

# SeedBytes

A quarterly newsletter produced for the New Brunswick Seed Potato Industry

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## Inspected Seed Hectares

By Jacques Lavoie—Potato Development  
Specialist— Seed Potatoes

Below are seed areas entered for all Canadian provinces over the past five years.

This table helps to provide information on seed potato trends within Canada and was provided by the Canadian Food Inspection Agency. For further information, contact Jacques Lavoie at the Potato Development Centre at 1-866-778-3762 or by e-mail at [jacques.lavoie@gnb.ca](mailto:jacques.lavoie@gnb.ca).

Area (hectares) Entered for Inspection, by Provinces  
2002-2006

Province	2002	2003	2004	2005	2006	2002-2006 (5 years) Mean	% of Ha
NL	55	68	52	49	61	57	0.2%
PE	10,215	10,430	9,865	7,803	8,537	9,370	30.6%
NS	207	191	192	172	201	193	0.7%
NB	7,231	7,157	6,415	5,970	6,069	6,568	21.7%
QC	2,692	2,838	2,786	2,619	2,640	2,715	9.5%
ON	290	406	327	369	270	332	1.0%
MB	4,417	3,925	3,704	2,825	3,054	3,585	10.9%
SK	2,494	2,712	2,733	2,282	2,343	2,513	8.4%
AB	5,776	5,721	5,166	4,636	3,967	5,053	14.2%
BC	881	952	752	760	784	826	2.8%
<b>Total</b>	<b>34,258</b>	<b>34,400</b>	<b>31,992</b>	<b>27,485</b>	<b>27,920</b>	<b>31,211</b>	<b>100%</b>

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### Upcoming Events:

Potatoes New Brunswick Conference and Trade Show

February 8th and 9th, 2007 at the Grand Falls Sports Complex, Grand Falls, NB

For more information, contact Kyla at (506) 276-1820 or by e-mail at [ctpotato@potatoesnb.com](mailto:ctpotato@potatoesnb.com)

New Brunswick Seed Potato Growers Association Annual Meeting

Tuesday, March 20, 2007 - 5:30 PM - at the Perth-Andover Legion, Perth Andover, NB

For more information, contact Robert Watson at (506) 473-2379 or [rpwatson@nbnet.nb.ca](mailto:rpwatson@nbnet.nb.ca)

Electronic versions of all Seed-Bytes issues can be found online at [www.gnb.ca](http://www.gnb.ca), then click language preference, Departments and Agencies/Agriculture and Aquaculture/ Potatoes/SeedBytes and select the month for the issue.

The newsletter link has been emailed to all recipients. If you do not have the link, contact Andrew Sullivan at [andrew.sullivan@gnb.ca](mailto:andrew.sullivan@gnb.ca) or 1-866-778-3762.

# Plant Breeders' Rights and Canada – Seed and Variety Opportunities?

By Gary Hawkins—Business Development Manager—McCain Produce Inc.



Canada introduced Plant Breeders' Rights (PBR) legislation on August 1, 1990. This was accomplished after a decade of significant debate and controversy and two previous attempts in Parliament. Potatoes were amongst the first six genera/species of plants covered by the new PBR regulations developed in November, 1991. Potatoes have also been one of the most active crops with 239 variety applications for PBR currently listed or about 10% of the total applications of all crops in Canada.

Canada is one of over 50 member countries of The International Convention for the Protection of New Varieties of Plants (UPOV). UPOV develops global standards for plant variety protection, and each member country creates its own variety laws based on UPOV convention. Through UPOV, there is an international agreement between nations on the fundamentals of variety rights to allow fair movement of seed and plant material and to allow plant breeders to recover value from their variety inventions. The United States has a Plant Protection Act that provides similar rights to Canada's PBR Act. The US is also member of UPOV.

PBR grants the breeder exclusive rights to grow and sell seed of his/her newly protected variety. PBR legislation provides a legal basis for the premise that a plant variety is intellectual property and the developer has the right to collect fees from licensed users of that variety for a period of time; currently 18 years in Canada. PBR are similar to patent rights, with two fundamental differences. The breeder of a newly protected variety must make it available to other breeders for further variety development work (i.e. research into making more new varieties). The legislation also makes provision for a grower to save seed for his/her own use, as long as that use is not production for resale as seed to other producers without permission of the owner of variety rights. These issues were very important during the debate prior to initial adoption of PBR legislation.

PBR has created new opportunities for the potato industry in Canada and will continue to do so as long as there is support from new variety users. Respect for vari-

ety rights by growers and companies who use variety material is critical for Canada to be recognized as a country with opportunities for new potato variety development. Royalties and license fees collected on new variety seed sales help to ensure continued investment in variety development by both public and private interests. PBR protection has created interest in new varieties developed within Canada as well as interest in Canada as a market for potato varieties developed abroad. Prior to PBR Canadian potato growers were denied access to the PBR protected varieties used in foreign countries.

Initially, virtually all potato variety development in North America was by public agencies such as the federal governments of Canada and the United States and by State Universities. The introduction of PBR legislation created an incentive for private investment in potato variety development. Initial interest in Canada was largely in the form of new variety introductions by foreign private potato breeding companies from The Netherlands, Germany, Sweden, Scotland and Ireland. Foreign potato variety introductions in the mid 1980's through plant quarantine led to seed increase for research trials that even preceded Canada's adoption of PBR. This was done to have new variety material 'ready to go' if Canada passed PBR legislation. Gradually, public programs devised private variety release policies and mechanisms to create incentive for private development of protected varieties created through public programs. These policies have made it possible for exclusive release and development of public varieties under bid systems that return royalty revenue to the breeding programs while creating the powerful development incentive of variety exclusivity. It is important that varieties continue to be locally bred and selected to suit North American production conditions. PBR will help to sustain North America's public and private potato breeding programs.

Varieties are not self propelled into production systems: each variety needs a champion to develop a production management package and create a market op-

portunity. Development of an appropriate management package or the right "production recipe", including details on seed preparation, fertility requirements, seed spacing, and special cultivation, storage or processing needs etc, requires significant financial investment and time in production trials. Production trials are also used to identify weakness of the new variety and whether or not management solutions are available to offset the flaws. The value that each new PBR-protected variety brings must exceed the added cost of trials, variety license fees and royalties for that variety to be successful.

A 10 year review was conducted of PBR in Canada from its introduction in 1991 to 2001, to evaluate the impact on agriculture. It was concluded by industry, researchers and government that the general well-being of the horticulture and seed industries has improved since the adoption of PBR legislation and that opportunities in crop agriculture have improved as a result\*. Prior to the introduction of PBR legislation critics felt that seed would become expensive and dominated by multinational companies, there would be a reduction in public plant breeding, restrictions on germplasm and fewer varieties available to farmers. The review of PBR found that none of these concerns materialized.

PBR have provided incentive for variety development in potatoes both from foreign investment and within Canada, and have helped Canada to compete with other countries and provide greater variety choice in the marketplace. New potato varieties provide real opportunity for improved sustainability through more efficient nutrient use and improved pest and disease resistance. More diverse variety options for producers help reduce the risk of regional crop failure due to reliance on a small group of varieties.

\* Ten Year Review of Canada's Plant Breeders' Rights Act, <http://www.inspection.gc.ca/english/plaveg/pbrpov/10yre.shtml>

# New Brunswick Aphid Summary—2006

By Dave Wattie—Potato Development Specialist— Integrated Pest Management



Integrated Pest Management is an integral component of sustainable crop production. Of primary importance in the Upper Saint John River Valley is the management of aphid species and their impact on the potato crop. There are many species of aphids found in eastern Canada and the northeastern United States. Although some species are host-specific, many feed on a variety of host plants including the potato. In general, these species are monitored in the same manner.

## Biology

Aphids are small, soft-bodied insects with complex life cycles. Often they are pale green in colour but vary from black to red to green. Some species, like the Potato Aphid (*Macrosiphum euphorbiae*) survive winter in the egg stage. Other species, most notably the Green Peach Aphid (*Myzus persicae*), migrate in on wind currents from the south. Life cycles may involve more than one host species. Aphids are the only insects that give birth to live young. Reproduction may be asexual or sexual. The first aphids appear in May and several generations are produced over the summer. Aphids may be winged

or wingless.

## Symptoms and Damage

Aphids feed by piercing plant tissue and sucking out plant juices, primarily from shoots and leaves. Excessive feeding damage may lead to wilting or leaf distortion. However, only when aphid populations are extremely high, does damage result from direct aphid feeding. Of primary concern to potato growers is not the direct feeding of aphids, but rather their ability to transmit viruses. The two viruses of major concern are Mosaic (PVY) and Leaf Roll (PLRV). The primary vector of these viruses is the Green Peach Aphid.

## Scouting Techniques

Aphid infestations are usually clumped in their distribution. High populations develop when the weather is warm and humidity is high. Plants should be visually inspected throughout in the summer to determine numbers present. The standard field sampling method is to use a yellow pan trap. The pan is set in the field and filled with water and a small amount of liquid soap. Samples are collected weekly and sent to the lab at the Potato Develop-



Aphid Pan Trap



Aphids feeding on the undersides of leaves

ment Centre.

In 2006, the PDC managed a network of 75 yellow pan traps. The species of interest included Green Peach Aphid, Potato Aphid, Buckthorn Aphid and a fourth category of “Other Species”.

Although there is a trend towards increasing total aphid numbers, the overall population is still remaining at low levels. This is probably due to the wide spread use of the systemic insecticide Admire as an in-furrow application at the time of planting. The biggest differences in population dynamics is with the Potato Aphid, *Macrosiphum euphorbiae*, with a seven-fold increase in pressure. The Green Peach Aphid, *Myzus persicae*, also increased in numbers. The increase in population dynamics in 2006 may have been due to extended periods of warm and humid conditions that would be very favourable to the aphid’s ability to reproduce.

Post harvest testing will indicate whether or not this population pressure had an effect on seed borne virus levels.

For further information, contact Dave Wattie at the Potato Development Centre at 1-866-778-3762 or by e-mail at david.wattie@gnb.ca.

Aphid Alert Summary	2006	2005
Total # of Traps	75	49
# of Growers Participating	46	24
<i>Aphids trapped per week</i>		
Average Aphid Catch (all species)	2.67	1.20
Median Aphid Catch (all species)	1.25	0.29
Average Green Peach	1.12	0.08
Median Green Peach	0.30	0.05
Average Potato	5.11	0.69
Median Potato	1.78	0.41
Average Buckthorn	3.55	3.41
Median Buckthorn	4.45	0.94
Average Other	0.92	0.63
Median Other	0.97	0.44

## The Great Potato Challenge

(story taken from British Potato Council (BPC) Website—[www.potato.org.uk](http://www.potato.org.uk))

### Seed Pieces

The following are popular potato varieties grown in countries around the world.

France	Holland	Australia	Peru
Sirtema	Spunta	Sebago	Tumbay
Rosabelle	Bintje	Kennebec	Limena
Felsina	Santana	Coliban	Huaralina
Europa	Diamant	Russet Burbank	Huayro
Agata	Desiree	Desiree	Tomasa
Ireland	China	Britain	Mexico
Rooster	Atlantic	Maris Piper	Alpha
Kerr's Pink	Shepody	Maris Peer	Atlantic
British Queen's	Russet Burbank	Charlotte	Bintje
Record	Zongshu 4	King Edward	Tollocan
Cara	Zongshu 3	Desiree	Sangema

#### Did you know...

In 1770 a crop failure gave a war its name - "The Potato War" when a war between Frederick the Great and Maria Theresa forced soldiers to steal the enemy's potatoes as there was not much more food to eat. When the potatoes were finished, so did the war.

(information courtesy [www.thehotpotato.com](http://www.thehotpotato.com))

BPC research has shown that consumers would like to see an increase in the variety of potato dishes on pub and restaurant menus. It also shows that chefs need to be educated about how to store and handle potatoes. So the BPC has launched the Great Potato Challenge – so the search is on for the best potato dish in Britain for 2 0 0 7 !

Now in its second year, the Great Potato Challenge encourages chefs to get creative with potatoes whilst demonstrating their understanding of the different varieties available. The challenge is designed to inspire chefs to think about increasing their use of potatoes on menus. It also provides a platform for continued communication about the importance of correct storage and handling and use of the correct variety. There are 2 categories for entries:



- Pub / Restaurant Chef of the Year – Entrants should submit a potato-based main course dish that has particular appeal to vegetarians, many of whom are disappointed by uninspiring dishes and limited menu choice.
- Student Chef of the Year – New for 2007, the category challenges further education students studying for a catering degree or similar qualification to create a potato-based starter or 'light bite' dish that adds variety and interest to a pub or restaurant menu.

#### Editor

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