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SeedBytes

A quarterly newsletter produced for the New Brunswick Seed Potato Industry

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Crop Insurance Update — Seed Potatoes

By Margaret Mann — Manager—Business Risk Development

Production Insurance (also known as Crop Insurance) is a business risk management program that protects New Brunswick producers from yield reductions and crop losses due to natural causes. For most crops, this includes drought, excess moisture, snow, frost, wind, flood and unavoidable damage from insects and plant disease.

The New Brunswick Crop Insurance Commission (NBCIC) was established in 1974. It administers the Production Insurance program on behalf of the Government of New Brunswick and Agriculture and Agri-Food Canada under the Agricultural Policy Framework (APF) and has been a cornerstone of agricultural risk management for over 33 years. Production Insurance products have been developed for, and in consultation with, New Brunswick farmers. New Brunswick Production Insurance provides insurance protection for potatoes (seed, processing and table), grain, grain corn, canola, soybeans, strawberries, apples, wild blueberries, sweet corn and processing carrots.

The Production Insurance plan for potatoes offers farmers personalized coverage tailored to the needs of their farm. It is based on an average of their individual yield history (adjusted for quality losses). At the time of purchase, producers can choose to insure from 60% to 90% of their average probable yield at a selected unit price option. To be eligible for an indemnity, producers enrolled in the program must report damage when it occurs. Indemnity payments are triggered when the harvested yield is less that the insured production. Producers are paid the difference between the insured probable yield and the harvested yield, multiplied by the selected unit price. For example, if a seed potato grower has a probable yield of 260 cwt of seed potatoes and chose 80% coverage, he would be paid for any yield loss less than 208 cwt per acre. The payment equals the yield shortfall times the unit price. One of the main objectives of the NBCIC is to continue to work with farmers to make production insurance more efficient and effective so as to strengthen New Brunswick's valuable agriculture industry. In response to industry requests, several program enhancements were added to the 2007 potato insurance plan, including a 90% coverage option and an individual seed potato variety insurance option. In 2007, program participation increased 18% from the previous crop year with 75,300 acres insured and total liability was in excess of $66.1 million. The potato plan insured 25,710 acres of processing/table potatoes and 9,850 of seed potatoes, of which, 45% were insured under the individual seed variety insurance option. These are a lot of numbers, and what they basically illustrate is

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Upcoming Events:

Potatoes NB Annual Conference and Tradeshow — Thursday, February 7th and Friday, February 8th, 2008 at the Grand Falls Sports Complex. For further information, please contact the Potatoes NB office at (506) 473-3036 or ctpotato@potatoesnb.com

Northeast Potato Technology Forum — Wednesday, March 12th and Thursday, March 13th, 2008 at the Delta in Fredericton, NB. For more information contact Dr. Loretta Mikitzel at 1-866-778-3762.

International Potato Technology Expo in Charlottetown, PEI on Friday, February 15th and Saturday Febryuary 16th. For more information, visit www.potatoexpo.ca.

Potato Development Centre Staff Nominated for National Award

Collaboration between Potato Development Centre Specialists in Wicklow and the Information Technology Branch in Fredericton has netted recognition on a national scale. This group was a finalist for a Canadian Information Productivity Award (CIPA). In total there were 170 entries, with 24 winners in 7 categories.

A CIPA award is very prestigious, being the premium place to highlight innovation and IT in Canada. It is the highest form of recognition for the IT capabilities of an organization and showcases work from all across Canada.

The project put forth for consideration was the Total Potato Production Sites (ToPPS) project. This consists of an in-house administration tool where data are entered and validated. Some of the parameters validated include weather, severity values for late blight, crop conditions, disease and insect levels. A dedicated website was constructed to report this data.

Weather data was posted on a daily basis, while field data was posted on a weekly basis. The website can be viewed at http://daamaaextweb.gnb.ca/010-001//index.aspx?lang=en.

Congratulations to Potato Specialists Dr. Khalil Al-Mughrabi, Dr. Loretta Mikitzel, David Wattie, Suzanne Young, Network Administrator Dusty Tower and Gary Beattie and his IT team for this accomplishment!

2007 CIPA Award

Bon Accord Update

Dave Thornton and Shaun Pelkey—Bon Accord Elite Seed Potato Centre

The Bon Accord Elite Seed Potato Centre (BAESPC), first opened in 1965, is operated by the New Brunswick Department of Agriculture and Aquaculture (NBDAA). BAESPC's location in the Upper Saint John River Valley, at an elevation of 305 meters above sea level, was selected for its low aphid counts, harsh winters and isolation from commercial potato production, all of which minimize the threat of pests and pathogens. The strategic location within the New Brunswick potato belt means travel distance to pick up seed orders is minimal.

The objective of BAESPC is to provide top quality, high class seed potatoes for sale to the New Brunswick potato industry. The Centre produces Nuclear stock and Elite I seed potatoes of 52 cultivars, giving New Brunswick seed growers flexibility to respond quickly to changing market demands.

BAESPC receives disease-tested *in vitro* plantlets and microtubers from the Plant Propagation Centre in Fredericton. The plantlets and microtubers are transplanted into a soil-less medium and grown in a protected greenhouse environment to produce Nuclear Stock minitubers. The minitubers are stored through the winter and planted in the field the following spring. This first field generation produces Pre-Elite class seed, which in turn is planted the following season to produce Elite I class seed. Elite I class seed is the primary seed class for sale at BAESPC.

BAESPC encompasses approximately 405 ha (1000 acres), 101 (250 acres) of which are suitable for seed potato production. The balance of the property is woodland which acts as a buffer zone for disease control. A minimum three year crop rotation – potatoes, oats and timothy - is practiced at the Centre. The oats and timothy are mowed throughout the summer months and the timothy is plowed down in the fall. During the 2007 growing season, Pre-Elite seed of 46 cultivars was grown on 1.9 ha (4.67 acres). In addition, Elite I seed was produced of 39 cultivars on 9.2 ha (22.80 acres), for a total of 11.1 ha (27.46 acres) of potatoes planted in the field.

The crop is monitored weekly throughout the growing season and any diseased or off-type plants are rogued from the field and destroyed. On-site field inspections are carried out by Canadian Food Inspection Agency (CFIA) inspectors at least twice during the growing season. An intensive aphid monitoring system is in place, with 15 yellow pan traps strategically placed within the potato fields. Aphid populations are monitored to determine if thresholds have been reached, and to determine the topkill date. BAESPC carries out an intensive virus testing program on all field-grown material. Each seed lot is tested by the Agricultural Certification Services laboratory in Fredericton for PVY, PVX, Potato Leaf Roll Virus and Bacterial Ring Rot.

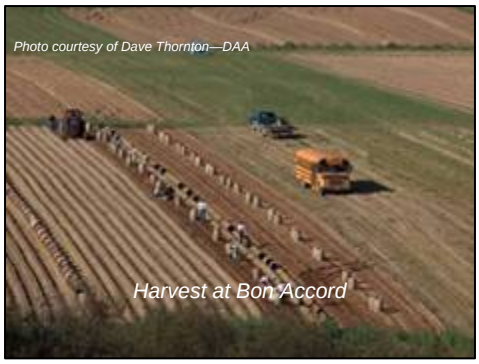
BAESPC currently has four free-standing screenhouses that provide 16,320 m^2 of screenhouse space. All screenhouses are aphid-proof and conform to all CFIA regulations. In 2007, 74,341 propagules (plantlets and microtubers) of 58 cultivars where planted in the screenhouses. Laboratory virus tests are carried out on all screenhouse-grown material. Screenhouse watering is automated to maintain constant moisture levels, fertilizer is applied weekly using injectors and protective fungicide sprays are applied using a 100L portable sprayer every 5-7 days as required.

Field-grown potatoes produced at BAESPC are harvested using a two-row digger, picked by hand then stored in a 5,600 m^3 climate-controlled potato storage. Once inside, the tubers are stored using a palletized container system. Each cultivar, class within cultivar and seed lot within class are all stored separately. The storage environment is held at 3°C with 92% relative humidity. The potato storage also houses grading and packing facilities and an isolated loading bay.

New Brunswick seed growers submit their seed requests each year by mid-December. The Bon Accord Seed Allocation Committee meets in mid-January each year to allocate cultivars based upon grower requests. The committee consists of representatives from the NB Seed Potato Growers Association, NBDAA and CFIA.

Oversight of the BAESPC is carried out by the Stakeholders Advisory Committee with representatives from the NB Seed Potato Growers Association, CFIA, Agriculture and Agri-Food Canada, and NBDAA. This group provides the BAESPC management with feedback on market trends, industry needs, recommended potato cultivars and hectarages each year.

For further information on the Bon Accord Elite Seed Potato Centre or you wish to order seed potatoes for 2008, please contact David Thornton or Shaun Pelkey at 1-866-778-3762 or dave.thornton@gnb.ca or shaun.pelkey@gnb.ca.



Plant Propagation Centre Update

Andrew Sullivan – Manager

It is the beginning of January, and initial nodal cuts are now being made that will develop into all the plantlets required to meet our client's orders for the 2008 seed potato season. While there may not be a lot of changes at a tissue culture lab from year to year, there are some aspects of our facility that we would like to share with you.

The Plant Propagation Centre (PPC) opened in 1983 and began supplying the industry with plantlets the following winter. Today, over 150,000 plantlets and microtubers are supplied annually to the New Brunswick seed potato industry.

Our centre stores over 480 different lines or cultivars in our potato germplasm repository. To the best of our knowledge, our repository, in terms of number of cultivars held, is the largest in Canada. Each year the PPC sends over 100 lines or cultivars from the repository to the Agricultural Certification Services Laboratory for disease testing. Once declared clean, these cultivars are shipped from our laboratory to clients within the province, as well as internationally. Prior to cutting, plantlets are tested for Potato Virus A, S, X, M, Y, Potato Leaf Roll Virus, Potato Latent Carla Virus, Potato Mop Top Virus, Potato Spindle Tuber Viroid and Bacterial Ring Rot.

Only New Brunswick clients receive bulk shipments of plantlets; out-of-province clients receive five plantlets per cultivar per request.

We request that all bulk plantlet orders be placed by December 15th to ensure adequate time to prepare the cultivars for testing and multiplication. Initial plantlet nodal cuts begin in January each year and conclude with the final cut in May. Most growers pick up nuclear stock material in early June for planting in their greenhouses or screenhouses.

One of the mandates of the PPC is to provide new cultivars to our clients. To this end, we continually search for cultivars that fit well with New Brunswick growing conditions and have potential in domestic and export markets. We work closely with the Provincial Seed Potato Specialist and other New Brunswick Department of Agriculture and Aquaculture Specialists to identify new cultivars of interest to provincial producers.

There are 23 new cultivars and lines being introduced into the repository this year. Before a cultivar is placed in our repository, it must endure a rigourous disease testing regime performed by technologists at the PPC. Once it has passed that testing stage, it is then retested by the Agricultural Certification Services Laboratory in Fredericton. All plantlets or microtubers shipped from the PPC have been disease-tested a minimum of four times before being released to clients.

The PPC also hosts incoming delegations from around the world. In the past year our lab hosted 25 different tours ranging from local groups to delegations from Russian, China and Australia. These delegations travel to New Brunswick to view the facilities and review the protocols our industry has in place to ensure a high quality seed potato system. The PPC is one of the many industry and research facilities visited by delegations.

The PPC provides two main products to clients - plantlets and microtubers. Plantlets are small potato plants grown in sterile media in a test tube. Microtubers are small tubers grown in sterile containers. Microtubers are stimulated to form by manipulating daylength and sucrose levels in the media of the plantlets. Plantlets and microtubers are both certified as nuclear stock, which when planted in a greenhouse, produce minitubers, which are also certified as nuclear stock material.

At the PPC, we provide a consistent high level of service, and quality plantlets and microtubers, to the seed potato industry. We are able to maintain this high quality due to the experience and integrity of our staff. The two technologists at the PPC have a total of 43 years of tissue culture experience and help to create a level of comfort and trust in our clients. The technologists at the PPC routinely provide technical advice and procedures consultation to similar facilities across the country.

If any grower is interested in a new cultivar, or requires further information on any cultivar in our system, please feel free to contact us at 1-866-778-3762 or Andrew.Sullivan@gnb.ca.

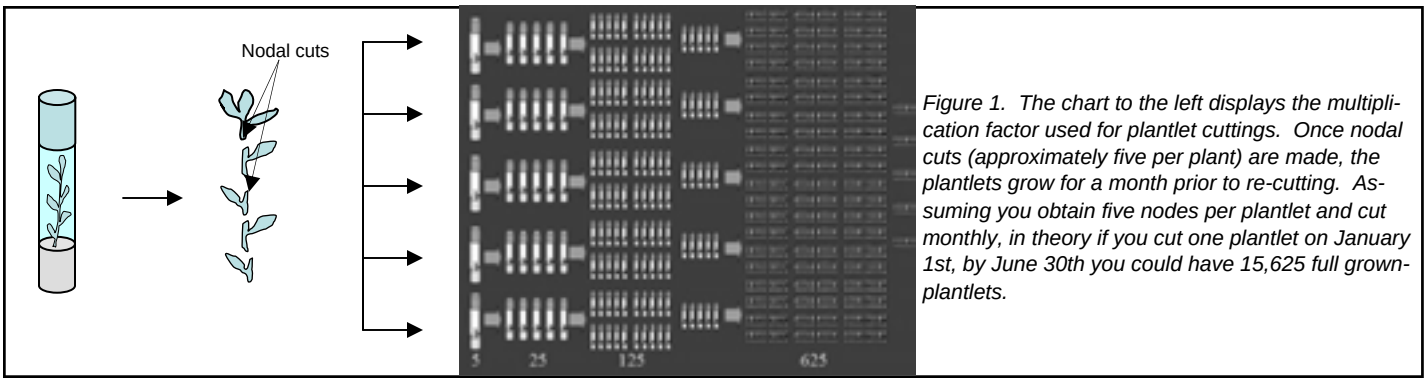


Figure 1. The chart to the left displays the multiplication factor used for plantlet cuttings. Once nodal cuts (approximately five per plant) are made, the plantlets grow for a month prior to re-cutting. Assuming you obtain five nodes per plantlet and cut monthly, in theory if you cut one plantlet on January 1st, by June 30th you could have 15,625 full grown-plantlets.

National Potato Council Seed Seminar Update

Andrew Sullivan—Plant Propagation Centre

The National Potato Council Seed Seminar is an annual event showcasing the seed potato industry through a trade show and information sessions discussing issues of importance to the industry. The past few years the seed seminar has opened with a one day Potato Industry Outlook Summit. This "summit" covers a range of topics facing the potato industry and issues on how to market potatoes in the future. Topics presented this year included supply and demand for the fresh market, food safety and transportation issues.

The seed seminar provides presentations over two days. Topics this year included nematode identification, black dot, silver scurf, variety development, variety updates and scab research (powdery and common). There were a number of issues discussed during the meeting around the nematode situation in North America and its effect on 2008 seed potato sales.

One of the highlights of the conference was a panel discussion regarding the Potato Virus Y (PVY) situation in North America. The panel had pathologists and seed certification experts from New York, Idaho, Colorado and the United States Department of Agriculture, who discussed the current PVY levels in seed potatoes and examined strategies to be employed to lessen PVY spread. Those strategies included managing for PVY and not the individual PVY strains, strict adherence to PVY tolerance limits, improved coordination between breeders and pathologists/virologists to strengthen PVY resistance in new varieties and development and implementation of regional best management practices to limit virus spread. During this panel, Idaho representatives discussed their updated program that makes a post harvest lab test, rather than a post harvest grow-out test, mandatory. Due to varieties that are symptomless carriers of PVY, Idaho lacks confidence in visual readings from grow-out tests. One region saw a quarter of its seed production rejected this year due to PVY. To increase customer confidence in their seed, this region plans to publish future post harvest test results in a clear manner to show the virus status of their seed lots. The last recommendation from the panel was to discard any new varieties that are symptomless carriers of PVY from breeding programs, regardless of other beneficial traits.

Potatoes NB Tradeshow booth at the NPC Seed Seminar

An overview of new and potential varieties available for tablestock and processing markets was presented. The trend for processing varieties, mostly originating from the Pacific Northwest, lean towards those with good processing characteristics that also lessen the impact on the environment (lower nitrogen and water requirements). The trend in tablestock varieties is towards red and specialty cultivars with yellow and different coloured flesh.

The seed seminar attracts tradeshow booths representing seed potato related businesses from across North America. Potatoes New Brunswick and the New Brunswick Seed Potato Growers Association were represented this year with three representatives from the NBSPGA Board and the Executive Director and Chairman of Potatoes NB. All were on hand to work at the Potatoes NB booth during the trade show. This conference is a great method for disseminating seed potato directories to the industry. The New Brunswick 2008 seed directory was well received by conference attendees and was quickly picked up from the booth.

The Potato Development Centre in Wicklow has one copy of most provincial and state seed potato directories. If you would like to view them, ask Deb Paget at the main office for them.

Crop Insurance—Seed *(cont.)*

that 65% of the provincial potato acreage and 90% of the provincial seed acreage is insured.

New Brunswick insurance products continue to stabilize the net incomes of agriculture producers. Indemnities for the 2006 potato crop were just over $7.1 million compared to a net premium income of $3.8 million. The producer production insurance loss ratio, measured as dollars of indemnity paid to growers divided by the dollars of premium paid by producers (ignoring government premiums paid), was 4.69. For every dollar paid to the NBCIC by producers, potato producers received back $4.69. When government premium contributions are considered in the total premiums paid, the loss ratio in 2006 was 1.87. The NBCIC paid out $1.87 for every dollar it received. The five-year average loss ratio is 1.34. Loss ratios greater than 1 do not mean that all farmers receive indemnities above their premiums, but they do indicate that for the last several years the government and producer contributions of insurance premiums have resulted in the transfer of money to provincial potato producers.

The NBCIC looks forward to providing innovative products and services to the province's agriculture industry and stakeholders now and in the future. Our knowledgeable team of employees are available to assist you with your program and contract questions. For more information contact your local Production Insurance Representative in the Bouctouche, Fredericton, Grand Falls, Tracadie-Sheila, or Wicklow offices of the New Brunswick Department of Agriculture and Aquaculture, call (506) 453-2185 for general information, or visit our website at http://www.gnb.ca/0178/01780001-e.asp

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