Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada
Research Branch | Direction générale de la recherche

Potato Gene Resources Newsletter

Potato Research Centre

Number 9 **December 2002**

Potato Research Centre Construction Update

Susan Cassidy
Chief of Administration, Potato Research Centre
Agriculture and Agri-Food Canada

In August of 2001, staff of the Potato Research Centre began a project that most of us will only be a part of once in our careers, the construction of a new research facility. The project which had been many years in planning prior to Treasury Board approval, was intended to replace our 1950's era laboratory building.

The Concept

The main focus of the new facility was to provide a safer and healthier workplace by upgrading the environmental systems. The building design incorporates the use of natural light, supplied by a light well, which also serves as the link between the new construction and the renovated wing. The project was planned for completion in 2 phases, to allow for local interim accommodation and to minimize disruption to the science programs. The first phase involved the renovation of the administration wing and the construction of the new laboratory wing. The second phase of the project, underway at the present time, involves the deconstruction of the old laboratory wing, the main greenhouse, and the header house complex and the construction of the new reception area and the new greenhouse / header house complex.

Implementation

The new facility, when completed in June 2003, will have 3240 sq. m. of laboratory and special use space. The laboratory design has attempted to accommodate specific requirements, while maintaining a generic profile that will allow for changing science priorities over the next 30 years. Special use areas include a large space that will accommodate our present compliment of growth cabinets, with scope for future expansion. As well, there are 8 growth rooms equipped with environmental controls for light, temperature and humidity. With 5 new environmentally controlled potato storage rooms, we can deliver a wide variety of environmental conditions to support various research programs. The new greenhouse/header house complex will provide improved conditions for research activities in the greenhouses, allowing us also to integrate entomology greenhouse activities into the new facility.

Ventilation in the new facility has been improved by the provision of separate zones for the laboratories and offices. The system has been designed so that the laboratories have a minimum of 10 air exchanges per hour, with 100% exhaust, while the office space has 6 air exchanges per hour at 30% make up air. Another important improvement at the Centre is the stand-by power generator which will protect our valuable research material by ensuring that electrical service is always available. (Continued on page 2)

Potato Gene Resources Newsletter
The Potato Gene Resources Newsletter is an annual publication of the Potato Gene Resources Repository, Potato Research Centre, Agriculture and Agri-Food Canada. The Newsletter provides information on potato germplasm in the Repository and on issues related to the genetic diversity in the potato. The opinions expressed by authors may not necessarily represent the views of Agriculture and Agri-Food Canada.
Le Bulletin est également disponible en français.
To receive the newsletter, please contact:
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http://www.agr.gc.ca/science/fredericton/index.htm
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First Phase Complete!

The last week of November 2002 saw staff move into the newly constructed facility at the completion of the first phase of the project. While the start-up phase has not been without challenges as we begin to test operations, the new facility is a vast improvement over our past accommodations. The location of office/work space for science staff outside of the laboratory area has been an important improvement in the new building. As well, we now have a meeting room in which all staff can be accommodated at one time. The science library has made the transition and is now operational. We are now all eagerly anticipating project completion in June 2003.

Before

After

Annual Report 2002

Jane Percy
Potato Research Centre
Agriculture and Agri-Food Canada

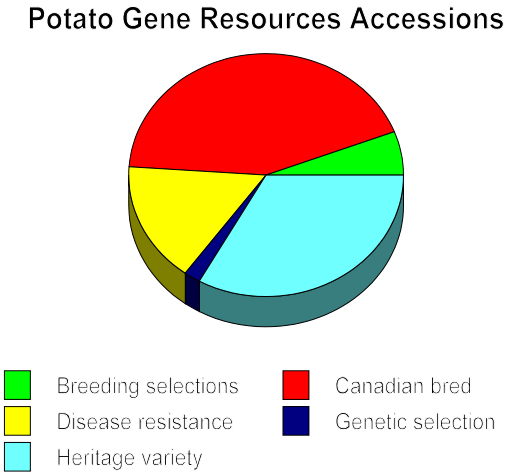
The Collection

1. Holdings

The Potato Gene Resources Repository contains 111 clones. Of this total, 100 are maintained *in vitro*, 11 as tubers only**,** and 3 *in vitro* and also as tubers. A full listing of accessions may be found on attached request form.

2. New Accessions

Preparations for the move to new facilities precluded



introduction of new accessions in 2002. Several new breeding selections are now undergoing virus-freeing treatment and will be ready for inclusion in 2003. Four heritage varieties are also undergoing virus-freeing.

3. Evaluations

This year 29 heritage varieties were grown in 12 hill plots, replicated twice, at the Potato Research Centre, Fredericton. The varieties were evaluated for tuber characteristics, maturity and yield. Cooking quality and appearance and tuber dormancy will be evaluated over the winter. Sprout photos will be obtained. This information will be entered into our Repository database and reported in future issues of the Potato Gene Resources newsletter. Several of the varieties have now been evaluated over a 3⁻ year period.

Thirty heritage varieties were evaluated in Newfoundland for reaction to wart by Steve Wood, CFIA.
As well, many potato varieties are being evaluated on an ongoing basis for yield and wart resistance by George Brinson of Newfoundland.

4. Management

The move to new facilities and demolition of the greenhouse complex did not allow for the disease testing of accessions which have been in the repository for 5 years. Testing will resume in 2003.

5. Requests to the Repository

Thirty-two requests for clones were received in 2002. Two hundred and eighteen clones were distributed: seventy clones *in vitro*, sixty-five as minitubers, and eighty-three as field grown tubers . The reported uses of the potato clones requested from Potato Gene Resources in 2002 are tabulated below.

Purpose of Request	Requests	Clones
Breeding	1	1
Research	12	96
Heritage demonstration	3	33
Heritage evaluation	12	67
Heritage preservation	4	21
Total	32	218

Eleven requests were received from the province of New Brunswick, four from Quebec, four from Ontario, two each from Nova Scotia and Newfoundland, and one each from Prince Edward Island, Alberta.and British Columbia. There were five requests from the U.S.A. and one from France.

Compilation of Requests to Potato Gene Resources 1997-2002

Year	Total Requests	Requests for Breeding or Research	Requests for Heritage Evaluation or Preservation	Total Clones Provided	Clones Provided as Minitubers / Tubers	Clones Provided *In Vitro*
1997	7	3	4	64	27	37
1998	10	5	5	62	30	32
1999	20	10	10	113	29	84
2000	25	9	16	142	93	49
2001	22	10	12	144	76	68
2002	32	13	19	197	148 *	70
6 year total	116	50	66	722	403	340

* Green house grown minitubers were produced this year and minitubers, in excess of our needs, were offered for distribution to clients. Interest in the diversity of tuber appearance among the eight new heritage varieties advertised in 2002, and exceptional production of minitubers combined to significantly increase the number of minitubers distributed in 2002 over other years.

Repository Items of Interest

Communication

- Several requests for information about the Repository, the availability of clones, clone descriptions and pedigrees, and techniques for handling *in vitro* material were received.

- The annual Potato Gene Resources newsletter has a distribution of 210.

- Newsletter #8 was listed on the weekly checklist of the Depository Services Program, Communications Canada, November 15, 2002. It may be viewed at http://publications.gc.ca in Weekly Checklist 02-46 (November 15, 2002) Departmental Publications - Agriculture and Agri-Food Canada- Research Branch . Future newsletters will also be published in the Weekly Checklist.

Displays

- A display of Potato Gene Resources clones was prepared for the Open House "Display of 2002 Potato Selection Releases", held at the Sheraton Hotel, Fredericton, February 25. A selection of *in vitro* potatoes as well as minitubers and field tubers, designed to highlight the diversity of the material in the Repository, was displayed. Potato Gene Resources Repository newsletters with request forms were also available.

Visitors

- Doreen Nitsche, a third year agriculture student from East Berlin, visited the Repository in September.

- Dr. Christiane Deslauriers, Science Director, National Program on Environmental Health - Biodiversity, Agriculture and Agri-Food Canada, visited the Potato Gene Resources Repository in December and met with Richard Tarn, Jane Seabrook, Agnes Murphy and Jane Percy.

Potato Research Centre Website

The Potato Research Centre website: **http://www.agr.gc.ca/science/fredericton/index.htm** offers an overview of the mandate, resources, and achievements of the Centre. The research studies being conducted at the Centre as well as the staff associated with those studies are highlighted. Links to the Potato Research Network and to other agriculture and potato related websites are also available.

Personnel of the Potato Gene Resources Repository
Potato Research Centre

Richard Tarn - Potato Breeder
Jane Seabrook - Plant Physiologist
Agnes Murphy - Plant Pathologist
Trudy Dalton - Potato Breeding Technician
Jane Percy - Potato Gene Resources Technician
Robert Horsman - Foreman, Benton Ridge Substation
Katheryn Douglass - Potato Propagation Technician
Donna Wilson - Plant Pathology Technician
Andrew Gardner - Greenhouse Person
Steven Allaby - Greenhouse Person
Danny Burnett - Greenhouse Person
Sylvia Holder - Greenhouse Person

POTATO RESEARCH CENTRE
POTATO GENE RESOURCES REPOSITORY – AVAILABLE CLONES, DECEMBER 2002

Clones are available as *in vitro* plants, as tubers (*), or as either *in vitro* plants or tubers (†) as indicated. Two test tubes or two tubers (as available) of each clone will be shipped at the cost of client. Clones have been tested and found negative for PVA, PVM, PLRV, PVS, PVX, PVY, PSTV, BRR and bacterial contamination.

CLONE	PURPOSE	CLONE	PURPOSE
ABNAKI*	CK	KESWICK	CC
AC BELMONT	CC	KIFLI	HV
AC BLUE PRIDE	CC	LA VEINE ROSE/LA BELLE ROSE	HV
AC BRADOR	CC/CK	LENAPE†	BR
AC CHALEUR	CC	LIBERTAS*	CK
AC DOMINO	CC	LUMPERS	HV
AC NOVACHIP	CC	MacINTOSH BLACK†	HV
AC RED ISLAND	CC	MANOTA*	CC
ACADIA RUSSET	CC	MARC WARSHAW'S QUEBEC	HV
ANGELINA MAHONEY'S BLUE	HV	MCINTYRE BLUE	HV
ANSON	CC	MIRTON PEARL	CC
AVON	CC/CK	MRS. MOEHRLE'S YELLOW FLESHED	HV
BANANA	HV	MOURASKA	CC
BATOCHE	CC	MYATT'S ASHLEAF	HV
BELLEISLE	CC	NRBK 01 to NRBK 11	CK
BLUE MAC	CC	NIPIGON	CC
BLUE SHETLAND	HV	NISKA	CC
BRIGUS	CC	NORTHERN WHITE	HV
BRITISH COLUMBIA BLUE	HV	NOVA SCOTIA BLUE	HV
CAIN'S IRISH ROCKS	HV	PINK FIR APPLE	HV
CALICO	HV	PINK PEARL	CC
CANDY CANE	HV	PURPLE CHIEF	HV
CANSO*	CC	RAMBLING ROSE	HV
CANUS*	CC	RARITAN	CC
CARIBE	CC	RED GOLD	CC
CARIBOO	CC	RICHTER'S JUBEL	CK
CARLTON	CC	RIDEAU	CC
CHINOOK	CC	RIVER JOHN BLUE	HV
CONESTOGA	CC	ROSE GOLD	CC
CONGO	HV	ROYAL KIDNEY	HV
CORNE DE MOUTON	HV	RUBY PULSIVER'S BLUENOSER	HV
CROTTE D'OURS	HV	SABLE	CC
CUPIDS	CC	SAGINAW GOLD	CC
DONNA	CC	SHARON'S BLUE	HV
DORITA*	CK	SHEPODY	CC
ERAMOSA	CC	SIBERIAN	HV
F58050	BR	SIMCOE	CC
F66041	BR	SKERRY BLUE	HV
F79055†	CK	SLOVENIAN CRESCENT	HV
F79070	CK	STRAIGHT BANANA	HV
FINGERLING	HV	TOBIQUE	CC
FORTYFOLD	HV	TRENT	CC
FUNDY	CC	USDA41956*	BR/CK
GRAND FALLS	CC	USDA X96-56	BR
GREEN MOUNTAIN*	CK	WHITE PONTIAC*	GL
HAIDA	HV	WHITE RURAL NEW YORKER*	HV
HINDENBURG*	CK	YAM	HV
HUNTER	CC	YORK	CC
HURON	CC	YUKON GOLD	CC
JEMSEG	CC/CK		
JOGEVA YELLOW ESTONIAN	HV		
K113-1	BR		

CODE FOR PURPOSE – BR - Breeding Clone; CC - Canadian Bred; CK - Disease Resistance Check ; GL - Genetic Clone; HV - Heritage Variety; *Available only as tubers; †Available *in vitro* or as tubers
More detailed information on clone characteristics, including disease reactions, is available on request.

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POTATO RESEARCH CENTRE
POTATO GENE RESOURCES REPOSITORY REQUEST FORM

Name _____ Date _____

Organization _____

Mailing address _____

_____ Postal Code _____ Country _____

Shipping address _____

_____ Postal Code _____ Country _____

Telephone _____

Fax _____
E Mail _____
Clones requested: (Please refer to available clones listed on reverse)
1. _____
2. _____
3. _____
4. _____
(Please list additional clones on a separate sheet).

Preferred date of receipt: (Please allow at least 5 weeks) _____

For our records, would you please state the intended use of the requested clones (research, breeding, evaluation, or **specify** another use) _____

_____

☐ Clone descriptions required?

☐ Import permit attached if Phytosanitary Certificate required?

_____ Courier account number or alternate shipping arrangements

Please send this form to:

Potato Gene Resources Repository
Agriculture and Agri-Food Canada
Potato Research Centre, P.O. Box 20280
Fredericton, New Brunswick
Canada E3B 4Z7
Attention: Jane Percy
Telephone: (506) 452-3260
Facsimile: (506) 452-3316
E Mail: percyj@agr.gc.ca

Canada