Farms Growers Field Day. September 8, 2015 at New Annan, PE.
- Cavendish Farms 2016 Spring Research Forum, April 13, 2016

### Early Outcomes (if any) or Challenges

Information from these trials is used by industry for a variety of purposes:

- Determine the suitability of a new variety for commercial production under local growing conditions.
- Provide information relative to currently grown standards to determine if the variety has potential to replace a standard to develop a new niche in the marketplace.
- Provide management information that will enable growers to produce new varieties in an economically sustainable fashion.

### Key Message(s)

- The trials themselves seem to be operating in the manner expected with interest and input from industry members.
- Interest in new varieties remains high.
- Included in the trials are some AAFC lines that have been distributed through the Accelerated Release program for both exclusive and non-exclusive evaluation.
- This trial helps the industry to meet one of the research priorities set out in 2011 and the stable funding for these trials will allow continuation of the trials uninterrupted for several years and a good exchange of variety information between growing areas on a regular basis. The information will also give growers a good basis for decisions on adoption of new varieties for production in their growing region.

The Agri-Science Cluster for Horticulture 2 is generously funded by nearly 50 industry partners and Agriculture and Agri-Food Canada's AgriInnovation Program, a Growing Forward 2 initiative.

