

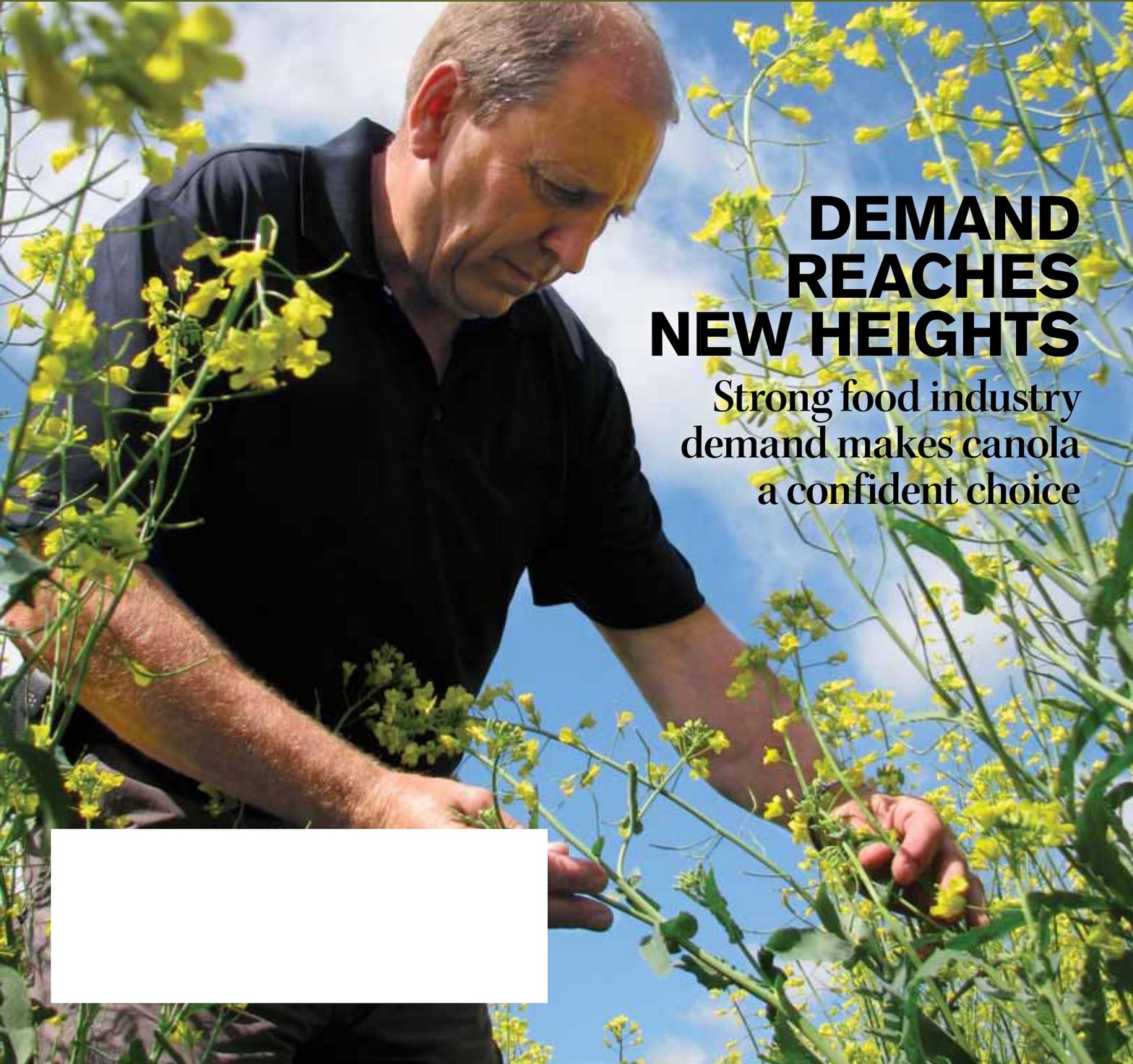
# CANOLA Digest

THE SOURCE FOR CANADA'S CANOLA GROWERS

JANUARY 2012

INNOVATION & RESEARCH

Ritz sounds off • Clubroot conundrum • Optimizing nitrogen

A man in a black polo shirt is shown from the chest up, leaning over and examining a canola plant. The plant has bright yellow flowers and green leaves. The background is a clear blue sky with some light clouds. The man's expression is focused as he looks at the plant.

## DEMAND REACHES NEW HEIGHTS

Strong food industry demand makes canola a confident choice



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Pioneer <sup>®</sup> Product	Comparison Brand/Product	# of Comp.	Pioneer Yield	Comp. Yield	Yield Adv.	Yield % Win
45H29	DeKalb 73-45RR	79	49.6	48.5	1.2	61%
45H29	DeKalb 73-65RR	20	45.3	43.9	1.4	70%
45H29	InVigor 5440	23	54.9	55.4	-0.5	48%

## 45S52



Hybrid with Pioneer Protector<sup>®</sup> Sclerotinia resistance built-in.

Pioneer <sup>®</sup> Product	Comparison Brand/Product	# of Comp.	Pioneer Yield	Comp. Yield	Yield Adv.	Yield % Win
45S52	DeKalb 73-45RR	26	54.3	53.0	1.4	54%
45S52	Pioneer 45H29	184	50.8	50.5	0.4	53%

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Pioneer <sup>®</sup> Product	Comparison Brand/Product	# of Comp.	Pioneer Yield	Comp. Yield	Yield Adv.	Yield % Win
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# CANOLA Digest

A new year not only welcomes growing demand for Canadian canola oil, but new research to boost production. This issue highlights the role of innovation and research – from new food products, to optical sensing fertilizer technologies, to the future of disease management.



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*Cover: Terry Phillips, vice president of the Ontario Canola Growers Association, checks a canola field near New Liskeard, Ontario.*

*Photo by Jay Whetter.*

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# SHE MADE OUR INDUSTRY BETTER

By Debbie Belanger

Denise Maurice travelled well in many circles. Scientists, academics, politicians, industry executives, overseas customers – Denise was well known and respected by all of them. But where she was most comfortable, where her eyes lit up and her voice rose with enthusiasm, was when she was with farmers. That's what drove her – the desire to help farmers solve their crop production issues and maximize their returns.

Canada's agriculture industry lost one of its most passionate advocates and most knowledgeable weed scientists when Denise passed away in November. Her family suffered a great loss. Many of us lost a good friend. And farmers lost one of their greatest supporters.

As vice-president of crop production with the Canola Council of Canada, Denise was one of the driving forces behind the choice of content for *Canola Digest*. She took tremendous interest in identifying topics she believed were most relevant to farmers. We pay tribute to Denise on page 7.

Some of the stories in this issue of the magazine were suggested by Denise. Among them, an article on page 26 about current grower-funded research on new blackleg resistance genes and

*Canada's agriculture industry has lost one of its most passionate advocates and most knowledgeable weed scientists.*

resistance durability, improved fungicide strategies and new management practices. Notes Swan Lake, Manitoba grower Dan Hacault, "We try to select the varieties with the highest resistance rating for blackleg in whatever canola system we are growing."

In light of the recent detection of clubroot in north-central Saskatchewan, growers, researchers and industry continue to puzzle over how to manage the soil-borne pathogen. On page 14 we look at the fundamentals of clubroot management and get advice from the experts.

In our **Farmer Panel** on page 11, four farmers weigh in on how they strike an economic balance between fertilizer rates and yield potential. No two growers are alike when comparing fertilizer rates, timing and placement, and their nutrient blend and sources.

In our **Diagnostic Dilemmas** section, a farmer asks why his stand is so thin. He seeded  $\frac{3}{4}$ " deep into moist soil, and the plants that did emerge were vigorous and healthy. There just weren't very many of them. Find out what happened on page 18.

In our **Leveraging Research** section on page 22, we explore a new technology which uses optical sensors mounted on sprayers to make on-the-fly nitrogen application decisions. This fascinating research project involves working with producers who have acquired this commercial system.

Our cover story on page 8 explains why worldwide canola demand continues to grow. Whether you choose to grow classic canola or high oleic, canola is a wise choice because the need for both types of oils is very strong. We talk to some of the companies that are buying and selling the oil.

Finally, Canada's Agriculture Minister, Gerry Ritz, joins me for a quick-fire interview on his top priorities for 2012. Needless to say, he doesn't pull any punches.

All the best in the New Year. ●

Letters and comments are welcome:  
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# DENISE MAURICE – GONE TOO SOON

Canada's agriculture industry lost a passionate, dedicated visionary when Denise Maurice passed away suddenly on November 23, 2011. Denise was vice-president crop production at the Canola Council of Canada (CCC).

During her career, Denise worked across the Prairies in weed research and extension for government, Westco, Viterra and Agricore United. She received many industry awards for her leadership. Denise was at her most comfortable with farmers; they were her inspiration. The quotes that follow are just a small sampling of the messages that poured in from across the industry to the CCC's website in the days following her passing.



"Denise's passing is truly a great loss to the agriculture industry in Western Canada."

"The work that she accomplished, always in a teamwork spirit, with such optimism and conviction, has improved the canola industry."

"Denise, to me you will always be remembered as an icon in the crop protection industry."

*Her ability to help producers improve crop production systems was legendary.*

"Her knowledge of weed control was unsurpassed."

"She could clearly articulate and extend even the most complex agronomic information, and agronomists and producers who attended loved her presentations."

"Whenever I saw Denise speak I would think, 'If she did a presentation on cardboard boxes, people would still be on the edge of their seats!'"

*She had a knack for changing road blocks into stepping stones.*

"Denise was one of the first people I met when I started in this business, and she set the standard for how much one should care about what one does."

"It was a privilege to be part of some amazing initiatives that were accomplished because of her unwavering energy and vision."

"She leaves an extraordinary legacy to Canadian agriculture in general and canola in particular."

"Thank you Denise, you demonstrated what incredible passion can accomplish, you made a difference."

"I can just picture her counselling us to remember the good times and to continue her work towards the good of agriculture, the environment and humanity."

"One in a million."

Canola Digest extends our deepest sympathy to Denise's family. ●





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**D**emand for Canadian canola oil going into 2012 is the highest it has ever been, which is great news for growers. “Whether you choose to grow classic canola or high oleic, canola is a wise choice because the need for both types of oils is very strong,” says Shaunda Durance-Tod, CanolaInfo manager at the Canola Council of Canada (CCC).

Canola oil is the second most widely-used oil in the North American food industry and demand for it continues to grow, notes David Dzisiak, grains and oils commercial leader at Dow AgroSciences. “Canola continues to be important because it meets consumers’ needs and the needs of the food industry. It’s cost-effective, with a great taste and sensory profile.”

Canola oil also provides more healthy fats than any other popular vegetable oil, observes Pat Van Osch. “It has only seven percent saturated fat content, the lowest amongst commonly-used vegetable oils,” says Van Osch, who is the vice president and general manager at Richardson Oilseed Processing.

The quality of canola oil is very important because reducing levels of saturated fat has become a global focus for improving public health, notes Willie Loh, vice president of marketing (oils and shortenings) at Cargill. “The oil of choice for developing foods low in saturated fats is canola.”

# CANOLA DEMAND REACHES NEW HEIGHTS

Food manufacturers are confident in the benefits of canola – both high oleic and classic – to help them develop cost-effective heart-healthy products for consumers.

Canola oil is also heart-healthy in that it contains omega-6 fatty acids, is high in omega-3 fatty acids and is cholesterol and *trans* fat-free. “Canola oil is also very versatile with its high smoke point and neutral flavour,” says Van Osch, noting that sales of Richardson’s Canola Harvest margarine, made from classic canola, continue to be strong. Richardson Oilseed Limited has also developed a number of innovative, non-hydrogenated, *trans* fat-compliant shortenings from classic canola oil, used to make commercial icings, baked goods and doughnuts.

*“Whether you choose to grow classic canola or high oleic, canola is a wise choice because the need for both types of oils is very strong.”*

– Shaunda Durance-Tod

High oleic canola oil offers additional benefits, such as a higher smoke point and longer fry life – attributes valued by the food service industry and food processors. “High oleic varieties like Nexera have greatly expanded canola oil uses,” notes Dzisiak. “It’s twice as stable as classic canola, allowing baked and snack foods to achieve a longer shelf-life.” Dzisiak also points out that because high oleic canola oil doesn’t



Richardson’s Canola Harvest margarine, made from classic canola, continue to be strong sellers.

require hydrogenation to make it stable as some other oils do (a process that creates *trans* fats), it is *trans* fat-free. “This saves time and money in food processing,” he notes. “A great example is the adoption of high oleic canola oil in PepsiCo Canada’s Frito-Lay brand of snack foods.”

Nexera canola replaced mid-oleic sunflower oil in the production of PepsiCo Canada’s Lay’s potato chips in early 2010, and in its corn snack products (*Doritos*, *Tostitos* and *Cheetos*) in early 2011. “This is driving an extensive expansion of high oleic canola acreage, and we could be looking at record acres in 2012,” says Dzisiak.

Steven James, director of strategic sourcing with PepsiCo Foods Canada, says his company has increased its use of omega-9 canola oil because it meets or exceeds all their requirements. Switching oils has been a long and detailed process, with many steps. First among them was to establish the omega-9 oil profile of Nexera and to increase the crop’s yield, ensuring the economics would be attractive to growers.

The next steps involved extensive consumer testing to ensure flavour, texture, freshness, appearance and nutritional profile were preserved.

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## CANOLA DEMAND REACHES NEW HEIGHTS

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PepsiCo Canada then established relationships with processors in an effort to have Nexera integrated into crushing schedules. “We are pleased to be on this successful journey with our partners,” James says. “We remain optimistic about a long-term supply of Nexera oil.”

Cargill, the first to develop high oleic canola oil that maintained low saturated fat with greatly improved stability, developed Clear Valley 65 High Oleic Canola Oil and Clear Valley 75 High Oleic Canola Oil in the early 1990s. Now, they have developed specialty second-generation high oleic canola. “Planting of our herbicide-tolerant VICTORY and InVigor Health hybrid varieties in Western Canada is expected to exceed one million acres this year with the total market for high oleic canola to exceed two million acres,” notes Loh.

*PepsiCo Foods Canada has increased its use of Dow AgroScience’s omega-9 oil because it meets or exceeds all their requirements.*



*Nexera canola oil replaced mid-oleic sunflower oil in the production of PepsiCo Canada’s Lay’s potato chips in early 2010, and in its corn snack products in 2011.*

From these varieties comes Clear Valley 80 High Oleic Canola Oil, which has the highest oleic acid content and stability of any high oleic canola oil. “We have also announced Clear Valley Low Saturate Canola Oil, which reduces the saturated fat content of canola by 35 percent,” notes Loh. “It offers the same high stability and neutral flavour attributes of the rest of the Clear Valley family of high oleic canola oil products, but provides restaurant customers with optimal fry performance and superior nutrition over conventional high oleics.”

In early November, Cargill also announced a joint development agreement with BASF Plant Science to develop canola varieties that will have EPA/DHA fatty acids in the oil. They will be used, says Loh, to develop “products that offer superior cardiovascular benefits to the public.”

It is an exciting time for Canadian canola growers, with increasing markets for oil as well as the potential of markets for canola protein isolates (see sidebar). Building on past successes will continue to lead to more opportunities in the future. PepsiCo Canada’s Steven James says, “Canola is a great Canadian success story.” ●

*Treena Hein is an award-winning science writer and educational resource consultant.*



## CANOLA BEING EYED TO MEET GROWING PROTEIN DEMAND

As the middle class grows in India and many Asian countries, global demand for protein is also growing. Meat, eggs and dairy products are expensive to produce, so companies are actively developing economical plant-based protein alternatives.

Burcon NutraScience Corporation of Vancouver has developed a soy protein isolate called Clarisoy, which ingredient-maker ADM recently signed a global contract to produce and sell. Burcon President and Chief Operations Officer Johann Tergesen notes that canola is another crop being actively investigated for its protein potential. “Canola protein has some exciting technical and nutritional properties,” he says. “It’s very high in cysteine (an amino acid that plays a role in the structure of many proteins), has good emulsification and is non-allergenic. We are using our expertise in developing protein isolates from soybean to investigate canola and other crops.”

BioExx Specialty Proteins Ltd. is now using a solvent-free canola protein isolate production process at its Saskatoon plant. The company says this process is cleaner, more sustainable and is also believed to be more robust and scalable. BioExx food applications specialist Dr. David Balke says it will provide high-solubility concentrates and isolates for the food industry. ●

# NO TWO ARE ALIKE

By Jay Whetter

Every canola grower strives for an economic balance between fertilizer rates and yield potential, factoring in their risk tolerance. But no two growers are alike when comparing fertilizer rates, timing and placement, and their nutrient blend and sources. These four growers demonstrate just how different crop nutrition practices can be.



*Will Runnalls*



*Rob Pettinger*



*Bryan Clair*



*Allan Gajdostik*

## **WILL RUNNALLS**

### **New Liskeard, Ontario**

Will Runnalls farms with his dad, Kevin, about 400 kilometres northwest of Ottawa. Their canola crop nutrition program starts with a dry blend of nitrogen, phosphorus, potassium and sulphur applied at the time of seeding.

Runnalls uses a Model 1850 John Deere disc drill with 7.5" row spacing and a Flexi-Coil 3-tank cart. To modify the unit, they split the metering roll under the two fertilizer tanks, putting fast feeding rolls on one side and slow feeding rolls on the other. While the roll

turns at the same rate along its length, one side feeds three times faster than the other. The fast side feeds hoses for the front row of discs, sending roughly 75 percent of the fertilizer blend and no seed to the front at a 2" depth. Slow feeding rolls feed the back row of discs about 25 percent of the fertilizer blend and all the seed at a ½" depth. The end result is 15" spacing between canola rows, with a low rate of fertilizer in the seed row and a high rate of fertilizer in a mid-row band.

Fertilizer rates at seeding are 50 pounds of actual nitrogen, 30 pounds of phosphorus, 11 to 12 pounds of potassium

and 10 pounds of sulphur. When canola starts to bolt, they top up with broadcast urea at a rate of 10 to 20 pounds of actual nitrogen per acre.

If the crop looks good, they go back during bolting with a liquid solution of boron at a quarter pound per acre plus some extra nitrogen. Boron is commonly applied in southern Ontario to help canola withstand heat stress during flowering. Up at New Liskeard, boron use is not as common, but Runnalls says it seems to help about half the time.

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Runnalls uses soil tests to help with the fertilizer rate decision. Soil types on his farm vary from clay to loam to “muck”. The muck is high peat soil with up to 40 percent organic matter. “Organic matter that high can tie up a lot of nutrients and it doesn’t always provide a firm seedbed,” says Runnalls. Muck tends to be in lower-elevation fields and stays cool longer. For these reasons, clay soils are preferred for early seeded fields and generally perform better than muck soils.

Their canola yields have been constant the past five years and fertilizer rates have stayed about the same. Runnalls grows the latest hybrids and targets 40 to 50 bushels per acre, achieving an average of 46.5 this past season.

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**ROB PETTINGER**

**Elgin, Manitoba**

Rob Pettinger typically applies 100 pounds of actual nitrogen, 40 pounds of phosphorus and 15 to 20 pounds of sulphur on his canola acres, all during seeding.

Including sulphur is just as important as nitrogen, Pettinger says. Soil tests may show good sulphur levels for the areas that were tested, but sulphur can be highly variable across the field, he says. “If we didn’t apply any sulphur, 70 percent of the field might be fine, but 30 percent would give us nothing.”

Pettinger retrofitted his Flexi-Coil 5000 drill, moving the fertilizer hoses off the seed boot and mounting them along the front of the tool bar. By broadcasting urea in this fashion, he can apply high rates of nitrogen during the seeding operation and keep it out of the seed row.

Ammonium phosphate and ammonium sulphate go down the same tube as the seed. The opener is a ¾” knife with 10” row spacing. Even with the low disturbance openers, the broadcast urea prills do get covered, Pettinger says.

Pettinger uses soil tests and last year’s cereal yield to determine fertilizer rates. “We have to put back in what the previous crop takes out,” he says.

Most of his soil is clay loam with three to four percent organic matter and he has been zero tilling for seven to eight years. The key yield limiting factor in his area is usually a shortage of moisture (although not the past two years).

“We have to balance fertilizer rates with realistic yield potential,” he says.

**BRYAN CLAIR**

**Radisson, Saskatchewan**

Bryan Clair has used soil tests to help set fertilizer rates for years. As canola and fertilizer prices have gone up, he soil tests more than ever. However, he doesn’t always adhere to recommendations.

In 2011, his lab report called for

175 pounds per acre of nitrogen to target a 40-bushel canola crop. This super high recommendation was in response to very wet conditions the previous year, which would have reduced soil residual N levels through leaching and denitrification. Clair applied 70 pounds of actual nitrogen to his canola, and his crop yielded 47 bushels per acre.

His farm’s loam or clay loam soils are generally “decent” for phosphorus and sulphur but he always includes these nutrients in his fertilizer mix. For canola, Clair will add 25 to 30 pounds of actual phosphorus and 10 to 20 pounds of sulphur.

His typical canola fertility program is 60-20-0-10. In years that start off with higher moisture, like 2011, he will increase rates somewhat. “Economically, these rates have done better for us than higher rates,” says Clair.

Clair direct seeds, applying all dry formulation fertilizer in one pass. Using a Morris double shoot opener, fertilizer is placed in a trench, with seed on a shelf ¾” higher and about ½” to the side. Steel V-packers ride directly over the fertilizer row, providing pressure to the side of the seed row. “I’m worried about overpacking on canola, especially in moist soils,” he says. “I like this system with more packing pressure over the fertilizer than the seed.”



*In June, Allan Gajdostik discovered the ammonium sulphate in the bottom of his bin cone was like concrete. Ammonium sulphate is hygroscopic – it tends to absorb moisture from the air and can bind prills together. After using an air chisel to cut out the manhole on the bottom cone, Gajdostik hired someone to chip away on the mass with a shovel. Once he had two or three tonnes chipped out, the rest started to flow. The experience taught Gajdostik that ammonium sulphate should be stored on the floor of a concrete shed. “If you plan to put it into a bin with a confined exit point, don’t do it,” he says.*

## ALLAN GAJDOSTIK

Lethbridge, Alberta

Allan Gajdostik applies most of his nitrogen in the fall, his phosphorus during seeding and his sulphur after emergence. He says he applies nitrogen in the fall because, "product is cheaper in the fall, and in the spring, I don't enjoy sitting in fertilizer line-ups when I should be seeding."

At the time of seeding, Gajdostik applies 65 pounds of 11-52-0 in the seed row. With his nitrogen already in place, he can average 40 acres per hour with his John Deere 1890 disc drill. After emergence, he hires the fertilizer retailer to float on ammonium sulphate, targeting to maintain an N:S ratio of 5.5 parts nitrogen to one part sulphur.

In 2011, Gajdostik's reliable system hit a few snags. He lost a lot of his fall

applied nitrogen with the wet spring in southern Alberta. "When you get four to five inches of rain in one event, you've got leaching and denitrification issues," he says. The extent of the loss became evident when he noticed the first true canola leaves were "purple and cupped." He hired his fertilizer dealer to float on another 250 pounds of urea (115 pounds of N) per acre.

Gajdostik also ran into trouble with his sulphur. He had taken delivery of ammonium sulphate the previous fall, but when he opened the bin in June, the bottom couple feet had solidified and it wouldn't flow (see photo). So he had to buy more.

Despite his nitrogen losses in 2011, Gajdostik stuck with the fall application – but he switched to ESN (Environmentally Smart Nitrogen). He banded ESN in late October and

early November with his disc drill at a rate of 300 pounds per acre (132 pounds of actual nitrogen). This may seem like a "jaw dropping rate," he says, but his dryland canola yields justified it. "ESN is terrific for fall application," he says. The polymer coating will limit denitrification and leaching losses in the event of another wet spring, slowly releasing nitrogen through the growing season.

Gajdostik is an "aggressive hedger" so he needs to apply high fertilizer rates to produce the yields he is committed to delivering. He already has 40 bushels per acre pre-priced for delivery in November 2012 and March 2013, so he needs to make sure the production is there. If it seems like some of his fertilizer has been lost, as happened in the spring of 2011, he won't hesitate to top up. ●

*Jay Whetter is communications manager with the Canola Council of Canada.*

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# CLUBROOT CONUNDRUM

By Bruce Barker

Lots of questions still left to answer.

14 In light of the recent detection of clubroot in north-central Saskatchewan, growers, researchers and industry continue to puzzle over how to manage the soil-borne pathogen.

In accordance with the Saskatchewan Pest Control Act, access to the locations where the disease was found is being restricted. Cargill, whose disease nurseries were the location of the pathogen, is working with the Saskatchewan Ministry of Agriculture, SaskCanola, Canola Council of Canada (CCC), local municipalities and adjacent landowners to help manage the potential spread of the disease.

“How clubroot arrived at those two sites is still a mystery,” says Clint Jurke, CCC agronomy specialist for western Saskatchewan. “It is hard to know if the pathogen was there in the soil already or how long it has been there. There is still a lot of work to do to understand the disease.”

The discovery highlights how important it is for farmers and industry to remain vigilant in managing the disease. Dr. Stephen Strelkov, a University of Alberta associate professor and clubroot research expert has been tracking the disease in Alberta. “There were many new cases detected in Alberta this year, but I think because of some of the tools out there, like the resistant varieties,



*At first glance, a grower might think the poor growth in this low spot was the result of excess moisture. On close inspection, it turned out to be clubroot.*

people are not as paranoid of the disease as they once were,” says Strelkov.

Alberta and Saskatchewan both have clubroot management plans, and declare clubroot as a pest under their provincial Pest Acts. Key to the management plan is scouting for detection, sanitizing equipment, planting clubroot resistant varieties in areas where the disease is established, and using a four-year canola rotation to reduce the loss of this resistance. In practice, canola growers are using a combination of these approaches. It is also understood that using a tight rotation of susceptible canola varieties increases the risk for more disease development if the pathogen is found in a field.

## LONG ROTATIONS

Bon Accord in Sturgeon County, northwest of Edmonton, is ground zero for the first detections of clubroot in 2003. Area canola grower Murray Mulligan has been dealing with the threat of clubroot by maintaining his standard rotation of canola-cereal-pulse-cereal. He had clubroot detected on two of his fields, but at low levels that aren’t causing economic loss.

*“The earlier you can catch the disease, the sooner you can isolate it so it doesn’t infect the rest of the farm.”*

– Clint Jurke

“On the two parcels where clubroot has been confirmed, I haven’t seen any significant effect. I feel that as long as I stay with the extended rotation, I don’t see that I will have a problem,” explains Mulligan.

Mulligan has continued to grow his standard canola varieties that are susceptible to clubroot because the infestation level is low. He is satisfied with the performance of these varieties, but has been watching the performance of the resistant lines. He doesn’t plan on growing any of the resistant varieties in 2012, but will reassess them each year.

Jason Devolder takes a different approach to rotations at his Morinville, Alberta farm. He generally has alfalfa for four to five years, followed by a canola-oat-wheat-canola (underseeded to alfalfa) rotation. Sometimes he has a canola-cereal-canola rotation between alfalfa stands. While that rotation is tighter than one-in-four, he still only has canola in the rotation two or three years out of 10. “I never took a direct approach to managing clubroot. I think the rotation I have with alfalfa has helped manage the disease,” says Devolder.

### SCOUTING FOR EARLY DETECTION

Both Mulligan and Devolder continue to scout for the disease. Mulligan has only found a few infected plants in the one field where the County detected clubroot. While Devolder hasn’t found any clubroot infected canola plants, he realizes that clubroot is likely present. “I’ve pulled thousands of plants and never found a canola plant with galls,” says Devolder. “Having said that, I’m not naïve – it has to be here, I just haven’t seen it.”

Jurke says that scouting is important for early detection of the disease. Early detection allows growers to adopt management practices to help limit severity and spread, so clubroot doesn’t become economically significant.

“The earlier you can catch the disease, the sooner you can isolate it so it doesn’t infect the rest of the farm,” says Jurke.

*Just making time to knock dirt clumps off the equipment will help reduce the risk of moving spores throughout the field by more than 90 percent.*

He says a good place to scout is at field entrances where equipment will typically first contact the soil, and to the right, since most farmers turn right when they enter.

### EQUIPMENT SANITATION DIFFICULT

Clubroot spores can be spread with soil from an infested field, and clubroot management plans call for equipment sanitation to help limit the spread. Devolder and Mulligan try to clean as much dirt off their equipment as possible, but time pressures can trump sanitation.

Mulligan tries to knock off most of the soil clumps when moving between fields. “I make sure to get the worst off. This year it was muddy at spraying so we had difficulty with cleaning equipment. We are relying on crop rotation to try to prevent the spread of the disease.”

Jurke agrees that going to the full extent of washing and disinfecting equipment is time consuming and difficult. He says just making time to knock dirt clumps off the equipment will help reduce the risk of moving spores throughout the field by more than 90 percent.



*Comparing the healthy plant on the left to the infected plant on the right shows how severe clubroot can stunt growth.*



*Severe clubroot galls overwhelm the root system.*

“The industry realizes that asking farmers to pressure wash and bleach equipment between fields isn’t practical. We’re trying to repackage that message to basic sanitation between infected fields,” says Jurke. “This needs to be based on risk. Bleaching should be done for growers who do not have this disease and want to prevent it from arriving on their or another’s equipment. Pressure washing is a good idea for many biosanitary purposes and can be done once each season.”

Researchers are still looking into many aspects of clubroot, including how it spreads, resistance mechanisms and pathology. Many of the projects are funded through the collaborative study – Clubroot Risk Mitigation Initiative (CRMI). It is funded mainly by the federal government’s Growing Forward program at a cost of nearly \$4 million. Grower checkoff funds are also providing research support. Like most diseases, a magic bullet isn’t likely to be found. Rather, all stakeholders are going to have to remain vigilant.

“I don’t have the perfect answer, but I do what makes sense on my farm to try to make a dollar and prevent the spread of the disease,” says Devolder. ●

*Bruce Barker is a freelance writer who specializes in agricultural production, located in Bragg Creek, Alberta.*

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# DIAGNOSTIC DILEMMAS

By Jay Whetter

The first rule in agronomy: don't jump to conclusions. Making assumptions based on "Oh, I've seen that before," can lead to costly and ineffective actions because several causes can produce similar symptoms in plants. Here are some tips to help you approach puzzling agronomy cases, using a few real-life examples from 2011.

# W

hen canola crops are showing obvious signs of stress, growers often call a Canola Council of Canada (CCC) agronomist. Agronomists run through a checklist with the grower to determine the probable cause. Then they scan the whole field for patterns, and scout closely above and below ground.

In some cases, the cause or causes of a problem cannot be determined for certain. Fortunately, in many cases, careful diagnostic reasoning can narrow the possibilities down to a single cause that can be addressed. Here are few such scenarios from 2011.

## CALIBRATE SEEDING RATE BASED ON SEED SIZE

**Problem:** A grower calls to ask why his stand is so thin. He seeded  $\frac{3}{4}$ " deep into moist soil, and the plants that did emerge were vigorous and healthy. There just weren't very many of them.

**Action:** The agronomist found nothing suspicious with the previous crop sequence, herbicide history or fertilizer practice. But when the agronomist started asking about seeding rates, the

*The combination of lower seeding rates and larger seed size can lead to disappointing plant populations and a significant drop in yield potential.*

root of the problem became clear. Quite simply, the grower didn't put enough seed in the ground. In setting his seeding rate, the grower needed to account for the large seed size of his hybrid variety, then set a target plant stand and calibrate the drill to hit that target.

Hybrid seed often weighs five grams or more per 1,000 seeds. A five-gram hybrid seeded at four pounds per acre works out to eight seeds per square foot. At 60 percent seedling survival, which is at the high end for average conditions, those eight seeds only produce five plants per square foot. At rates below four pounds per acre, the plant stand drops

accordingly. The combination of lower seeding rates and larger seed size can lead to disappointing plant populations and a significant drop in yield potential.

Stands of fewer than five plants per square foot can still produce reasonable yields under ideal conditions. But these stands are much more vulnerable to stresses that limit canola plants' ability to compensate through increased branching and pod production. There is no buffer against further plant losses due to weather, diseases and insects. Also, hybrids may not be able to take up all the nutrients available to the crop unless they have a minimum of five

*The ideal canola stand has seven to 14 plants per square foot. Growers are unlikely to achieve this plant population when seeding large seed at a low seeding rate.*



plants per square foot. Finally, a dense canopy that provides early-season ground cover also reduces weed pressure. Agriculture and Agri-Food Canada research found that a crop that fills in quickly often does not need a second herbicide application.

Canola that does successfully branch out to compensate for a thin stand will mature later, which increases the risk of yield loss and high green counts due to fall frost. In a three-year CCC trial reported in 2002, canola seeded at one pound per acre yielded 16 to 19 percent less and matured three to five days later than canola seeded at five pounds per acre, on average. In most cases, the lower seeding rate never achieved complete ground cover, which means the plant population simply wasn't high enough to take advantage of the resources available.

The ideal plant stand for canola to reach its yield and quality potential is seven to 14 plants per square foot. With a combination of larger seed size and lower seeding rates, many canola fields will not hit this target.

### NOT ENOUGH SULPHUR

**Problem:** A canola crop didn't produce the number of pods or seeds per pod the grower expected considering the amount of vegetative growth. The grower said the crop looked beautiful up until podding, when it "ran out of steam." He also mentioned the crop took a long time to go into flower, and then flowered for a very long time. In the end, the field yielded about 15 bushels less than anticipated and was the last to be harvested.

**Action:** After asking several questions, inspecting the field and obtaining field history records, the CCC agronomist determined that sulphur management was the likely culprit. The symptoms and field management practices pointed to sulphur deficiency.

The field was soil sampled to 12" and the available sulphur averaged 15 pounds per acre. The grower was advised to apply eight pounds per acre of sulphur. This may have been sufficient, except that:



*Soil sulphur reserves are often highly variable across a field. Even if a soil test shows adequate sulphur, an application of at least 10 pounds per acre will help to manage this variability and can improve overall yield results. (Inset: Pale yellow flowers are a possible indicator of sulphur deficiency, as shown in the flowers on the right.)*



1) Soil sampling for sulphur is difficult and unreliable. Sulphur is very mobile in the soil and pockets of high sulphur can lead to misleading high readings in composite samples. Generally, when a soil sample comes back low in sulphur, the field is definitely low. If the sample comes back medium or even high in sulphur, growers should still apply sulphur to canola fields (unless the grower used very extensive grid sampling techniques).

2) The grower applied the eight pounds per acre in the form of elemental sulphur at the time of seeding.

*If growers suspect sulphur deficiency, an in-crop top up with ammonium sulphate can correct the problem.*

In this case the grower overlooked some of the 4 Rs of nutrient management: right time, right place, right source, right amount. The following steps could have improved his canola yield, maturity and quality.

**Time.** Elemental sulphur requires time to oxidize and become available (convert to sulphate form) for plant uptake. Using elemental sulphur at seeding time isn't recommended. Applying elemental sulphur the year before canola is one strategy to make

sure a large portion is available when the canola crop needs it.

**Place.** If a grower does apply elemental sulphur at seeding, it should be broadcast on the soil surface to maximize the surface area exposed to weathering, speeding the rate of conversion to sulphate.

**Source.** In this situation, ammonium sulphate (or other sulphate forms of sulphur) would have been preferred.

**Amount.** The eight pounds per acre applied was probably not enough to meet this crop's yield potential. Canola requires 0.6 to 0.8 pounds of sulphur per bushel, so a 50-bushel crop requires 30 to 40 pounds of sulphur. Because soil sulphur content can be widely variable across a field, sulphur fertilizer rates for canola should be at least 10 pounds per acre in sulphate form even when soil tests show adequate levels. Growers may want to bump those rates to 20 pounds per acre in areas with high yield potential.

If growers suspect sulphur deficiency, an in-crop top up with ammonium sulphate can correct the problem. Sulphur top ups should be applied before first flower and the earlier the better. ●

*Jay Whetter is communications manager with the Canola Council of Canada.*



# TAKING STOCK OF SOIL NUTRIENTS

By Carla Pouteau

The variability of last year's growing conditions is another good reason to soil test and be better equipped to calculate canola's nutrient requirements.

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The growing season in 2011 was anything but normal in many areas of Western Canada. Record rainfall early in the growing season was followed by a record dry period in some areas. Other areas never did see the end of the wet cycle. Many soil fertility experts recommend that this is a good year to start soil testing and take stock of soil nutrient levels.

"Soil tests are valuable tools," says Dan Orchard, Canola Council of Canada's (CCC) agronomy specialist based in Wetaskiwin. "Every three to four years a comprehensive soil analysis should be done to monitor parameters that do not change very much, such as pH, cation exchange capacity or organic matter. But a nutrient analysis should be conducted annually," adds Orchard. This is especially true after a growing season such as last year that has resulted in varying nitrogen levels across the Prairies.

"From what we are seeing and hearing from soil tests, the cupboard is bare," says John Heard, crop nutrition



*Soils can still be sampled during the winter, as long as the probe can still get down 24".*

extension specialist with Manitoba Agriculture, Food and Rural Initiatives. Orchard says the situation is similar in his part of Alberta, where soil nitrogen levels are low.

Rigas Karamanos, manager of agronomy solutions with Viterro has seen variable soil test nitrogen levels across Western Canada, and describes them as "all over the map". Crop yields were variable, so it is not surprising that nutrient levels would be also. A number of factors are contributing to the variability, such as: differing mineralization rates on fields that were too wet to seed and were summerfallowed with one to four

tillage passes; relatively high yields in parts of Manitoba and Alberta; and the flash effect of microbial activity (mineralization) that happens when a wet period is followed by a prolonged dry period then another wet period.

## SOIL TESTING CONSIDERATIONS

Although most soil testing happens in the fall, there is still time to take a sample before spring. Soil sampling probes can punch through frost and take samples throughout the winter. "As long as snow depth does not prevent travelling in the field, samples can be taken," says Orchard.

“A comprehensive soil test contains lots of information and growers should make sure that whoever is looking at the results is using all the information to help make decisions,” Orchard says. Soil test results are only as good as the sample taken, so it is important to see the land while sampling. If the field is snow covered, then it is important that the individual doing the sampling knows the field.

*“From what we are seeing and hearing from soil tests, the cupboard is bare.”*

– John Heard

“This might mean that the grower needs to ride along in the sampling truck to ensure a representative sample is taken,” says Orchard. This will allow growers to see the sample cores and be able to help determine if the sample is indeed representative of the entire field. It is also important to sample to the right depth for the right nutrients.

Karamanos has compared the soil test results of samples collected in the same location in the fall and the following spring. “If we found more than 40 pounds of residual soil nitrogen per acre in the fall, then there was a slight incremental increase in the nitrogen we found in the spring – likely due to late season or early spring mineralization,” explains Karamanos.

However, if there was less than 40 pounds per acre of residual nitrogen, the soil tests in spring and fall did not differ. Growers can have confidence in the results whether they sample in the fall, winter or spring, provided soil temperatures are cool.

Should a field be soil tested differently due to last year’s variability? For instance, if 40 acres on a quarter section were drowned out, should two different samples be taken? “It can be valuable to sample those two areas differently because the drowned out area may or may not have had significant denitrification,” says Karamanos. “But don’t sample

## **NITROGEN – SHOULD ALL THE EGGS BE PUT IN ONE BASKET?**

In light of what happened last year, there may be some growers who are contemplating split applications of nitrogen. Meaning that a portion is applied before or at seeding, and then, depending on the growing season (and yield potential) additional nitrogen may or may not be top-dressed.

“Growers have a couple of options,” says Orchard. If dry conditions prevail in some areas, growers may look to put on 50 to 60 percent of the nitrogen requirements at or before seeding. Then if conditions improve, and yield potential looks good, additional nitrogen can be added later. Another option is to apply all of the nitrogen requirements at or before seeding. If the crop is looking good (for instance, yield targets move from 50 to 60 bushels per acre) additional nitrogen can then be added to capitalize on the opportunity.

“Growers need to recognize there is risk to withholding nitrogen,” says Heard. The price of nitrogen may be higher at top-dress time, they need to budget for another application pass and some crop trampling, and rainfall is necessary following application otherwise the fertilizer will remain dry-stranded at the surface.

Research by Karamanos has shown that canola’s hunger for nitrogen is significant at the five- to six-leaf stage. “Research we did in Manitoba showed that a 40 bushel per acre hybrid canola crop at the six-leaf stage was using five to eight pounds of nitrogen per acre per day,” says Karamanos. If growers choose to split apply, it is important to recognize that demand for nitrogen and ensure the supply is available.

Orchard recommends growers scout often and try to top-dress as soon as possible. “A grower can go as late as the six-leaf stage but should likely ensure it is there at the four- to five-leaf stage,” he says. “If you see deficiency symptoms with the naked eye, it is too late. There is already lost yield potential at that point.”

See “Optimizing Nitrogen” on page 22 to learn how optical sensing technology can help with nitrogen top-dress decision-making. ●

*“A general rule of thumb is that canola needs three to three and a half pounds of nitrogen per bushel.”*

– Dan Orchard

the areas differently unless you’re prepared to fertilize them differently.”

If a grower is not equipped to vary rates of fertilizer application, or if the size of the equipment limits his or her ability to manipulate rates in a smaller area, then there is not much point in sampling areas separately.

### **NITROGEN CALCULATIONS**

If soil nutrient levels are determined with a soil test, a grower is better equipped to calculate nutrient requirements for the crop. A 2009 CCC survey of canola growers found that those achieving the top 40 percent of yields

were applying 24 percent more nitrogen, 17 percent more phosphorous, and 32 percent more sulphur than those growers whose canola was yielding in the bottom 40 percent.

“A general rule of thumb is that canola needs three to three and a half pounds of nitrogen per bushel,” says Orchard. “So a 50-bushel canola crop will need access to about 150 pounds of nitrogen from residual in the soil, plus additions from mineralization throughout the growing season and from fertilizer nitrogen applied.”

continued on page 24



# OPTIMIZING NITROGEN

By Crystal Klippenstein

Using optical sensors to make on-the-fly nitrogen application decisions can enhance efficiency and profitability.

22 ● ● ● Producers surveys show that 72 percent of growers apply the same fertilizer blend to all of their canola fields. Because fertilizer tends to rank at the top in terms of input costs for canola, enhancing a grower's ability to use it efficiently – at the correct amount, rate and time – can play an important role in advancing profitability.

Guy Lafond, a production systems agronomist and researcher with Agriculture and Agri-Food Canada (AAFC) in Indian Head, Saskatchewan is wrapping up year two of a three-year research project on variable rate application of nitrogen using optical sensors for on-farm field trials. The project is funded through the Canola/Flax Canadian Agri-Science Cluster Initiative which is a partnership between the Canola Council of Canada (CCC) and AAFC.

Lafond and his team are working with producers who have acquired a commercial system consisting of six optical sensors mounted on the front of the boom of their sprayer. The sensors emit light in two specific wavelengths onto a crop canopy and measure the reflectance, which in turn provides them with a normalized difference vegetation index (NDVI) for that area of the field. NDVI, which has been around since the early 1970s, is correlated to biomass: the more biomass, the higher the index.

The new aspect of this work is the relationship between NDVI divided by growing degree days and final grain yield, which Lafond and others have adapted to the prairie conditions and for different crops. These relationships allow them to calculate yield potential for the crop for the various areas of the field.

To use this system, a grower sets up a non-nitrogen limiting strip, also known as the N-rich strip, in their field. On this strip, they apply 1.5 times their target nitrogen rate before, during or after seeding, to ensure the strip is not limited for nitrogen. For the remaining field, they could apply a percentage of their target nitrogen rate, suggested to be about 50 to 66 percent.

At the mid-bolting stage to start of flowering (approximately 10 percent), they sweep the N-rich strip and the area beside it with their sprayer mounted sensors. The sensors will do hundreds of measurements, depending on the length of the strip, to establish the upper limit for NDVI and potential yield for the N-rich strip and the area adjacent. From the numbers generated, the grower would then sweep the entire field with their sprayer, measuring NDVI as they move. The sprayer would top-up nitrogen on the fly based on the calculated yield potential. Lafond estimates the yield calculations to be within 10 to 15 percent of final grain yield.

*Lee Moats and Grant Fulton use the GreenSeeker™ brand technology for optical sensing on their farms.*





*“The benefit of using this type of system is that it doesn’t have to be a stand-alone tool.”*

– Dan Orchard

**Applying desiccants** only to the areas of the field that warrant it.

**Mapping fields.** Taking the information used to create management zones in a field and bypassing the costs of acquiring satellite imagery and post processing.

“A nice feature with optical sensors is that they account for both spatial and temporal changes and address them on the spot,” says CCC agronomy specialist Dan Orchard. “The benefit of using this type of system is that it doesn’t have to be a stand-alone tool – a grower could use it in conjunction with other precision farming methods and tools such as mapping or variable rate fungicides and herbicides.”

Grant Fulton, who crops 2,800 acres outside of Shelbrook, Saskatchewan, has been using the system for three years. His decision to purchase the sensor optics, which cost just under \$20,000, came when he was looking at variable rate technology and the costs involved in obtaining satellite prescriptions for field zones for application.

“The costs of one prescription were just about equal to purchasing this unit which we’ll be able use for many years,” says Fulton. “It just seemed to be the most economical and timely measure of plant growth and allowed us to move beyond relying on the data from past crops.”

Fulton adds that the largest standing benefit he’s experienced has been to the environment, as it’s enabled him to reduce his nitrogen application rates. Another significant observation is how even his crops have been since he began using sensor optics to vary nitrogen application rates within his fields.

Lee Moats runs a 2,660 acre farm outside of Riceton, Saskatchewan, and was another early adopter of sensor technology. Moats says the

“We’re trying to allocate the nitrogen in a more efficient way,” says Lafond. “We may not save a lot on total fertilizer use but we are trying to refine the growers’ ability to arrive at a more optimal rate of nitrogen across their field.”

Lafond has already come up with other practical applications and potential advancements for this technology:

**Risk Management.** Applying only 50 to 66 percent of fertilizer on a field and then topping it up during the growing season as needed according to the developed application algorithms.

**Yield Potential.** Applying all fertilizer for a target yield, then going over the N-rich strip with the sensors and having the machine determine whether there is potential for increased yield. From this, a grower can decide whether the

field as a whole would benefit from additional fertilizer.

**Yield for Marketing.** Using measurements taken at the start of flowering in canola at representative areas of the field, growers would have the ability to make a close estimate of their final grain yield to assist them in future crop management decisions.

**Variable rate fungicide.** Use current grain prices, cost of fungicide and application, and expected yield increase from the fungicide to determine the minimum yield threshold required to generate a positive return. Then, travelling the field with sensors, the sprayer turns off when sensor readings fall below the established yield threshold, based on the yield prediction equation.

**Nitrogen fertilizer management** on well-manured land.

*“We may not save a lot on total fertilizer use but we are trying to refine the growers’ ability to arrive at a more optimal rate of nitrogen across their field.”*

– Guy Lafond



A nitrogen calculator developed by Karamanos and Viterra to help determine fertilizer requirements can be found at [www.gov.mb.ca/agriculture/financial/farm/nitrogencalc.html](http://www.gov.mb.ca/agriculture/financial/farm/nitrogencalc.html). The calculator can be used to evaluate different net return per acre scenarios involving nitrogen source and cost, the expected crop price and soil nitrogen.

Nitrogen rate guidelines for canola have been adjusted since the introduction of canola hybrids, which require more nitrogen than open pollinated varieties (see accompanying graph). “Canola hybrids can take advantage of higher nitrogen rates than open pollinated varieties, resulting in higher yield targets,” explains Orchard. “It’s the whole package from a hybrid that benefits growers – greater yield potential, weed control/competition, early season growth, etc.”

As a result, nitrogen response curves with hybrid canola now use an average yield of 50 bushels per acre which is

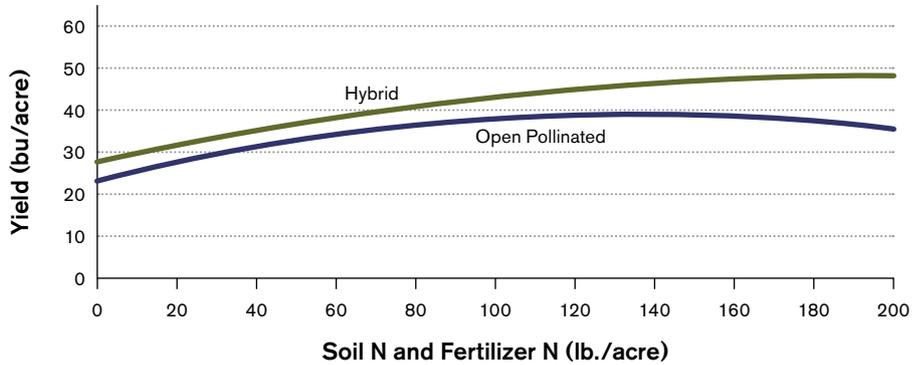
about 10 bushels higher than response curves for open pollinated varieties.

The synergy between adequate fertility and hybrid yield potential are important factors to help the CCC achieve its goal of reaching 15 million metric tonnes of production by 2015. “That is quite attainable,” says

Karamanos, who believes we have not yet realized the genetic potential of canola. “Research plots are achieving yields of 95 to 100 bushels per acre with 200 pounds of nitrogen per acre and the economics are not bad.” ●

*Carla Pouteau is a freelance writer and farms near Mariapolis, Manitoba.*

**Canola Response to Nitrogen**



Hybrid varieties can take advantage of higher nitrogen rates, resulting in higher yield targets.

Source: Karamanos 2002

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learning curve required to adopt this technology before it was mainstream was a challenge. But that was outweighed by his reasons for purchasing the sensors. “As an overall attitude, we’ve been trying to locate efficiencies in our farm operation and ways of making ourselves more environmentally-friendly and those came together with this technology,” he says.

*“With this system, it’s about only putting on what you need and figuring that out at the time you need it.”*

– Lee Moats

Moats adds that the biggest challenge for him has been the logistics of managing time for himself (because an additional application routine is needed). He also finds it challenging to manage the use of his sprayer, particularly when

spraying spring crops overlaps with applying nitrogen to winter wheat.

Though Moats doesn’t believe the system has enabled him to increase yield, he says it has allowed him to maintain yield with a substantially reduced amount of nitrogen. In 2009, he had an incredibly successful year with canola yielding 63 bushels per acre with an average of 64 lbs of N applied – about two-thirds of his normal rate. “We always preach that you have to spend money to make money, but with this system, it’s about only putting on what you need and figuring that out at the time you need it,” he says.

“We have essentially paid for the technology over the three years we’ve had it,” he says. “And, we cut down our environmental impact by reducing the amount of nitrogen applied.” ●

*Crystal Klippenstein is communications coordinator with the Canola Council of Canada.*

## **FURTHERING INNOVATION IN CROP NUTRITION**

In addition to Lafond’s research on variable rate application, there are three other research projects undertaken through the Canola/Flax Canadian Agri-Science Cluster Initiative focused on canola crop nutrition:

- Improving nutrient management by assessing the safety and effectiveness of seed-placed nitrogen, phosphorous and sulphur.
- Determining best application rates, timings and formulations of phosphorus fertilizer for high quality canola oil production.
- Determining fertilization and crop production practices that would reduce greenhouse gas emissions while simultaneously attaining canola with high yield and quality ●

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# BLACKLEG MANAGEMENT

By Donna Fleury

Research helps growers manage risk.

26 **G**rowers have benefited from the introduction of many blackleg resistant cultivars and other management tools over the past several years. However, researchers have isolated new races of the fungus that are overcoming resistance of the cultivars.

Combined with the high canola returns that have encouraged a shortening of canola rotations, this is increasing the risk of the disease overcoming resistance. New research efforts are underway to help address this challenge and to help growers reduce their risks.

“One of the most important strategies is going to be management and stewardship of specific gene resistance,” says Clint Jurke, Canola Council of Canada (CCC) agronomy specialist. “We know that resistance genes are not infallible and they do break down. New races have been isolated that are overcoming resistance in Australia, Europe and Canada, and therefore the stewardship of blackleg resistance and agronomic practices designed to control blackleg must be managed together.”

Industry is focusing on blackleg management in terms of risk assessment and risk management. Growers should assess the risk of the various blackleg management practices they plan to use in their canola cropping system and select appropriate strategies depending

*“One of the most important strategies is going to be management and stewardship of specific gene resistance.”*

– *Clint Jurke*

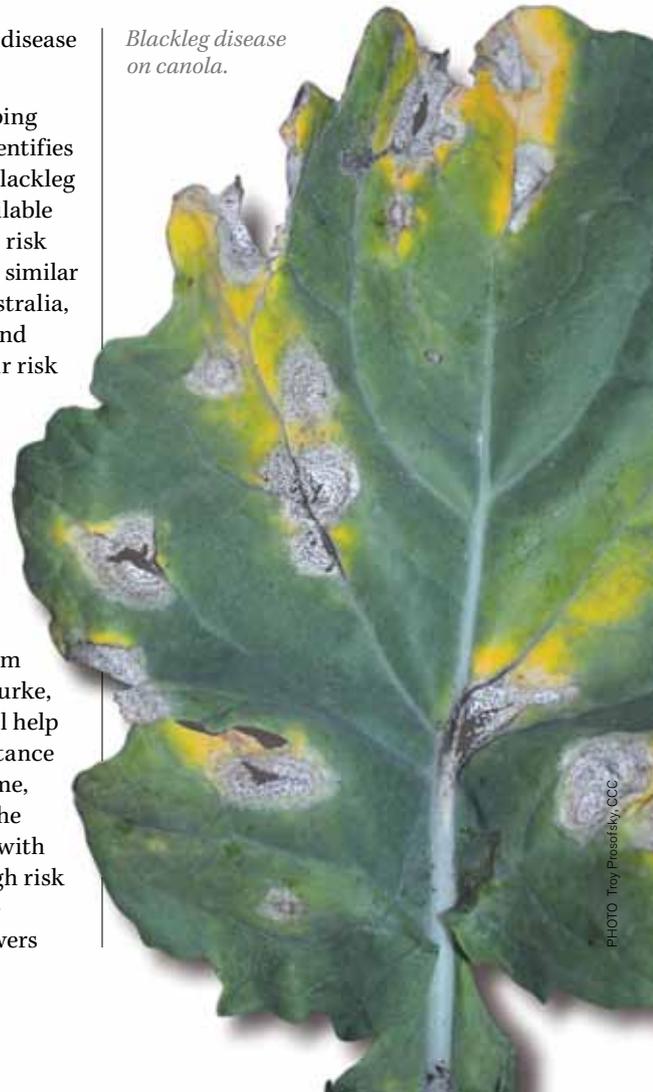
if they are at a high or low risk of disease pressure, says Jurke.

“We are in the process of developing a risk assessment matrix that identifies high and low risk practices for blackleg management, which will be available in spring 2012,” Jurke says. “The risk assessment matrix, which will be similar to one recently developed in Australia, helps growers assess their risk and choose practices to manage their risk potential accordingly.”

Another CCC research project launched recently will help growers with cultivar and resistance selection.

“Researchers will be identifying and labeling the different resistance genes in current canola cultivars and placing them in resistance groups,” explains Jurke, noting that this information will help growers more easily rotate resistance and reduce risk. “In the meantime, what we do know is that using the same variety in a tight rotation with the same resistance gene is a high risk behavior. So until we have those resistance genes identified, growers

*Blackleg disease on canola.*



should not use the same variety in a tight rotation if the disease is present.”

The major source of widespread heavy field infection that causes high yield loss is the spores produced from diseased stubble, especially infected root pieces. Stem infections eventually progress internally down into the taproot of the canola plant. Canola stubble, especially larger root pieces, can take two to three years to break down and up to five years during a series of dry seasons. As a rule, practices such as cultivation or conventional tillage or even burning do not get rid of the canola residue.

### SCOUTING FOR BLACKLEG

“Growers should be scouting and checking canola residue early in the spring to see if the blackleg pathogen is present, but this can be difficult to identify,” says Jurke. “More importantly, scouting at swathing will help assess the amount of blackleg infection in the crop and how that affects rotation decisions.” For example, if there is evidence of a lot of blackleg infection, a grower should consider going to a longer rotation, using a different resistance variety and using a blackleg fungicide.

The ideal time for scouting for blackleg is at swathing time, when basal cankers are easy to see. Take clippers to the field, pull the roots of a few plants out of the ground and look for blackened tissue inside the crown of the stem. The amount of infection present will help identify the level of risk and the best management practices for that field.

*“There is a lot of blackleg around with the short rotations, so it is going to be a problem.”*

– Dan Hacault

Dan Hacault farms about 2,000 acres at Swan Lake, Manitoba and grows wheat and canola in rotation. “For growers in southern Manitoba, outside of the major corn, soybean or special crops areas, shorter rotations of cereals and canola are becoming more common,” says Hacault. “There is a lot of blackleg

*The level of blackleg disease in the stem is rated from 0 to 5, with 0 showing no disease and 5 being a dead plant.*



*Cut stem with a disease level of 0 or no disease.*

*Cut stem with a disease level of 2.*

*Cut stem with a disease level of 5, plant completely diseased and dead.*

around with the short rotations, so it is going to be a problem. We try to select the varieties with the highest resistance rating for blackleg in whatever canola system we are growing. It is probably prudent to select a couple of different varieties to spread out your risk.”

Hacault and his agronomist scout for early onset of blackleg and again at swathing. “We have also started using fungicides for blackleg control and we think we are seeing some benefit,” he says.

Hacault notes it is still a bit of a guessing game when selecting resistant varieties because the ratings currently don’t provide information on which blackleg pathogen races the varieties are resistant to. He looks forward to the availability of additional research information on resistance ratings and rotating resistance.

*Blackleg lesion on the canola stem.*



*When scouting, also look for blackleg pseudothecia (black spots) on old canola residue, which may still be present in fields with a tight rotation.*

Grower-funded blackleg research continues to help researchers identify new resistance genes, improve resistance durability, improve fungicide strategies and recommend new management practices. “We continue to work with researchers and industry from across Canada and other jurisdictions like Australia, who have come up with some great ways to manage blackleg,” says Jurke. “There are things for Canada to learn from the Australians and others in successful blackleg management.” ●

*Donna Fleury, P.Ag., is a freelance writer from Millarville, Alberta, specializing in agriculture and the environment.*

continued on page 28



## MANAGING BLACKLEG IN AUSTRALIA: WHAT CAN CANADA LEARN FROM THEIR EXPERIENCE?

Blackleg is also a major disease of canola for Australian growers. With their longer growing season of about six months, the disease pressure is different than in Western Canada. It can build up to far greater levels.

Researchers in Australia have recently developed isolates of the blackleg pathogen from farm fields. This has allowed them to characterize the resistance genes in 143 canola cultivars. "Now that we know the differences in cultivar resistance, we have been able to show that we can really reduce the levels of the disease by rotating fields and rotating resistance genes in different cultivars," explains Dr. Angela Van de Wouw from the University of Melbourne's School of Botany.

Van de Wouw recently met with researchers and industry in Western Canada to discuss research and management strategies. "The next step is to put all of the cultivars into different groups so that farmers are able to select and rotate cultivars with different resistance," she says, noting this should be available by the end of 2012. Canadian researchers are following suit and are working on characterizing Canadian canola cultivars for differences in resistance.

Australian growers also have access to a new Blackleg Risk Assessor Factsheet, which outlines the various factors that can

increase the risk of blackleg, including environmental factors. In Canada, Jurke and others are working on developing a similar tool for Canadian growers.

Van de Wouw has also been involved in the sequencing of the genome of the fungus that causes blackleg disease. Using this information, she has developed molecular markers for three of the genes in the fungus responsible for the disease. "We can use these markers to assess the fungal population and determine whether cultivars with specific resistance genes are at risk of high levels of disease," Van de Wouw says. "As part of this new project, farmers can send a sample of their trash and we are able to identify the fungal isolates and provide information on which group they should rotate to."

Similar to Canada, Australia funds canola and other grains research through the Grains Research and Development Corporation, which collects farmer based levies that are matched by government funds. "There is a big emphasis on farmer outputs from the research," says Van de Wouw. "I work closely with pathologist Steve Marcroft, and researchers in each of the major canola growing states on conducting various research trials and collecting data that helps our farmers improve blackleg management and other production strategies." ●

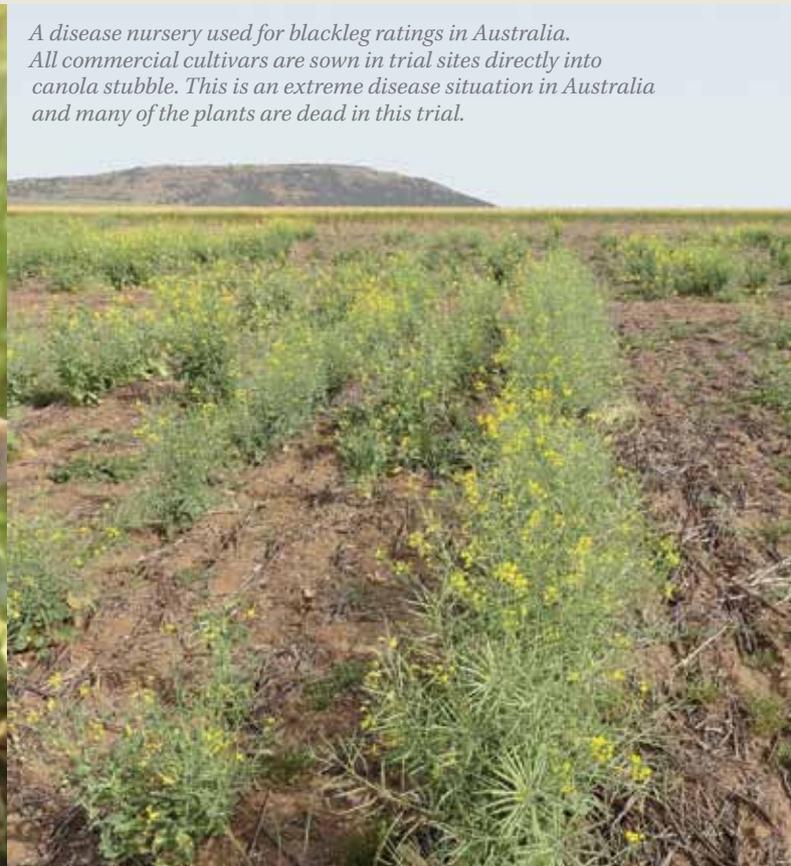
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*Assessment of trial sites in Australia. The stems are cut to determine the percentage of the crown that is blackened due to blackleg.*



*A disease nursery used for blackleg ratings in Australia. All commercial cultivars are sown in trial sites directly into canola stubble. This is an extreme disease situation in Australia and many of the plants are dead in this trial.*



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# RITZ AT WARP SPEED

By Debbie Belanger

Canada's Agriculture Minister Gerry Ritz is quick with the sound bites: "Grease the wheels of innovation." "Trade rules that foster not frustrate." He gets to the point in a hurry, often answering your question when you've barely finished asking it. Recently he joined *Canola Digest* editor Debbie Belanger for a fast-paced look at the year that was, and the year ahead.

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**Debbie Belanger: Looking back on 2011, what do you see as the highlight in Canadian agriculture?**

**Gerry Ritz:** I think one of the highlights was the amazing ability of Western Canadian farmers to adapt to climate situations. We were hit again with flooding in Manitoba and Saskatchewan but I tell you it's just amazing to see farmers step up and find innovative ways to make machinery work on muddy ground – they're a tremendously adaptable group.

**DB: And canola...**

**GR:** Well, it was amazing to me. You know we spent years developing drought resistant canola but even those stronger traits served well in some of the flood area – the edges around sloughs. That's something we weren't expecting.

**DB: And the challenges or downside of 2011?**

**GR:** The challenge will be to move this crop. There is a growing demand out there in the world. The challenge will

be how deep this recession goes and whether some of our traditional markets will still be able to buy and pay for what they are ordering. We still try to diversify our portfolio in trade as much as we possibly can, moving away from the Americans being our largest buyer to one of our many buyers.

**DB: There has been a lot of talk about South Korea and the importance of resuming negotiations in order to maintain market access.**

**GR:** We have had talks going on for a number of years. Those talks were put on hold as we initiated a WTO case on beef access. Industry was very supportive of us doing that, because we were upholding science based rules of trade and that applies to all industries. It has dragged on longer than most people would like. Having said that, we are very close. Korea had negotiated with us on the diplomatic side to set aside the challenge so they had a chance to come to grips with it through their parliament. But I think once we get this beef access

issue out of the way those are talks that can be reinvigorated.

**DB: With multilateral trade negotiations there is always the struggle to balance the needs of the different sectors like supply management versus an open grain market.**

**GR:** We have been very successful in getting the best of both worlds – making sure that all sectors in Canada continue to perform and help drive our economy. Supply management aside, we are making as many deals as we possibly can without giving up any of the benefits for Canadian farmers. Supply management is a very viable sector; of course it buys a lot of product even from the canola industry – canola meal in dairy rations. There is no shortage of experts who say it has to go. I don't agree with that, absolutely not at all. I think we can continue to exercise Canada's strength in a bilateral or multi-lateral setting without penalizing anyone.

**DB: You don't see that (supply management) as an obstacle?**



**GR:** No, I've never seen that, Debbie. In discussion with any countries around the world, the most I've been asked to do is explain how it works. Where the questions come to bear is on the level of tariffs. This is not a closed shop as many people would have you believe. When you cut to the chase I think Canada is one of the few countries where we can actually step up production to meet demand and that means we rely on all of our sectors to perform at 110 percent.

**DB:** Looking forward, what do you see on the horizon for 2012?

**GR:** The top of my agenda for the next year will be market access based on sound science; getting our heads and hearts around leading the world on low level presence. Making sure no one is denied market access based on non-scientific reasons. I think the WTO has to focus more on phytosanitary, non-scientific trade access that's been thrown up in different parts of the world – even ones that purport to be open and free traders still use non-science to hold out certain types of trade. I think the world is coming to grips on that.

**DB:** When you talk about science-based rules, do you see this type of research as a fit under the new federal Ag Innovation initiative?

**GR:** Absolutely. I think we need to put a lot more pressure and resources into the proactive side of agriculture. Into the innovation. Into the science. Into new varieties. Into maintaining a lighter environmental footprint. Up to this point we have put so much focus on reaction and I think we can cover a lot of that reactionary off with a better crop insurance that's easy, bankable and predictable. I think we can do more with one envelope that's done properly as opposed to three or four that sometimes overlap and sometimes have gaps.

**DB:** Okay Minister, why do you love canola?

**GR:** The canola industry understands agriculture. The industry understands you can't do the same things and expect different results. What canola has done is adapt. Canola farmers have looked ahead. They've been proactive. Canola has done everything that every other commodity strives to do. ●

*Debbie Belanger is editor of Canola Digest.*

## RITZ TAKES THE TEST

The Proust questionnaire is a series of quick questions designed to profile a person.

**DB:** Ready?

**GR:** Sure. I'm supposed to say the first thing off the top of my mind? So every answer is canola?

**DB:** Your favourite word?

**GR:** Opportunity.

**DB:** The word you hate most?

**GR:** Failure.

**DB:** Your favourite quotation?

**GR:** I'm much too young to feel this damned old.

**DB:** Hero from days gone by?

**GR:** My father; he was, I would say, the best farmer I've ever seen. He always had to be the best. He was meticulous. If you left a shovel laying beside the granary you lost your allowance. I mean he was that strict. But I learned a lot from him. He's forgotten more than I'll ever know about farming.

**DB:** Words you want to hear when you get to the pearly gates?

**GR:** Please enter. (laughs). ●



# A SOLID FOUNDATION

By Ali Hyde

Future-Sim Courses provide trading basics and simulations to make effective marketing decisions.

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**S**ome Alberta farmers are taking advantage of a simulation exercise to gain a better understanding of the basics of trading and to practice marketing skills.

These Future-Sim Courses offered by the Alberta Canola Producers Commission (ACPC) can range from four to six days or eight days over several weeks, depending on the instructor. Typically a course has a small group from eight to 15 participants, facilitating great discussions and question opportunities. Although the course is a significant investment (it costs \$500), the participants have given positive feedback and evaluations.

"I found the course extremely informative. If they offered another one I would do it again to gain more advanced knowledge of marketing," says Taylor Snyder, a farmer from Glendon, Alberta who plans to expand his family farm in the next couple of years. Snyder took the Future-Sim course in January 2011 and has credited his marketing knowledge to the information he learned during

his few week sessions. "I would go every year if I could," he says.

Neil Blue has been instructing these courses for several years and believes producers need to take more time to gather all the information necessary to make an informed decision about marketing their product. "The first step to effective marketing is to know one's cost for each unit of production," says Blue. This information forms the foundation for decisions on suitable prices for a product, he adds.

"Knowing the timing of cash flow requirements is another important consideration," he says. "Too often, the trigger for selling is the immediate need for cash to meet a financial obligation rather than in response to a good marketing opportunity."

Each Future-Sim instructor guides the participants through a mock market order process using a computerized simulation tool. "Each student reads some brief market information, reviews the graphs, prices and basis levels,

and then decides on what decisions to make for that turn," explains Blue. The instructor takes each of the students orders, processes them and returns the results from that turn to the student. The student then moves on to the next turn, considering the remaining crop and futures or options positions they have in their account. Interspersed with the turns in the simulation are presentations by the instructor or a guest speaker on material relevant to the course.



*"The first step to effective marketing is to know one's cost for each unit of production."*

– Neil Blue

Eugene Nixon, a farmer from Byemoor, Alberta, says the course gave him a better understanding of calls and puts. "Overall I was very impressed with the course. It gave me a better understanding of aspects of marketing that I was unfamiliar with," he says. "Anyone with limited knowledge of markets or even farmers who understand it would benefit from taking this course."

With all the positive feedback, these Future-Sim courses are proving to be beneficial to the canola industry. Participants are gaining more confidence in making marketing decisions in their own operation and a better understanding of market terminology and available marketing alternatives and considerations. ●

*Ali Hyde was a communications summer student with the Canola Council of Canada.*

# FLOURISH

IN YOUR AGRICULTURAL PURSUITS

## Congratulations to the winners of the 2011 Monsanto Canada Opportunity Scholarship!

Each of these students has received a \$1,500 scholarship to help fund their post-secondary education. If you are graduating from high school in 2012 and have plans to pursue post-secondary studies in agriculture, you can apply for a 2012 Monsanto Canada Opportunity Scholarship. Watch for details in February 2012 on how to apply or visit us online at [www.monsanto.ca](http://www.monsanto.ca).

### ALBERTA



Carla Chomistek Rolling Hills, AB   Patrick Fortier Waskatenau, AB   Bailey Hughson Foremost, AB   Tessa Manners Pincher Creek, AB   Jennifer Nichiporik Hotchkiss, AB   Kale Scarff Oyen, AB   Courtney Stroeder Tilley, AB   Blair Whitfield Marwayne, AB   Beverly Chard Dewdney, BC   Julia Flinton Williams Lake, BC   Shannon Palmer Port Alberni, BC

### BRITISH COLUMBIA

### MANITOBA



Breanna Anderson Swan River, MB   Kelsey Bailey Carberry, MB   Erin Cathcart Neepawa, MB   Erin Chorney East Selkirk, MB   Kendra Elliott Cromer, MB   Kiah Helgason-Stoyanowski Arborg, MB   Sean Horner Minnedosa, MB   Macey Ostberg Dominion City, MB   Davis Wright MacGregor, MB   Harris Bakker Killoween, NB   Courtney Blois Kennetcook, NS

### MARITIMES

### ONTARIO



Kelsey Brydon Waterville, NS   Christopher Albrecht Wellesey, ON   Michelle Baker Ancaster, ON   Jennifer Charlton Brantford, ON   Branden Domm Cambridge, ON   Kenny McRae Vankleek Hill, ON   Sylvia Megens Goodwood, ON   Jacob Nederend Breslau, ON   Erica Pate Brantford, ON   Jackie Shaw Palmerston, ON   Rudi Spruit Woodstock, ON

### QUÉBEC



Kaitlyn Van Engelen Theford, ON   Alexander Zelem Georgetown, ON   Héliène Boulay Marieville, QC   Emmanuel Brisson Sainte-Barbe, QC   Malcolm Duncan Ormstown, QC   Simon Ouellet St. Alexandre, QC   Daniel Sutherland Huntingdon, QC   Olivia Denomie Kuroki, SK   Kristina Disney Rockglen, SK   Tracy Fehr Rosthern, SK   Jason Fleischhacker Fulda, SK

### SASKATCHEWAN



Taylor Heck Sceptre, SK   Traci Henderson Gainsborough, SK   Moria Petruic Avonlea, SK   Kathryn Sarauer Anaheim, SK   Deandra Stachura Yorkton, SK   Melissa Turner Springside, SK   Cordell Young Bredenbury, SK

CONGRATULATIONS  
TO THE 2011 WINNERS





## CANADA COOKS THE BOOKS

Students from Prince Edward Island's Holland College wowed the judges and the audience at *Canada Cooks the Books* held during the Royal Winter Fair this past November.



Students Matt Warren and Michael Clarke were one of 13 groups who competed. They were challenged to prepare within one hour to do a 25 minute live demo of a recipe from one of the books shortlisted for the Canadian Culinary Book Awards. Lucky for them, they were given a recipe from *Flavours of Prince Edward Island: a Culinary Journey*, co-authored by three recognized PEI chefs – Jeff McCourt, Allen Williams and Austin Clement.

When their presentation of *Oysters Fricassee with Wilted Spinach* was complete, the four judges gasped at the level of sophistication the two students demonstrated in the presentation of the recipe. Within seconds, the picture appeared on Twitter feeds throughout Ontario.

Simone Demers Collins, MC for the competition and representative of the Alberta Canola Producers Commission (ACPC, lead sponsors for the event), commented, "This was a win-win for canola and the food industry."

"While all students were required to use canola oil in the recipes chosen for them, Matt and Michael provided truly creative ways of using this versatile product. First, they pan fried the capers adding crunch to the sauce; second, they used a spiral cutter to make potato strings that were deep-fried to create the circles on which the oysters were bedded; and finally, they blended fresh parsley with canola oil to decorate the plates," explained Demers.

"By using canola oil to sauté, pan-fry, deep-fry and create a flavoured sauce, the students demonstrated the culinary versatility of canola," she continued.

The winning students received cash prizes as well as having bragging rights to the *Canada Cooks the Books* trophy for one year. All students and judges received complimentary cookbooks, a sushi-making kit from the Canadian-Japanese Cultural Association, various food products and a canola oil tasting plate and booklet. ●



*The winning recipe, Oysters Fricassee with Wilted Spinach.*

## ALBERTA CANOLA PRODUCERS COMMISSION

### ANNUAL GENERAL MEETING

Tuesday, January 24, 2012

2:45 pm

Edmonton EXPO Centre at Northlands



### FARMTECH 2012 CONFERENCE

January 24-26

Edmonton EXPO Centre at Northlands

Western Canada's premier crop production and farm management conference. For complete details and registration, visit

[www.farmtechconference.com](http://www.farmtechconference.com) or call 1-866-327-6832.

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## NEW RESOURCES FOR ALBERTA'S CLASSROOMS

For the past decade, the ACPC has committed to provide teachers with Alberta Education curriculum-based lesson plans that can be used within various subjects, at different grade levels. Since early 2011, the ACPC is pleased to have launched several new topics in its series.

### Fields of Home

At the beginning of the year, an elementary book on the history of canola in Canada titled *Fields of Home* was launched. A copy was sent to every school library in the province. In an attempt to provide teachers with reliable tools that support the teaching of creative writing in the classroom, the book was accompanied by a teacher guide *Fields of Home Story-Scape*. The Story-Scapes mini-unit is an adaption of the Storyline strategy, a method that encourages students to build and explore understanding and deepen their appreciation and knowledge of concepts in both English and Social Studies.

Chase, the main character in the book, has since written a weekly blog teachers can invite students to follow as they learn to blog – [www.facebook.com/pages/supermanduffy](http://www.facebook.com/pages/supermanduffy). Teachers themselves can follow Chase on Twitter as he provides daily tips on incorporating creative writing in daily lesson plans – [www.twitter.com/supermanduffy](http://www.twitter.com/supermanduffy).

### The Skinny on Fats

The second new resource available is called *The Skinny on Fats – What's Essential About Fatty Acids?* It's a teaching and learning resource for Biology 20 that addresses concepts related to human digestive systems and the chemical nature of lipids.

These and all other ACPC resources are provided free of charge to teachers, parents who are home-schooling and professors who review and incorporate teaching resources in their classes. One of the challenges of being a teacher is remaining current on the subjects being taught. It's not an easy task when technology and information are constantly changing. ACPC seeks to help teachers overcome that challenge, while continuing to connect the population with agriculture in general and canola in particular.

The following resources are available free of charge by calling the ACPC office at 1-800-551-6652 or as a downloadable link by contacting [simone@canola.ab.ca](mailto:simone@canola.ab.ca).

**Grade 3:** Plant Growth (Science)

**Grade 3:** Exploring Insects and Our Food Supply (Science)

**Grades 3-7:** Fields of Home: An Integrated Teaching Mini Unit for Alberta Language Arts & Social Studies

**Grade 4:** How do Alberta Communities Grow & Supply Food from Plants? (Science)

**Grade 5:** How Does the Natural Environment Affect Canada's Food Supply? (Science)

**Grade 7:** Urbanization & Agriculture: Past Development, Future Tensions (Social Studies)

**Grade 7:** Sustainability & Agriculture: Making Wise Decisions (Science)

**Grade 7, 8 & 9:** Body Image & Food Choices (Foods, CALM, Health)

**Grade 9:** Biotechnology & Biodiversity: a Question of Balance (Science)

**Grade 9:** Consumerism & Quality of Life: Food and/or Fuel? (Social Studies)

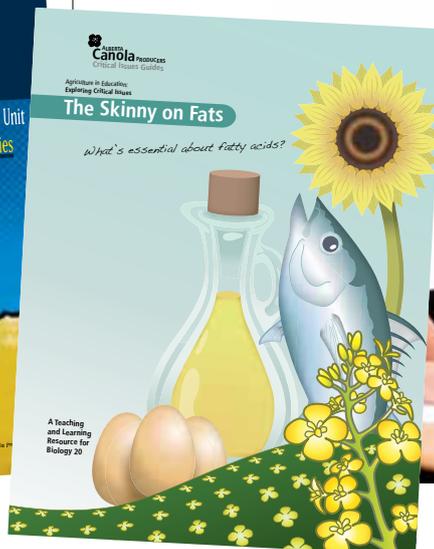
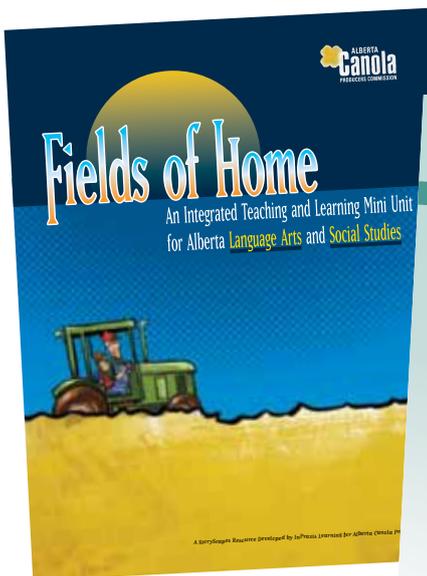
**Grade 10:** Climate Change & Agriculture: Cause & Effect (Science)

**Biology 20:** The Skinny on Fats – What's Essential About Fatty Acids?

**Chemistry 20 &/or 30:** Biofuels: Choice or Necessity (how to make biodiesel in the classroom)

In addition, Alberta classrooms that participate in the Earth Box programs will be provided with recipes, mini-spritzers and ingredients so students can learn how to make salad dressings that complement the vegetables they have grown. ●

*ACPC Market Development Goal #4: Awareness of agriculture and canola and the role that each plays within our society.*





## EXECUTIVE DIRECTOR'S REPORT

Happy New Year. For any of you who have trouble making a resolution or for those of you who have trouble keeping them, I have a suggestion for an easy one: "This year I will let my canola levy organization know what's on my mind." There are ever so many ways to connect with us – email, phone, Twitter and Canada Post delivers to us daily. Our board and staff work very hard to invest your levy in projects and programs that will keep canola profitable. Let us know if you think we are on the right track.



*Catherine Folkersen*  
SaskCanola

In 1991 there was a concerted effort by the Saskatchewan Canola Growers Association (SCGA) to develop the Saskatchewan Canola Development Commission so a levy could be collected and a research fund started, managed by farmers. Twenty one years later the levy has grown from \$0.50 per tonne to \$0.75 per tonne, resulting in an organization with annual revenues of about \$4.2M, about \$2M of which is invested in research.

This fund has been instrumental in creating many improvements for canola producers. Diseases, pests and other agronomy issues continue to be a cornerstone of our programming. Most times when we spend a dollar on research, the provincial government or the federal government match it or provide more than our \$1. As farmers, you have invested in sound science to keep your crop competitive in a global marketplace.

Canola continues to attract market attention due to its health benefits – your levy dollars have gone to extensive (and expensive) clinical trials that allow us to crow about how healthy this oil is because we have the science on our side. Today, consumers demand that claims be backed up by real science, and we have it.

To all the producers who have supported this fund through their levy payments, you are the envy of farmers around the world for your foresight and commitment. Your contributions have allowed for world class research and development to drive canola forward. Thanks also go to all of our partners in research: Agriculture and Agri-Food Canada, Saskatchewan Ministry of Agriculture, National Research Council, University of Saskatchewan, the Manitoba Canola Growers Association, the Alberta Canola Producers Commission, and the list goes on.

Next week we will be at Crop Production Week in Saskatoon. Our Annual General Meeting and Producer Conference are on January 12, 2012 at the Saskatoon Inn. This is a great way to talk with the board about our past year's activities and upcoming plans. Hope to see you there.

Sincerely,  
Catherine Folkersen  
Executive Director

## SASKCANOLA REGIONAL PRODUCER MEETINGS

Plan to attend one of these upcoming meetings:

**Humboldt – February 15**

**Melfort – February 16**

**Kindersley – February 28**

**Moose Jaw – February 29**

**Alameda – March 1**

**Battlefords – March 8**

Topics include: up-to-date market analysis, canola disease management (particularly clubroot and sclerotinia) and managing for weed resistance in canola.

For detailed agendas and pre-registration go to [www.saskcanola.com](http://www.saskcanola.com) or call 1-877-241-7044.

Pre-registrations will be included in a draw for 2012 Rider game tickets! ●



## SURVEY FUNDING LOOKS AT WET ACRE SEEDING

By Pat Flaten, Research Manager

Have you wondered how southeast Saskatchewan managed to get any canola in at all last spring? Lana Shaw, researcher at the South East Research Farm (SERF) in Redvers was in the heart of the wet acres area and subsequently asked SaskCanola for funds to conduct a survey of the many farms that tried to establish canola stands last spring, many doing so by broadcasting their canola.

Thirty-two canola fields were surveyed in the region from Moosomin to Carnduff. The survey noted that a few of the early fields were mudded in by air drill, but as it became wetter, more were broadcast by airplane and Valmar-type spreaders, while others were left as volunteer canola. In almost all cases, they were harrowed in.

Both plant populations and farmer-reported yields are included in the SERF report and some of the data is in Table 1 below. Notable is the range of yields for various ways of getting the seed on and into the ground, achieving anywhere from nothing (volunteer crop that was baled) to 30 bushels per acre. This year proves producers aren't always faced with "normal" circumstances, and they are forced to adapt to the conditions they are given.

Would these producers do it again? I suspect some would. Although we don't have their final word, one of our directors, Franck Groeneweg from Edgeley, used the broadcast and incorporate method in 2010. His actions spoke when he sold his harrows the next year to avoid the temptation, even though achieving an average yield of 18 bushels per acre.

The full report for this study is online at [www.saskcanola.com](http://www.saskcanola.com).

**Table 1: Canola plant populations and seed yield for 32 southeast Saskatchewan extremely wet fields in 2011**

(provided by Lana Shaw, PAg, Research Manager, South East Research Farm, Redvers, SK)

	Number of Fields	Average Seeding Date	Average Plants/ m <sup>2</sup>	Average Yield (bu/ac)	Yield Range (bu/ac)
Aerial Application	3	June 4	107	19.8	7.5 - 28
Air Drill	10	May 18	90	21.6	16 - 30
Broadcast & Harrow	16	May 28	99	18.1	5 - 28
Volunteer	3	n/a	111	5	0 - 10
<b>Average (excluding volunteer)</b>	<b>32 (total)</b>	<b>May 24</b>	<b>97</b>	<b>19.5</b>	



## CLUBROOT

As you know, clubroot symptoms have been found on roots in two rural municipalities in Saskatchewan. For this reason, SaskCanola urges all producers to be diligent in preventing the spread of clubroot, for the sake of your own capacity for growing this profitable crop in the future.

We are fortunate that varietal developments have made clubroot tolerance available to us. However, it is not 100 percent resistant and the tolerance will erode, just as it is doing with blackleg. The best way to fight this is to slow its spread. Two of your best tools are to clean field equipment and break disease cycles with other crops. Recognizing clubroot early will provide many more management options for individual producers.

For more information, find the link at [www.saskcanola.com](http://www.saskcanola.com) for the Saskatchewan Clubroot Management Plan.

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## RESEARCH SUMMARIES HIGHLIGHTED ON WEBSITE

Many of the projects supported over the past 20 years are now summarized and available for easy review at [www.saskcanola.com](http://www.saskcanola.com) under the **Research** tab. Many full reports are also posted for those that really want to dig into the details specifically relating to crop establishment.



## MANITOBA CANOLA GROWERS ANNUAL GENERAL MEETING/SPECIAL MEETING

The Manitoba Canola Growers Association's (MCGA's) Annual General Meeting (AGM)/ Special meeting will be held on Tuesday, February 28 at Brandon's Keystone Centre. For 2012, MCGA is showcasing a storage clinic in conjunction with the AGM/Special meeting. The storage clinic will start at 9:00 am, followed by the AGM/Special meeting at 10:30 am, and then the storage clinic will resume afterward. The fee for the storage clinic is \$30 for early registration and \$40 for on-site registration. The AGM/Special meeting is free.

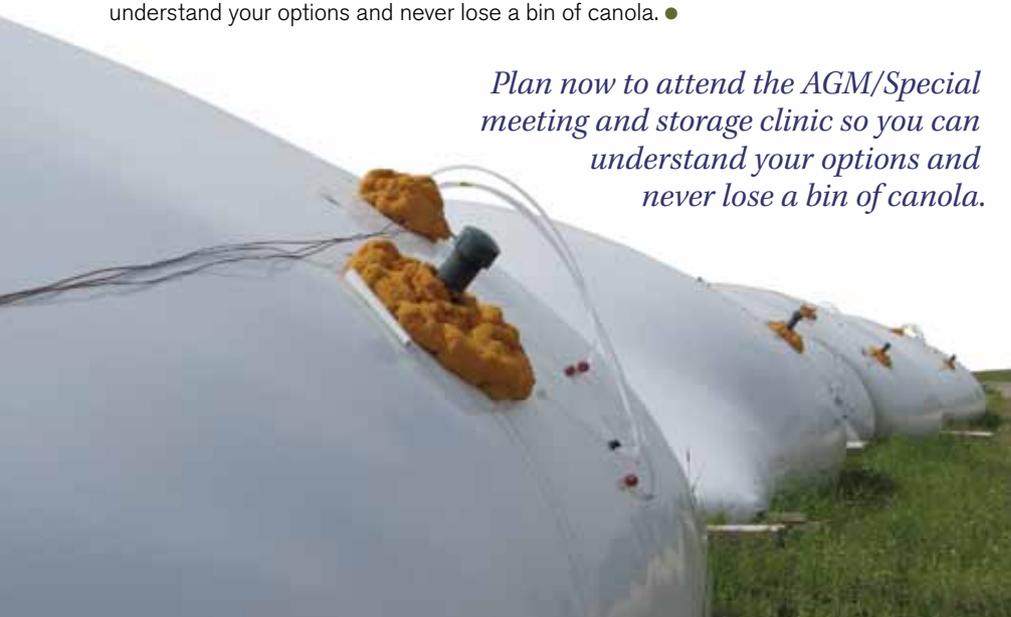
With the help of the Canola Council of Canada, MCGA will bring in speakers such as Joy Agnew of PAMI and Digvir Jayas of the University of Manitoba. Agnew will speak on the conditioning of canola for storage. Jayas will discuss his findings on storing canola in the bag storage system, based on his research that was partly funded by MCGA.



*Digvir Jayas*

The storage clinic will include a live demonstration of how to fill the bag storage with canola and how to take canola out of the bag storage. There will be workshops on bins, floors/ducts, fans/rockets/aeration, monitoring systems and cables, and farm safety. Storage is a very important component of farming. To lose just one bin of canola would be a huge financial loss. Plan now to attend the AGM/Special meeting and storage clinic so you can understand your options and never lose a bin of canola. ●

*Plan now to attend the AGM/Special meeting and storage clinic so you can understand your options and never lose a bin of canola.*



## RISK MANAGEMENT COURSES

MCGA in partnership with ICE Futures Canada and the Canadian International Grains Institute (CIGI) will hold two risk management courses. The first course will be held in Brandon on Friday, March 2 and Monday, March 5, 2012. The second course will be held in Starbuck on Tuesday, March 6 and Thursday, March 8, 2012.

Participants will receive training in risk management and marketing of canola, with a specific focus on marketing analysis and hedging strategies using futures and options. The role and function of a futures exchange and clearinghouse will also be discussed. This two day course will include take-home materials, interactive review of questions and numerous examples.

To register for these courses and to see the agenda go to [www.cigi.ca](http://www.cigi.ca). ●



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## FEEKE HONOURED WITH CANOLA AWARD OF EXCELLENCE

By Shel Zolkewich

Chef Mary-Jane Feeke is about to add one more title to her venerable list that already includes pastry chef for Manitoba's culinary Olympic team, teacher and owner of Benjamin's Gourmet Foods in Selkirk. She's now the recipient of the 2012 Canola Award of Excellence, presented by MCGA.

"I always have used canola oil," says Feeke. "It was a choice I made even before I met anyone from the Manitoba Canola Growers."

Since 2008, the MCGA has been acknowledging the accomplishments of individuals and organizations that contribute to the sustained growth and prosperity of Manitoba's canola industry. Bruce Dalgarno, treasurer of the board of directors of the MCGA says Feeke's commitment to canola oil made her a natural choice for this year's award.

"Chef MJ is a supporter of local healthy foods and ingredients like canola oil. As a canola grower, I am proud to have chefs like MJ use our ingredients. I know Chef MJ takes pride in creating her amazing dishes," says Dalgarno.

Feeke says her decision to use canola oil in so much of her cooking and baking isn't based on just one thing. "I use canola oil because it has a high smoke point, doesn't impart any flavour – which is particularly great for baking – and it has many health benefits," says Feeke. "I also always use canola margarine."

Feeke said canola oil seems to be gaining more and more traction all the time when it comes to how it's used in the industry. "Canola is perceived as a healthy choice. Many chefs still feel that butter or olive oil are needed for their taste, but you will see the trend now

of combining the two to cut down on fat," she says. That means instead of using one quarter cup of butter in a recipe, chefs will now use one tablespoon of butter and three tablespoons of canola oil.

Making healthier choices is all part of an ever-increasing interest in food. Feeke says we can thank the media for that. "I think this is great for our industry," she says. "Making the chef profession more notable than it had been in North America is a good thing."

The award was established to give a nod to the key contributors in the canola field. "MJ has become an ambassador for canola," says Dalgarno. "She believes in the product and uses it in all her culinary applications. She is indeed a leader in her field."

The first recipient of the award was Dr. Baldur Stefansson of the University of Manitoba who is widely regarded as the father of canola. Other recipients have included researchers and individuals that were instrumental in setting up the canola growers organization.

"Now we are honouring the culinary part of the canola industry with an award to Chef MJ Feeke," says Dalgarno.

Late last year, Feeke expanded Benjamin's Gourmet Foods by opening the doors to The Cellar. The space – next door to the original operation – includes a banquet space, classroom workshop area and a wine cellar with a chef's table that seats 20 people.

Also on her agenda is the final stretch in preparations for the World Culinary Olympics in late 2012 in Erfurt, Germany. The event is held every four years. In 2008, Feeke was a support member for Team Canada. The team won four gold medals and placed fifth in a field of 32 countries. ●

*Chef Mary-Jane Feeke*



## BRANDON WHEAT KING SPONSOR DAY

### Mark your calendars

Friday, March 2, 2012 is the MCGA's sponsor day for the Brandon Wheat Kings. The Brandon Wheat Kings will take on the Lethbridge Hurricanes at 7:00 pm. Last year we painted the barn yellow by giving out 1,000 yellow thunder sticks. This year we will be giving away yellow cow bells at the game. We also have 100 tickets for this Wheat Kings game to give away. If you would like tickets to the game, please email [info@mcgacanola.org](mailto:info@mcgacanola.org) or call Wendy at 204-805-1611. ●

*The Brandon Keystone Centre uses canola oil at all their food venues.*





## DELIVERY OF GRAINS AND OILSEEDS DECLARATION OF ELIGIBILITY

I, \_\_\_\_\_

DO SOLEMNLY DECLARE AND AGREE THAT:

Any and all deliveries of grains and/or oilseeds made by me or on my behalf to the Grain Handling Company are eligible varieties for delivery for the commodity type of grain and/or oilseed for which payment is being requested in accordance with the Canada Grain Act, Seeds Act, and all Regulations and Orders made pursuant to those Acts (collectively, the “Acts”).

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In a business where the presence of de-registered varieties can make or break a multi-million dollar deal, you can be sure that the companies you sell to are actively checking and tracing all deliveries.

So don't make the mistake of growing de-registered varieties. It can cost you more than you think.

**Are you export ready?**

**For a list of de-registered varieties go to [www.canolacouncil.org](http://www.canolacouncil.org)**

This important message  
brought to you by:



# FIND COMFORT IN SUPERFOODS

By Keri Glassman

Eat hearty and healthy this winter with disease-preventing recipes.



**W**inter is when people tend to burn firewood rather than calories and turn to not-so-nutritious comfort foods instead of their healthy favourites. Yet, heart disease is the number two cause of death in Canada; 60 percent of Canadian adults and 26 percent of Canadian children are overweight or obese; and an estimated 2.4 million Canadian adults will have type 2 diabetes by the year 2016.

Eating well is more important than ever; after all, your body and overall health depend on it. A diet low in saturated fat and salt and rich in fruits and vegetables helps prevent heart disease and type 2 diabetes, controls body weight and keeps you feeling good while preventing chronic disease. By choosing the right ingredients and having inspirational recipes on hand, you can use food to comfort both your mind and body.

My unique *Hearty and Healthy Winter Recipe Collection* developed exclusively for CanolaInfo contains six disease-preventing recipes, which are hearty enough to satisfy wintertime cravings

yet healthy enough to fuel the body without undesirable calories. Sample recipes include Thai Sweet Potato Bisque with Parmesan Whole-Wheat Crostini, Zesty Beef Stir-Fry over Brown Rice and Vegetarian Portobello Mushroom Stack over Quinoa (see page 42 for recipe).

## POWERHOUSE INGREDIENTS

Each recipe in this collection contains nutrient-rich ingredients that have been shown to help prevent disease when part of a healthy lifestyle: sweet potatoes, garlic, spinach, kale, brown rice and canola oil. All of these ingredients are low in saturated fat and cholesterol (with the exception of lean sirloin, but in moderation, it has other health benefits). Most are loaded with nutrients – protein, vitamins, minerals, antioxidants, omega-3 fats, fibre, etc. – that help keep the body in fantastic shape, fight off pesky seasonal infections and give you a healthy boost for life.

From the beta carotene in sweet potatoes to the lycopene in red bell peppers and phytochemicals in

portobello mushrooms, every ingredient in my *Hearty and Healthy Winter Recipe Collection* is incredibly tasty and truly nutritious. I created this collection to show people how wonderful yet easy it is to eat well without compromising taste or flavour.

As a common ingredient in all six recipes, canola oil delivers on heart health. It has the least saturated fat and most omega-3 fat of all cooking oils and is free of *trans* fat and cholesterol. In fact, the U.S. Food and Drug Administration authorized a qualified health claim for canola oil on its potential to reduce the risk of heart disease when used in place of saturated fat. New research is also showing potential links between canola oil consumption and reduced risk of breast cancer and type 2 diabetes. In addition, canola oil is a good source of vitamins E and K.

*Everybody needs a moderate amount of healthy fat in their diet for good health and canola oil is one of the best sources of it.*

The oil you choose to cook with is as important as major recipe components. While it's recommended that people keep their daily fat intake to 25 to 30 percent of calories, the majority of this intake should be from unsaturated fats like those found in canola oil. Everybody needs a moderate amount of healthy fat in their diet for good health – it helps keep the nervous system functioning properly and helps the body absorb fat-soluble vitamins – and canola oil is one of the best sources of it.

For my *Hearty and Healthy Winter Recipe Collection* and “superfoods” information, visit [www.canolainfo.org](http://www.canolainfo.org).

*Keri Glassman, M.S., R.D., C.D.N., a nationally-recognized nutrition expert and book author, is the founder and president of Keri Glassman Nutritious Life in New York City.*

# VEGETARIAN PORTOBELLO MUSHROOM STACK OVER QUINOA

This colourful, earthy dish offers a medley of powerhouse ingredients from protein-rich quinoa and chickpeas to vitamin-dense portobello mushrooms and red pepper. Canola oil's light texture complements other ingredients without weighing them down.



## QUINOA

- 1 tsp **canola oil**
- ¼ large **sweet onion**, chopped
- 2 cloves **garlic**, finely chopped
- 1 cup **uncooked quinoa**, rinsed
- 1 tsp **cumin**
- 2 cups **low-sodium vegetable broth**

## MUSHROOM STACK

- 2 cloves **garlic**, finely chopped
- ½ tsp **dried thyme**
- 2 Tbsp **sherry wine vinegar**
- 2 Tbsp **balsamic vinegar**
- 1 Tbsp **canola oil**
- 1 **red pepper**, cored and sliced lengthwise
- 4 **portobello mushrooms**, stems removed and rinsed
- 1 cup **cooked chickpeas**
- ½ Tbsp **canola oil**
- 1 large **sweet onion**, sliced into half moons
- ¼ tsp **salt**

## INSTRUCTIONS

- 1 Preheat oven to 350°F. To prepare quinoa, heat canola oil over medium heat in a 2-quart saucepan. Add onion and garlic and sauté 2 to 3 minutes. Add quinoa and cumin, sauté another minute. Add vegetable broth and bring to boil. Cover pan, reduce heat to low and simmer 10 to 15 minutes until liquid is absorbed.
- 2 To prepare mushroom stack, whisk garlic, thyme, sherry and balsamic vinegars and 1 Tbsp canola oil in a small bowl. Dip red pepper slices in marinade and place on small baking sheet. Dip each mushroom in marinade, coating both sides, and place on half of large, parchment-lined baking sheet. Toss chickpeas in remaining marinade and place on other half of large baking sheet. Bake all 30 minutes, turning mushrooms and red pepper and tossing chickpeas once halfway through.
- 3 Set mushrooms and red peppers aside and add chickpeas to cooked quinoa.
- 4 In large sauté pan, heat ½ Tbsp canola oil over medium-high heat, add sliced onions and toss to coat with oil. Cook 7 to 8 minutes, sprinkle with pinch of salt and cook 10 to 12 minutes longer, stirring frequently until caramelized (onions will be a rich brown and smell sweet).
- 5 To serve, place one cup of quinoa on each plate, and top with one portobello mushroom (gill side down), three or four slices red pepper and caramelized onion.

Yield: 4 servings

Serving Size: 1 cup quinoa and 1 mushroom stack

## NUTRITIONAL ANALYSIS PER SERVING

Calories	370
Total Fat	10 g
Saturated Fat	1 g
Cholesterol	0 mg
Sodium	320 mg
Carbohydrates	55 g
Fiber	10 g
Protein	13 g

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