

# Potato Perspectives

## Introducing Two New Staff Working for Potatoes

### CMCDC Irrigation Specialist Position

**Elaine Gauer** will be starting at CMCDC on May 29<sup>th</sup>, as the Provincial Irrigation Agrologist, with Manitoba Water Stewardship.

Elaine's past working experience includes working in Roblin as the NW Soil Management Specialist, for thirteen years. She also worked for Ag Canada Research Branch in Brandon. Her first job with the provincial government was the Irrigation Agrologist position, when it was first created, in 1981.

Elaine has been in Brandon for about a year now, as the Organization Management Specialist, with the Economy and Rural Development section. She is looking forward to the new job, and working with producers again.

The primary responsibilities of the Irrigation Specialist position are to:

- lead in the development, management and implementation of the CMCDC program of applied irrigation research, demonstration, monitoring, and technology transfer.
- develop and deliver programs and extension activities related to sustainable irrigation practises, to all stakeholders groups and the public.
- analyze and interpret irrigation water use data to refine water allocation guidelines

- provide planning, development, implementation, and evaluation assistance to clients wishing to develop irrigation projects

Working full-time out of the CMCDC-Carberry location, the Irrigation Specialist will play an important role in the Centre's mission to support crop diversification and sustainable water management.

### Potato Pest Management Specialist (Acting)

**John Heard** has sought out and accepted the responsibilities of the Potato Pest Management Specialist in an acting capacity until Tracy Shinners-Carnelley returns in February 07. John's reason for the change is simple, "I'm a practicing Certified Crop Advisor and I need to maintain and apply my skills in a variety of fields."



John's past experience with potatoes include; Precision Ag projects, Nutrient Uptakes and Potato Crop Scouting.

John's workload will include, weekly potato agronomy meetings, assisting with Aphid and Late Blight Program, field troubleshooting and extension and running the Potato Hotline with Tom Gonsalves.

## Contacts

### MAFRI contacts:

Tom Gonsalves, Potato Specialist	(204) 745-5671
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### CMCDC contacts:

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Elaine Gauer, Irrigation Specialist	(204) 834-6016



## MB Tile Drainage Workshop Report

MAFRI in cooperation with PFRA hosted the 2006 Manitoba Tile Drainage Workshop on March 14<sup>th</sup> and 15<sup>th</sup> of 2006.

Sixty-five people attended the workshop from as far away as PEI and Newfoundland. 30% were commercial potato growers. There was a panel discussion made up of MB producers, commercial tile installers and a pipe manufacturer. Various companies/government agencies set up displays related to tile drainage.

Response to the workshop has been very good. Registered attendees gave the event an average score of 81%.

There are limited copies of the course materials available in binder form at a cost of \$35.00 or if you wish a CD copy is available free of charge. If you are interested in either format, please contact Monika Menold or Heather Wiebe (Extension Coordinators, MAFRI) at 745-5663 to order a copy.

## Mark Your Calendars!

### Potato Pest Management Clinic

9:30 AM Thursday July 27<sup>th</sup>, 2006 Carberry CMCDC

Lunch provided after the clinic followed by optional general crop field day.

### 2006 Potato Industry Golf Day

Tuesday July 25<sup>th</sup>, 2006  
Scotswood Links, Elm Creek

For more information please contact KVPA @ 239-6932

Don't forget to attend the **Weekly Agronomy Meetings**. For more information see your Hotline brochure or visit the [www.mbpotatonews.ca](http://www.mbpotatonews.ca) under the section "What's New"

To receive Potato Perspectives by email please contact [mmenold@gov.mb.ca](mailto:mmenold@gov.mb.ca).

**Potato Perspectives is also available on our website at [www.mbpotatonews.ca](http://www.mbpotatonews.ca)**

## Colorado Potato Beetle Control

With the coming of a new season arise thoughts of Colorado potato beetle (CPB). While we are weeks ahead of seeing the first major emergence of this annual pest, decisions of whether to use an in-furrow or seed piece treatment at seeding or wait and use a foliar insecticide have already been made by growers.

In recent years, the widespread use of Admire (imidacloprid) has done an excellent job of knocking back the population of CPB to the point where some growers are seeing only minor infestations and relatively few beetles. This situation is causing growers to rightly ask whether a more expensive in-furrow or seed piece treatment is necessary. Often the right decision is to save some money and make use of a foliar insecticide.

This year sees the introduction of a new insecticide from DuPont called Assail. It is an excellent choice as a foliar insecticide and all early test results show it works well under Manitoba conditions. As growers consider using Assail as a foliar insecticide it is very important to remember that both Assail and Admire are in the same chemical class, the neonicotinoid insecticides. This is a critical point to remember as any potential for resistance that may have been built up in the population to Admire will readily carry over to Assail. As such, Assail should not be considered as a rotation to a different product. It

is a different active ingredient (acetamiprid versus imidacloprid) but it is in the same chemical class and has the same mode of action on the insects so it cannot be considered as a rotation option.

If a grower has made the choice to go with a foliar insecticide for controlling CPB this year then Assail is a fine option. We just want to remind growers that it isn't a rotation tool to follow previous years of Admire usage. Chemical class rotation is the key to avoiding or reducing the potential for resistance buildup. We've had a great run of superb control with neonicotinoid insecticides. If you're trying to maintain that, consider rotating to a group of insecticides outside the neonicotinoids. Consider insecticides in the other groups such as the Spinosyns or even the Pyrethroids that still had good control in many areas (just watch the temperature restrictions). Manitoba growers have done an excellent job in protecting the neonicotinoids from resistance; let's keep up the good work.



*-Brent Elliott, Entomologist*

## European Corn Borer in Potatoes: An Issue in MB?

If you've read anything out of Atlantic Canada or talked to any growers out there about insect pests affecting potatoes, then you've surely heard talk about European Corn Borer (ECB). More recently there are reports of it affecting potatoes in Manitoba in 2005. What you've heard is true, but there's more to the story.



European corn borer is indeed a serious pest in Atlantic growing regions, much more so than it is in the prairies. It is a significant issue in the east, but has not reached those levels here in Manitoba. Several fields were discovered to have ECB populations in them last year. ECB has always been in Manitoba as anyone growing corn will attest to. On occasion, it has been reported from potato, but never as a

serious pest, so why is there so much concern now? Most of the concern probably arises from stories based on what's going on in Eastern Canada.

In Manitoba however, we may not ever have the problem to the same degree. In talking with Dr. Galen Dively from the University of Maryland about the prob-

lem we experienced last year, we discussed all of the growing conditions and history of ECB in potato in Manitoba. His conclusion was that because of the growing conditions we experienced, it is likely that the potato plants were more attractive to the ECB than were corn plants when the ECB emerged last summer and began looking for egg laying sites. If you recall, the potatoes were doing quite well and plants were sizable by the start of July. Corn on the other hand was very stunted and quite small. Additionally corn plants when they are quite young (up to early whorl stage) release a natural insecticide called DIMBOA that can kill insects and may deter egg laying. This would further Dr. Dively's assertion that the corn wasn't suitable at the time and the potatoes were more attractive.

In a separate conversation with Dr. Edward Grafius from the University of Michigan, he echoed the same opinions as Dr. Dively had. Both agreed that it was likely the unusual year more than a shift in preference from corn to potatoes by the ECB. We'll keep an eye on the situation this year. The hope is that if we have relatively good growing conditions for the corn, that's where the ECB will go, largely ignoring the potatoes in the process.

-Brent Elliott, Entomologist

## Shaving Rates of Fungicides

I've been hearing concerns regarding shaving rates of protectant fungicides. Without field experience at this yet – I had to turn to the scientific literature. I found a recent study looking at fungicide rate shaving effect on late blight in Michigan (see <http://www.lateblight.org/pdf/kirk-et-al-lateblight-mangmnt-crop-protection-2005.pdf>). Here is a table modified from their findings with the chipping cultivar, Snowden using the product Allegro fungicide in 2001.

### Late Blight Control with Reduced Fungicide Rates

	Application Intervals / Total Applications During the Season			
	5 days / 16	7 days / 12	10 days / 8	14 days / 6
Rates	Leaf area affected % (max = 100%)			
Full rate	0	5	15	20
2/3 rate	8	12	15	20
1/3 rate	25	20	20	20
no fungicide	40	40	40	40

After assessing the effect of each season long spray program, they concluded that ineffective control was achieved at the 1/3 rate, partial control with the 2/3 and

good control with the full rate at short spray intervals (5-7 days). At the extended spray intervals all treatments were partial to ineffective in control (10-14 days).

The apparent consequences of reducing rates to those below the label are:

- Reduced duration of control – are you willing to substitute an increased number of spraying operations for reduced rates.
- Reduced control – which may offer a foot-hold for late blight in your area.
- Another consequence may be development of resistance to the pesticide. Generally this is not a concern with some of the broad spectrum, multi-site protectant fungicides, but it would be a bad habit to develop for the rest of your spray program.

In extension, we are all for reducing fungicide inputs; that's why your industry supports intensive monitoring of weather and growth stages in order to prepare disease risk forecasts throughout the growing season. However, the pesticide reduction is accomplished through the proper frequency of fungicide applications not lowering rates.

- John Heard, Potato Pest Mgmt Specialist (Acting)



# Early Weed Control for Potato Fields

Many weeds had a free ride in much of the province in 2005. Wet weather prevented some in-crop spraying and certainly reduced the competitiveness of crops. This is a problem, since a major key in producing a weed-free potato crop is through cleaning up weeds in rotational crops that have more weed control options.



So knowing that weed pressure will probably be high in 2006, I spoke to a couple of seasoned crop scouts on what they will be watching for. Here are 6 of their pointers.

## 1. Winter annual and perennial weeds

In spring we expect to find stinkweeds, shepherd purse and sow thistles, but with the gentle winter of 2005 we have observed that fall germinated annual weeds like cleavers, chickweed and even volunteer canola and wheat have overwintered. If these weeds are not thoroughly controlled through the seedbed preparation and potato seeding operations, they will need to be controlled with a burndown application prior to potatoes cracking the surface. The annual broadleaf and grass weeds that will germinate from seed in the warm potato hills can generally be controlled with a ½ litre rate of glyphosate/acre, whereas these larger winter annual weeds may need up to 1 L/ac for adequate control.

## 2. Get strange weeds identified

We can also expect to see more strange weeds – some encouraged by the wet weather and poor crop competition of last year. Examples of this are curled dock, kochia, night-flowering catchfly and biennial wormwood. Curled dock is a winter annual that pops up every year after wet conditions. Seeds live for over 80 years, so the plants you see now were not likely floated in with last year's rain. Special weed-control options may need to be employed, so make sure your scout gets these weeds identified.

## 3. Hilling operations

Many growers powerhill prior to potato emergence, and some control of annual weeds will be accomplished through smothering weeds. However with high weed populations and large weed size, a burndown treatment may still be required.

## 4. Volunteer canola

Some growers have potatoes following canola somewhere in the rotation. Although Roundup Ready (RR) canola offers great opportunities to clean up fields in advance of potatoes, any resulting volunteers may restrict your burndown options to products like Gramoxone.

## 5. Timing the burndown application

When using a glyphosate product for a burndown, you must ensure applications are completed before ground-crack to avoid potential potato damage to the crop and reduce the risk of having glyphosate residue found in tubers. Glyphosate applied after emergence will injure or kill potatoes. Seed tubers harvested from potatoes receiving glyphosate spray or drift often produce numerous spaghetti-like sprouts from each eye and fail to emerge. Hence, seed growers often avoid glyphosate completely in preference for a Gramoxone treatment.

## 6. Scouting for potato emergence

Ideally one would want to spray when as many weeds have emerged as possible but prior to ground crack. Potatoes typically emerge between 2½ to 3½ weeks following seeding – but the calendar is no substitute for field scouting. Select an area of the field that will warm up quickly and be the first area to emerge. This is typically a sandy ridge, an area sheltered by trees, etc. Scouting by digging in the hill will give an indication of how much time you have. Remember to account for the conditions ahead, since rainfall may keep you out of the field for a couple days and shut this spray window.

And finally, before spraying your emerged potato crop, remember to clean the booms of your sprayer. One of my first mystery calls to a potato field was not to see crop circles – but crop triangles. Of course the grower had cleaned the glyphosate mix out of the tank – but neglected to flush the booms. The grower started spraying right into the field – and produced these elongated triangles. This was a short lived mystery as the field was located on a major road and the grower disked the evidence down before neighbours could speculate on the supernatural effects.

- John Heard, Potato Pest Mgmt Specialist (Acting)

# Sanitation At Any Cost

In my previous role in soil fertility, I felt I could gauge a grower's attentiveness to sanitation by simply checking the seeder in July. If there was still fertilizer sitting in the fertilizer boxes, rusting out the delivery system, then I knew something about housekeeping on that operation. I'm learning that sanitation in the potato operation is much more detailed and of greater consequence than simply rusted out fertilizer spreaders.

Of particular note are the requirements now instated under the *Bacterial Ring Rot in Potatoes Regulation* that was put in place in August of last year. These requirements are in place as a result of past problems and a need to prevent further instances of bacterial ring rot (BRR). Components of this regulation include the following:

- Record keeping of potato plantings (including date, location, weight, class and certification number of potatoes)
- Written records of potato sales (sale date, amount and identification of buyer)
- Mandatory reporting of suspected BRR in potatoes in the field, storage, processing or packing plant
- Disinfection and sanitation of storages, equipment, implements or machinery on operations where BRR has been verified.

Of new interest to me has been the attentiveness to sanitation that extension workers follow going on field calls to potato fields or operations. A year ago when attending one of the weekly field agronomy meetings I was asked to spray some disinfectant on my shoes and wear plastic boots. I thought to myself – "I'm here to look at bugs in potatoes, not to preg check the sow herd". Now this has become standard practice. The "strange tradition" of spraying down your shoes with disinfectant and then putting plastic boots over top needed to be explained in detail to me. This is done to specifically combat any BRR residue that may be present on shoes. To be effective in killing BRR, disinfectant must thoroughly soak the surface for at least 20 minutes. In order to prevent the disinfectant from evaporating away or being worn off before this period,

the plastic boots are worn. Now you know too. I have attached here the "Recommended Sanitation Procedures for Potato Farm Visits", written by Tracy Shinnars-Carnelley last year.

The following recommendations are provided to prevent the spread of potato diseases from field to field or between farms. All people serving the potato industry should adopt these sanitary practices.

## Recommended Sanitation Procedures for Potato Farm Visits

1. Contact the grower for permission to enter fields and other facilities on the farm.
2. Keep your vehicle clean.
3. Whenever possible, avoid driving your vehicle into fields or potato handling areas.
4. Carry a boot brush and a supply of disinfectant in your vehicle at all times. Quaternary ammonia is recommended as it is registered for bacterial ring rot disinfection. **Not all cleaners or disinfectants are effective at destroying bacterial ring rot.**
5. Wear coveralls or other protective outerwear that can be removed or disinfected regularly.
6. Clean, washable, footwear is recommended and rubber boots are preferred.
7. Clean, wash, and disinfect your boots thoroughly on arrival at each field/farm/storage shed and before leaving.
8. Remove dirty outerwear, including boots before entering your vehicle.
9. If handling tubers, wear disposable gloves.
10. Maintain a detailed logbook of field/farm/storage shed visits.

-John Heard

Potato Pest Management Specialist (Acting)

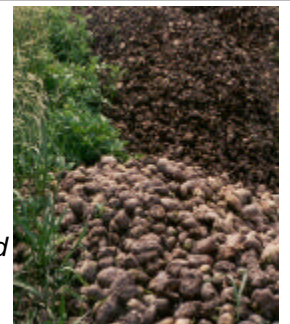
# Got Cull Piles?

In making farm calls this spring it has been hard not to notice the occasional potato cull pile. In order to prevent the spread of disease, here are the recommended methods of how to properly dispose of these potatoes:

1. Field spreading in the fall or winter
2. Burial under 3 feet of soil.
3. Feed to livestock
4. Composting

Should sprouts develop from discarded tubers or volunteer tubers in the ground despite the above efforts to destroy cull piles, then the sprouts should be controlled by herbicide and/or cultivation.

- John Heard



## Perfect Summer Weather Expected — Maybe?

Environment Canada has just released their latest long-term forecast and the news is good – or at least better than it has been for the past two growing seasons. Both the 0-3 month temperature forecast and the 0-3 month precipitation forecast indicate that May, June, and July will bring above average temperature and mostly average to above average precipitation in southern Manitoba. As many producers continue to recover from the cold and wet season of 2004 and the subsequent very wet season of 2005, this most recent forecast is welcomed news.

But there is a catch. Before we start planting our tropical crop varieties and cancelling the crop insurance, it is worth looking further into Environment Canada's seasonal forecasts. Everyone has at some time complained about the accuracy of weather forecasts, particularly as it extends further into the future. Within one or two days, the forecast is usually pretty accurate. As it extends from three to five days, the reliability decreases substantially. So how reliable is the forecast when it is predicting two to three months in advance? Not very reliable.

Fortunately Environment Canada acknowledges the limitations of their seasonal forecasts by including with the forecasts a "skill map" representing their historic percent correct. A higher percentage of skill indicates a more accurate forecast. According to Environment Canada, based on the verification period, a statistically significant skill level would exceed 45%. A purely random forecast would be on average 45% correct. Anything 45% skill or less would indicate that the forecast does not show skill and is no better than pure chance. As shown in the summary table below and in the forecast maps available at <http://www.weatheroffice.ec.gc.ca/>, the results of these forecasts are not statistically significant and are no better than chance.

With an accuracy that is worse than random, farmers would be well advised to think twice before basing their management practices on seasonal forecasts. Adjusting practices according to these forecasts can not only be a waste of time and effort but doing so can generate greater losses than ignoring the forecast all together. Take for example the forecast that was issued in the spring of 2004 which showed above normal temperature and below normal precipitation for the upcoming months. If a producer were to have followed the prediction by favouring more towards the warmer season crops, their resiliency to variable weather conditions would be less than had they planned for the normal range of weather conditions. The 2004 season turned out to be the coldest season record with precipitation that was well above average. None of the grain corn crop was harvested that year.

While 2004 was a rare event, one that was beyond the reasonable coping range of many operations, it is none the less important for producers to realize what type of event has a reasonable risk of occurrence and to be prepared for such an event. The best method of doing this is to look at the past climate for an area. What is the risk of frost, heat, drought, or flood? Planning according to climatic risk is the best method of dealing with most events that occur. As conditions vary considerable from year to year, producers must expect this variability, regardless of what the forecasts say. Until the skill and reliability of seasonal forecasts improves, past weather is the most effective way of predicting what to expect in the future.

- Andy Nadler  
Ag Met Specialist

### Seasonal forecasts of temperature and Precipitation for May-June-July 2006 issue on May 1st 2006

Station	Temperature Forecast		Precipitation Forecast	
	Forecast	Skill (%)	Forecast	Skill (%)
BRANDON	Above	No (<45%)	Above	No (<45%)
CHURCHILL	Above	46	Normal	No (<45%)
DAUPHIN	Above	No (<45%)	Normal	No (<45%)
GILLAM	Above	No (<45%)	Below	No (<45%)
THE PAS	Above	No (<45%)	Below	No (<45%)
LYNN LAKE	Above	No (<45%)	Below	No (<45%)
THOMPSON	Above	No (<45%)	Below	No (<45%)
WINNIPEG	Above	No (<45%)	Above	45



## Early Season Late Blight Q&A

As we head into another season of growing potatoes, it may be time to review some of the basics of Late Blight knowledge to keep in mind while managing your crop in 2006. So here are five questions that come up from time to time, some of the answers, could surprise you.

### 1. Can a Late Blight infected potato germinate?

YES. If the potato has not been decomposed entirely by decay organisms, a blighted tuber can sprout and give rise to new stems and leaves. The Late Blight pathogen can grow through the tissues of the plant and eventually give rise to spores capable of infecting other potato plants. It due to this fact, that infested cull piles, volunteer potatoes, and planting infected seed pose a threat to initiate late blight epidemics and should all be effectively managed.

### 2. How fast can Late Blight spread?

5 DAYS. Under ideal conditions (18-22°C) symptoms may be visible, after as little as 3 days after successful infection by a spore. After an additional 1-2 days, a new generation of spores capable of infecting healthy plants can be produced. Therefore, in as little as **5 days** under optimal conditions, a potato plant can go from healthy to a threat to the rest of the crop.

### 3. Does the Manitoba Potato Network predict whether disease will occur?

NO. The Manitoba Potato Network, evaluates the RISK of a Late Blight outbreak, based on the assumption that the Late Blight pathogen is present and no effective management strategies have been employed. A high risk suggests there is a concern that late blight could develop, not that the disease has developed. It also assumes that tubers free of late blight are planted, which partly explains why Late Blight may appear earlier than the threshold value.

### 4. Can Late Blight be spread by irrigation water?

YES. If your crop has symptoms of Late Blight, and you irrigate from over head, the splashing effect of the water on the plant has the potential to move the spores from diseased to healthy plants. Just like a rain event could.

Irrigation water that has *Phytophthora infestans* spores in it can also spread the water. While not common method of spread, *Phytophthora* could be spread from a source of water contaminated with zoospores, whether it be lake, reservoir, or river.

### 5. I am calling the Potato Hotline and listening to the messages, is it still necessary to scout my field?

YES, it would be a good idea. Disease risk predictors are best used in conjunction with scouting, not as a replacement for disease scouting. Weekly scouting of potato crops in conjunction with the use of a disease forecaster can increase the chances of early detection of Late Blight. Within a potato crop, there are a number of factors that can result in the creation of microenvironments that may be suitable for development of late blight. Within any field there are likely to be areas that stay wet longer, areas where fungicide application can be more difficult and areas in which plant growth and development is hindered, relative to the rest of the field. The risk assessments made cannot account for all of the variation in a field.

These are five questions you may have had yourself or maybe you have more questions. If so please don't hesitate to contact staff at the Carman Knowledge Centre, Crops Branch.

- Philip Northover, Pathologist





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