

SeedBytes

A quarterly newsletter produced for the New Brunswick Seed Potato Industry

April 2008
Volume 40, Issue 4



Preparing your seed for spring

By Dr. Loretta Mikitzel — Potato Development Specialist—Physiology

Consider the following when bringing seed home and prepare it for planting:

1. The experience, expertise and integrity of the seed potato grower are the most important factors in the consistent production of good quality seed tubers. Choose a seed grower you know and trust.
2. Make sure you and your seed supplier are in agreement on cultivar, clone, seed size, class, grade, quantity, price, date of delivery, etc.
3. Make sure all paperwork is in order – certification, field inspection results, post harvest test results, purchase agreement.
4. Disinfect the truck(s) that will transport the seed.
5. Disinfect all surfaces of the storage area where the seed will be stored. Remember – “the blue stuff” disinfectant works best in cold water.
6. Do not store seed in any area where a sprout inhibitor was used or where sprout inhibitor-treated tubers were stored.
7. Are you familiar with Canadian seed potato regulations and tolerances? Check the seed upon arrival and contact CFIA immediately if quality may be an issue and an inspection is needed.
8. Keep records of conditions and weather / temperature during loading, unloading and handling. Good records can protect you if seed does not perform.
9. Keep seed lots separate whenever possible.
10. Keep the seed clean: provide disinfectant foot dips at all seed storage entrances. Make sure employees use them. Refresh foot dips regularly – a dirty dip is a useless dip.
11. Avoid rough handling and bruising the tubers. Bruising stresses the tubers, decreases seed performance and invites pathogens to attack, and rot, your seed.
12. After delivery, store seed tubers at 4-5°C and 90-95% RH. To minimize damage during handling, slowly warm seed to 10-12°C over 7-10 days prior to cutting.
13. Cut seed with sharp, clean blades adjusted to deliver piece size that weigh about 2 ounces. Disinfect the seed cutter daily and between seed lots.
14. Apply seed piece treatments, at the label rate, at time of cutting and provide workers with appropriate safety gear.
15. Cut seed pieces may be stored and wound healed at 12-15°C, 95%RH and with adequate oxygen in piles no higher than 6 feet.
16. Plant either freshly-cut seed (cut and planted on the same day) or seed that has been wound healed for about two weeks. Time the seed cutting operation accordingly.
17. To control sprout growth if planting is delayed, cool the cut seed pieces down to <6°C, then re-warm prior to planting.
18. Unless physiologically aged seed is desired, avoid storage conditions that promote sprout growth and avoid desprouting the tubers.
19. Consider greensprouting to promote an early harvest for seed production or to capture that lucrative early table market. Place small whole tubers in continuous light at 12°C for 4-6 weeks prior to planting. Greensprouting tubers advances the growing season by about 2 weeks.

Inside this issue

PVY in Seed.....	2
Farm Safety.....	2
Rudra's Retirement.....	2
Accelerated Release (AR).....	3
2008 AR Selections.....	4

Upcoming Events:

Potato Roguing School will be held in late June/early July. For more information, please contact Janet McLaughlin or Jacques Lavoie at 1-866-778-3762.

The Potato IPM Scouting School will be held again this summer. Please contact Dr. Khalil Al-Mughrabi at 1-866-778-3762 for further information on dates and topics to be covered.

PVY in Seed

Dr. Khalil Al-Mughrabi—DAA

A key factor affecting the quality and quantity of potato crop yield that is under the grower's control is the quality of the seed tubers. The two most important sources of PVY (the main cause of mosaic in New Brunswick from one season to the next) are infected seed potato tubers and infected volunteer potatoes. Therefore, when purchasing seed:

1. Use seed certified free from viruses or with very low incidence of infected tubers.
2. Request for and check the results of field inspections and insist on post harvest test results before agreeing to purchase seed.
3. Purchase the seed from a supplier that has a reputation of delivering quality seed; and that the growing area has a history of producing quality seed.
4. Prior to purchasing any seed for re-certification, you should be satisfied that the seed is going to have a good chance of passing the certification inspections.
5. Frequently inspect the seed during delivery to ensure that it meets the agreed upon quality stipulations.
6. The buyer should contact both the seed potato grower and CFIA within two working days after receiving the seed potatoes, if not satisfied with the quality.
7. If a re-inspection is requested it will be carried out by a CFIA inspector within five working days after receipt of the complaint.
8. Most disinfectants are inactivated by soil and plant debris. Therefore, soil and plant debris should be removed by thoroughly cleaning the equipment and storage with a pressure washer or steam cleaner before the disinfectant is applied.
9. Seed storages and all equipment coming in contact with the seed lot should be disinfected with a quaternary ammonium. Surfaces must remain wet for at least 10 minutes for the disinfectant to destroy disease organisms.
10. Contact between incoming seed lots and any potatoes left over from the previous year should be restricted.
11. Avoid sharing equipment between farms; sharing seed cutting equipment is particularly risky.

Farm Safety

Suzanne Young—DAA

It's that time of year again . . . time to dig out the plow and the tractor, the planter and the sprayer. Spring is coming and a new cropping year is about to begin. When digging out equipment and preparing it for the season, don't forget about farm safety.

Replacing or repairing guards and checking the safety of pinch points are physical and mechanical things to be checked. However, also remember the mental aspects of farm safety. Think before you act. Remember; protect your back by lifting objects properly. Take the time needed to complete a task properly. Don't take shortcuts, especially when it comes to safety. It only takes one brief moment of inattention or carelessness to injure yourself for a lifetime.

During the 2008 Agricultural Safety Week (March 12-18), the theme was "Manage more than just your back!" It focused on sprains, strains, falls as well as keeping pathways clear and removing potential hazards. This theme should be carried throughout the year. Although shortcuts may seem to save time, they often cost more in the long run.

At all times, make sure you are protected from the Power Take Off (PTO) shaft. When any piece of machinery jams or malfunctions, turn off all power sources and use safety lockouts. All seasonal and casual workers require training in proper equipment use, safe techniques and procedures, and what to do in the event of a breakdown or accident before starting work. Remember: a safe workplace is a productive workplace.

For farm safety resources please contact Suzanne Young by e-mail: suzanne.young@gnb.ca or by phone: (506) 392-5199 or 1-866-778-3762.



Dr. Singh's Retirement

Andrew Sullivan—DAA



Dr. Rudra Singh, after a 42 year career researching potato viruses in Canada and around the globe, is retiring.

Rudra earned his Ph. D. from North Dakota State University in the mid 1960's and moved to Fredericton to start a Postdoctoral Fellowship in 1966. In 1967, he joined Agriculture and Agri-Food Canada's Potato Research Centre as a virologist: he has been solving various virus concerns facing the seed potato industry ever since.

One of Rudra's first accomplishments was the eradication of Potato Spindle Tuber Viroid (PSTV) from the seed potato production areas of New Brunswick in the 1970's. In cooperation with his federal and provincial counterparts, Rudra's work helped eradicate PSTV from the province, allowing New Brunswick to retain its status as an elite seed production province.

The early 1970's also saw a dramatic increase in the levels of potato leaf roll virus (PLRV) in the province. Dr. Singh was an instrumental member of the New Brunswick/ Maine task force set up to investigate the causes of the increased prevalence of PLRV and offer options to control its spread. From this cooperative venture, the initial "Aphids Alert" program was born, complete with bumper stickers and information released regarding aphids and their role in virus transmission. Since 1977, PLRV has not been an issue in provincial seed potato production.

Dr. Singh is known internationally as an expert potato virologist. Over the years, Dr. Singh has consulted on virus issues worldwide and developed diagnostic tests to identify viruses previously unseen in seed potatoes in this region.

The entire potato industry thanks Rudra for his tireless efforts on its behalf and wishes him the best in his retirement!



The eleventh annual Open House to present new potato selections to industry took place on February 20th at the Potato Research Centre, Fredericton from 10:30 to 3:15 pm. This event, organized by the Potato Breeding Program team, provided growers, industry and provincial government representatives a chance to examine new selections in person. Fifty six people registered for the event.

Fifteen selections were on display this year. They were candidates for different market sectors including French fry, chip, fresh market and specialty grades and products. Reflecting the interest in diversifying the range of cultivars available for commercial production and export markets, the 2008 selections included those with russet, red, purple and yellow skins. Furthermore, white, cream, yellow and purple flesh colours were represented in the collection.

For the first time at this event, potatoes freshly prepared and cooked in the Quality Laboratory were available for participants to taste. The samples included chips, peeled, diced and steamed cubes; small whole tubers steamed in their skins as well as baked and conventional French fried and oven roasted potatoes.

The selections on offer had survived six years of agronomic and quality evaluation by the breeding team and had been subjected to preliminary disease resistance assessments. The next step in the process of evaluation puts a 10 kg sample of breeders' seed in the hands of interested parties to determine their suitability for production. To obtain the opportunity to field test these selections for up to two years, growers or industry agents have declared their interest and have submitted a nominal fee to receive samples on a non-exclusive basis.

Following the non-exclusive Phase 1 testing, participants are

invited to submit cash bids to procure the right to conduct up to three more years of exclusive evaluation. At any point in Phase 2 exclusive testing, participants may negotiate a six year, renewable license to commercialize the selection.

Since its inception in 1998, 77 selections have been offered in this manner, resulting in 35 exclusive field testing agreements and 12 licenses for commercialization. The AR2008 selections will be eligible for exclusive field testing in 2010.

Looking ahead to next February, what might be introduced in the AR2009 series?

Their identities have yet to be determined and will hinge on the outcome from trials conducted in the 2008 growing season. The process is as follows: by March each year, the breeding team has collected, assembled and analyzed an extensive array of data. These data come from trials to assess agronomic traits such as maturity, tuber shape, appearance and size and yield potential; from culinary assessments

for processing and cooking quality and from disease resistance tests performed on materials in the fifth generation of the breeding cycle. The data are examined and used to identify about 24 -30 selections that have sufficient merit to enter Adaptation Trials in the region and across the country.

In New Brunswick, AAFC Adaptation Trials are conducted at a site shared with the New Brunswick Department of Agriculture and Aquaculture, usually in the vicinity of Woodstock or Hartland. The site is representative of the potato production area. Entries in the Adaptation Trials are replicated and the yield is graded according to Canadian grade standards. Samples from these trials are subjected to a battery of tests and evaluations over the fall and winter months. Additional data and observations are collected from trials conducted at the AAFC Benton Ridge Sub-station.

Each summer, usually in mid to late August, a Field Day is organized for growers. Samples are dug for display and comparison with check cultivars. For anyone interested in participating in the Accelerated Release program, this is the first preview of the next year's contenders. It also presents an opportunity to talk to breeders and technicians to exchange views on trends in the industry.

Full details of the Accelerated Release program may be found at the AAFC web site at www.agr.gc.ca/potato-cultivars. This site also contains descriptions and photos of all fifteen AR2008 selections along with tables that summarize yield and quality data. Participants in the AR program are encouraged to provide feedback and observations on performance directly to the breeding program. This will assist breeders track the performance of parents and identify selections best suited to potato production.



Attendees to the Open House included industry stakeholders and provincial seed potato producers, among many others.



A sampler of 2008 AAFC selections

Agnes Murphy—AAFC

AR 2008-01	French fry / fresh market potential; high yielding, red skin French fry selection with very good bake quality.
AR 2008-02	French fry / fresh market potential; attractive russet French fry selection with very good boil and bake quality.
AR2008-06	Chip potential; bright, uniform cold temperature chip selection with scab resistance.
AR2008-10	Fresh market potential; high yielding, uniform midseason selection with very good boil and bake quality and resistance to golden nematode and PVX.
AR2008-14	Fresh market with creamer potential; uniform, round selection with purple skin very good appearance, good boil and bake quality, resistance to golden nematode, wart and PVX.
AR2008-15	Pigmented Flesh/Antioxidant potential; high yielding selection with purple flesh, good boil and bake quality.



AR 2008-01



AR 2008-02



AR 2008-06



AR 2008-10



AR 2008-14



AR 2008-15

Don't Forget Farm Safety!



Published by: Department of Agriculture and Aquaculture

SeedBytes is produced through a collaborative effort by Potato Development Centre staff.

Special thanks to Dr. Loretta Mikitel for ongoing editing of this newsletter and Suzanne Young for her editing in this issue.

If you have ideas for future issues, please forward them to any Potato Development Centre staff member.