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EDITORIAL OFFICE

Editor
Jay Whetter
Canola Council of Canada
400 – 167 Lombard Avenue
Winnipeg, MB R3B 0T6
(807) 468-4006
E-mail: whetterj@canolacouncil.org

Publisher
Canola Council of Canada
400 – 167 Lombard Avenue
Winnipeg, MB R3B 0T6
(204) 982-2100 Fax: (204) 942-1841

Production
Amanda Howard
(403) 410-7656
E-mail: amanda.howard@adfarmonline.com

ALBERTA Canola PRODUCERS COMMISSION

ACPC OFFICE

Ward Toma
Alberta Canola Producers Commission
#170, 14315 – 118 Avenue
Edmonton, AB T5L 4S6
(780) 454-0844 Fax: (780) 465-5473
E-mail: ward.toma@canola.ab.ca

Manitoba Canola Growers

MCGA OFFICE

Bill Ross
Manitoba Canola Growers Association
400 – 167 Lombard Avenue
Winnipeg, MB R3B 0T6
(204) 982-2120 Fax: (204) 942-1841
E-mail: rossb@mcgacanola.org

SaskCanola

SaskCanola OFFICE

Catherine Folkersen
SaskCanola
212 – 111 Research Drive
Saskatoon, SK S7N 3R2
(306) 975-0262 Fax: (306) 975-0136
E-mail: cfolkersen@saskcanola.com

ADVERTISING SALES

WTR Media Sales Inc.
1024 – 17 Avenue S.E.
Calgary, AB T2G 1J8

Robert Samletzki
(403) 296-1346
Toll free: 1-888-296-1987
E-mail: robert@wtrmedia.com

Linda Samletzki
(403) 296-1349
Toll free: 1-888-296-1987
E-mail: linda@wtrmedia.com

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Andrew Dalgarno has compared planters and terrain-following air drills on his farm the past two years. Row width and its effect on weed management is a big factor for him. Read more in the cover article.

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Cover: Jerry Mazurek of Eaglesham, Alberta has an air drill with independent terrain-following openers. The drill is an important part of his overall canola seeding system, which he says results in seed survival of 80 percent or more. Photo credit: Jay Whetter

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SEEDING IDEAS

THE EDITOR'S DESK

Jay Whetter

There are a wealth of seeding tool innovators in Western Canada but, for all the brains, we haven't designed a drill from the ground up for canola – our most valuable crop. This is what motivated the cover article, *The Best Canola Seeding Tool*. However, after writing the article, I don't think our lack of a canola-specific seeding tool is the biggest obstacle to improved seed survival.

Further research may prove me wrong. We may find that precise seed spacing down the row is a huge factor in seed survival. But if perfect one-inch spacing – to give an example – is ideal, then even the most precise metering systems will be challenged to achieve this, given the light weight of canola seed and its tendency to bounce in the furrow.

We may also find that putting every seed at exactly the same depth is another huge factor in uniform stand establishment compared to having some variance from seed to seed or row to row. But, even if that's true, the sweet spot for growers will lie between practicality and precision. And that sweet spot can probably be achieved with refined application of seeding technology already available and in use.

This refinement includes new respect for the seed investment. Canola can yield fairly well even with poor establishment and a lower plant stand, but relying on that fact will not take canola production and profitability to the next level. A poorly established canola crop might still yield 40 bu./ac. if conditions align. (It could also yield very poorly.) But how much would profits increase and yield improve if more seeds survived, and if the crop established uniformly to provide strong weed competition, easier disease and insect management, and earlier maturity? We are starting to put numbers to these factors.

What we do know is that challenges to good canola stand establishment have more to do with the whole seeding system – of which the drill is but one part. Research articles in our *Canola Digest* Science Special, which you received in November, show that speed matters more than the opener, and that seeding rate, seed depth and fertilizer placement can make big differences. These issues can be addressed, to some degree at least, with settings and set-up of any old drill.

The wizards of seeding tool innovation will continue to add features for canola placement, and research will continue to explore better practices for stand establishment. These are both good things. But, in the end, the most important lesson I learned while putting together the best seeding tool article and the Science Special is that significant improvements in canola seed survival are within reach – just by applying the knowledge we already have. A great new seeding tool cannot compensate for poor agronomy. ●

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By Jay Whetter

THE BEST CANOLA SEEDING TOOL

Canola performs at its best when seeded shallow and at a uniform depth, with good seed-to-soil contact and packing to suit the soil moisture conditions. Row spacing and fertilizer placement are also important. So, what seeding tool provides the best solution? It could be the one you already have.

Corn planters are engineered perfectly for corn. Their design is based on years of science to determine the ideal seed depth, seed spacing, row width and seed counts per acre to produce the highest corn yield. Serious corn growers use planters. Period. Do we have the same consensus on the ideal seeding tool for canola? Not even close.

In Western Canada, we have growers seeding canola with precision double-disc corn planters. But we also have growers seeding canola with broadcast spreaders and harrows, and everything in between. Consensus on what tool is most effective may be further away than ever. David Larsen, agronomist with Case New Holland (CNH) in Saskatoon, explains this hodge-podge and general lack of urgency with one simple fact: "Canola can do great with all drills."

So why write this article? Well because, as Larsen also says, "There is definitely interest in creating a better canola seeding system." Canola growers and researchers see room to improve when it comes to canola stand establishment.

Chris Thiberge, an agronomist who runs Machelmi Ag Consulting at Sexsmith, Alberta, says the best seeding tool for canola is the air drill with independent terrain-following openers. These drills have seed depth and packing pressure control on each individual run, and can put fertilizer 1.5" down and to the side of seed. "This equipment is able to do what we know is best to do," Thiberge says.

Yet, across the Prairies, various canola growers are trying planters to see if they can improve on seed depth consistency and seed singulation. Andrew Dalgarno from Newdale, Manitoba is one of them.

"When a local seed rep got a set of canola metering discs for a John Deere planter, we decided to try the planter in a seeding demo we had organized on our farm for 2012," Dalgarno says. Results did not favour the planter. Dalgarno repeated the demo in 2013, adding a Great Plains planter with 10" spacing, along with the John Deere planter and the air drills. "Planter yield results were middle of the pack when compared to the air drill results," he says.

The challenge in making a seeding tool decision is that so many variables influence canola establishment and yield results. On the equipment alone, row width, seedbed utilization, opener design, seed metering systems and fertilizer placement are factors. So are seeding speed, seeding depth, seed depth uniformity across the drill, opener wear, and hose and manifold wear.

Then you have factors that influence seed survival: seeding date, soil temperature, soil type, residue distribution and depth, and whether the field was tilled. Finally, there are two simple facts that throw a wrench into any comparison. One, when topsoil moisture is just right, all seeding systems can work well. Two, even after a terrible seeding job, canola plants that do survive can often compensate and produce a reasonable yield.

TWO KEY QUESTIONS

The Quest for the Holy Drill begins with a question: What are you trying to achieve with your seeding operation?

Within that question are lots of sub-questions: Do you want precise seed placement? Do you want to seed fast? Do you want narrow rows to increase competition against weeds? Do you want to put all your seed and fertilizer down in one pass? Do you want an 80 foot drill with a huge central fill tank to cover more acres in a day?

Research over the years has found that canola does best with a consistent seeding depth of about 1/2" to 3/4", with seeds placed on a firm, moist seedbed and soil packed gently over top. Up to 20 lb./ac. of phosphate can go with the seed, and all other fertilizer should be in a band near the seed. The ideal plant population for yield potential is seven to 14 plants per square foot, spread uniformly throughout the field.

Chris Thiberge's idea of what is "best to do" refines these management practices even further. He encourages his grower clients to target a stand of nine to 12 plants per square foot, for example. By following his guidelines, Thiberge says his Peace Region growers are getting at least 70 percent canola seed survival, and often more, compared to the typical 40 to 60 percent.

Once you have balanced your objectives with the ultimate needs for a top-notch canola stand, the next question is: What seeding tool will meet these objectives?

In some cases, growers don't need a new drill to achieve these goals. Reducing ground speed can do wonders. "I've seen where growers can improve yields by five bushels per acre just by slowing down," Thiberge says. Lower rates of seed-placed fertilizer or proper packing pressure can also improve seed survival. Drill leveling and replacement of worn openers can improve seed depth uniformity. Cold soils, uneven residue, or low seeding rates present a serious challenge to all canola stands regardless of the seeding tool – old or new.

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If the old drill offers no hope for consistent depth, uniform seeding rates per row, and safe placement of fertilizer (if one pass is a goal), then a new seeding system is in order. Growers looking at new drills tend to favour air drills with independent terrain-following openers, but planters are getting some second glances.

AIR DRILLS WITH INDEPENDENT TERRAIN-FOLLOWING OPENERS

Most drill manufacturers in Western Canada offer something in this category. With terrain-following drills, each opener arm has its own packing wheel that follows contours independently for precise depth control across the width of the drill. Each opener arm has separate shoots for seed and fertilizer.

Jerry Mazurek farms at Eaglesham, Alberta, and has worked with Thiberge for the past five years. "Our inputs were getting so expensive, and there were so many snake oil salesmen," Mazurek says. "I needed a professional to help with my decisions."

Thiberge introduced a new agronomy approach, including weekly field scouting and plant stand targets. He also encouraged Mazurek to replace his single-shoot seeder with a new drill that could offer precise seed placement and to apply all his fertilizer in one pass.

Mazurek bought a Seed Hawk terrain-following drill with openers that place seed in two bands about two to three inches apart and fertilizer between the seed bands, but deeper. He places all fertilizer, including phosphate, in the separate band. With the drill and Thiberge's strategy for canola stand establishment, Mazurek says he has been getting over 85 percent canola seed survival.

This is why Thiberge believes the terrain-following drill with a one-pass option to safely place fertilizer is the answer for canola. Tweaking continues. Seed Master, for example, has a new Ultra Pro meter that feeds canola seed more precisely and uniformly into each hose. Seed Master calls it "near singulation," an improvement on seed distribution to each opener.

Chris Thiberge, who runs Machelmi Ag Consulting at Sexsmith, Alberta, says a lot of growers already have a drill that can seed canola adequately. He says they just have to pay attention to other details – such as seed depth and fertilizer placement – that affect canola seed survival and establishment.

PLANTERS

Can air drills ever be as good as planters for seed placement? Larsen with CNH says, "row-crop planters are still the much more advanced seeding tool." Planters use disc openers, and each unit floats independently with a gauge wheel right beside the opener disc for precise depth control. Planters have seed meters directly above each disc opener, dropping seed about a foot straight down into the seed row.

Andrew Seibert, John Deere marketer for seeding equipment, says, "I believe a planter will provide better spacing and depth uniformity than an air seeder in most environments."

However, Seibert also says planters have three "serious limitations" for seeding canola in Western Canada. First, they are not well adapted to applying large amounts of fertilizer, especially dry fertilizer. "There is just not enough room on the planter frame to mount that many fertilizer openers on a narrow row configuration," he says.

Second, most North American planters available today only go down to about 15" row spacing, which "could be too wide for top yield potential in canola in Western Canada," he adds.

Third, Seibert says, "even though customers have successfully planted canola with John Deere planters, they were never designed to plant such a small seed, so accurate canola metering can be a challenge."

These challenges have inspired solutions. Great Plains Manufacturing, for example, has a planter with 10" spacing. It also has a new canola seed metering disc with a large diameter and 250 cells for lower RPMs and increased accuracy.

Kellen Huber, owner of TriStar Farm Services in Regina, has rigged a Monosem planter to apply all fertilizer in one pass. The Twin Row planter has row units paired together on eight inch spacing, and then a gap of 22" between each paired row. The wide gap provides room for a mid-row band of liquid or dry fertilizer. Huber uses a Monosem

Jerry Mazurek from Eaglesham, Alberta, says he has been getting 85 percent canola seed survival with a terrain-following drill. He seeds shallow, and places all fertilizer, including phosphate, in a separate band between twin seed rows.

"All high value crops around the world are seeded with a double disc opener."

– Kellen Huber, TriStar Farm Services

NG plus 4 model with a frame heavy enough to handle a tow-behind Morris cart for dry fertilizer. Canola seed goes into the two-bushel hoppers over each planter unit.

"All high value crops around the world are seeded with a double disc opener," Huber says. "This Monosem planter with the Morris cart for dry fertilizer is a Western Canada solution for seeding canola with a double-disc planter."

Huber's planter also has residue managers in front of each seed row to improve seed placement in zero till fields. One concern raised with planters is that they work best in tilled soil and could represent a major step back in soil management. Seibert says planters cut residue well, and coulters and row cleaners can be added to improve results.

"However, using these attachments successfully with narrower rows such as 15" row spacing becomes a challenge," he says. "Row cleaners can be so aggressive that on narrow rows they pile up the residue between rows or throw residue onto adjacent rows."

Blaine Metzger, project manager and seeding equipment specialist with the AgTech Centre in Lethbridge, Alberta, says "it's a known fact" that planters still have penetration issues, especially in hard and dry conditions. "In heavy trash and stubble, they still hairpin and have poor seed placement," he says.

Planters, with their wider rows, also tend to encourage lower seeding rates as a necessary step to reduce competition within the row. This is sometimes viewed as a bonus, yet the wider the row, the harder it is to achieve seven to 14 healthy plants per square foot. "Rates of 2 lb./ac. make me nervous," Metzger says. "Even with perfect germination, they wouldn't be hitting the target population needed for optimal yield."

A final but important whole-farm limitation is that planters are not good for crops such as cereals that are seeded at a higher weight per acre. If you have cereals in the rotation, and you want to stick with one drill, a planter isn't the right choice.

CONCLUSION

Many growers consistently produce great canola crops with old drills. Keep the drill maintained with good sharp openers, seed into warmer soils, seed shallow and pack appropriately, and most drills will achieve reason-able success.

However, growers replacing old drills have a decision to make. While planters and independent terrain-following drills are improvements over C-shank air drills, one has not demonstrated clear dominance over the other. Each has its benefits and limitations. As Seibert states frankly, "I don't know what the ideal seeding tool for canola would look like."

More research is needed before we will finally have a seeding tool that suits canola as well as the planter suits corn. For example, we don't know the ideal space between canola seeds down the row, and we don't know the ideal seedbed utilization for canola. Metzger is designing a study to bring us closer to answers.

Huber at TriStar is also running various canola seeding equipment trials. When asked what he thinks is the best tool to seed canola, he is actually torn between his Monosem planter and a comparatively simple tool called the Crust Buster 4700

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Great Plains Manufacturing has a planter (left) with 10" row spacing, a central-fill tank and seed metering discs designed for canola. The discs have a wide diameter for slower RPMs and 250 tiny cells (above) sized for canola seed.

VOLUNTEER CANOLA CONTROL

NEEDED AGAIN IN 2014

The wind that whipped canola swaths across the Prairies during the harvest of 2012 will still be felt in 2014. Volunteer canola seeds can survive in the top few inches of soil for up to 3 years.

Volunteer canola will always be a going concern for canola growers, making it important to plan ahead and start the spring with a PrePass™ XC application prior to seeding. Volunteer canola robs crops of valuable nutrients and also, because the seed is untreated, can introduce seedling diseases and increase flea beetle pressure.

Paul Roemmel grows 9,000 acres of barley, canola, wheat and peas, near Claresholm, AB, seeding approximately 5,000 acres to cereals each year. He looks for the best pre-seed weed control option available – a herbicide with both soil-active and post-emergent properties.

"We started using PrePass when it first came out. We are targeting pretty much everything weed wise – but especially volunteer canola," explains Roemmel. "I have been using a pre-seed burndown on my cereal acres for about 18 years. If you aren't cultivating, pre-seed burndown is the only way to keep the field clean."

PrePass not only controls all types of volunteer canola, it works on dandelion, wild buckwheat, narrow-leaved hawks-beard, stink weed, cleavers, shepherd's purse and many other grass and broadleaf weeds.

"This past spring we applied PrePass to about 3,800 acres, with good results. When I use PrePass in the spring I don't have to be in such a hurry. I can spray a bit ahead of the air seeder and still get longer control."

PrePass contains SoilActive™ technology that extends broadleaf weed control for 21 days after application. When applied before cereals, it delivers the most reliable, full spectrum weed control possible.

"I love using PrePass; it's the best bang for my buck when it comes to weed control. My wheat and barley have a three week head start before any broadleaf weeds appear."

– Tyson Kasner, Shellbrook, SK

"PrePass is the best one-shot pre-seed mix you can get"

– Murray Hauser, Pilger, SK

"It is one of my favourites because I get 21 days of residual. When it's applied I know I don't have to worry about the volunteer canola."

– Jarrod Kuhn, Acadia Valley, AB

Roemmel's field (above) was seeded to canola in 2012. Despite high volunteer canola pressure the wheat field was clean due to a PrePass application successfully controlling multiple flushes of volunteer canola.

Andrew Dalgarno from Newdale, Manitoba, tried two planters as part of a seeding demo on his farm, but he's not sure planters are the way to go. Over the years he has gone from 9" to 10" to 12" row spacing with successive drills, and has had a "huge increase" in weed pressure. Weed management is a critical part of a profitable canola production system.

All Plant. The Crust Buster has paralink double disc openers, 7.5" or 10" row width and a price tag that comes in at about 50 percent of his Monosem-Morris package. Both the Monosem and Crust Buster tools can be set up to deliver dry or liquid fertilizer in a one-pass system.

"I don't know what the ideal seeding tool for canola would look like."
– Andrew Seibert, John Deere

Two years of planter demos didn't help Andrew Dalgarno make up his mind either. He is not convinced that a row-crop planter is the right direction for canola. "I'm actually trying to move our farm back to narrower row spacing," he says. "We went from nine to ten to twelve inch spacing with successive drills, and we've had a huge increase in weed pressure." He wonders if wider rows is the exact wrong direction for canola.

So, in conclusion, there's no conclusion. Nobody can say, with solid proof, what is the best seeding tool for canola in Western Canada. If you need a conclusion, this is it: Find a drill that works with your unique system. Your "system" includes your wants and needs for canola seed survival, stand establishment, fertilizer application, time management and capital machinery costs, with special consideration for typical moisture conditions, crop residue, soil type and – as Dalgarno has discovered – weed management.

"My opinion is that many people have the right drill and are just not aware of it," Thiberge says. "They just have to pay more attention to the details at seeding." ●

Jay Whetter is editor of Canola Digest. *He also produces Canola Watch, the Canola Council of Canada's free and timely agronomy newsletter. Sign up at www.canolawatch.org.*

FARMERS AS RESEARCHERS

By Carla Pouteau

Meet a few of the growers involved in grower-run research organizations across the Prairies. Find out how direct involvement in research makes them better farmers.

Getting involved in grassroots agriculture research has given Chad Skinner a "whole new perspective on how research works and how information is passed on," he says. Skinner farms in the Qu'Appelle Valley in southern Saskatchewan and is president of the Indian Head Agricultural Research Foundation (IHARF).

A group of Indian Head-area farmers along with researchers from the local Agriculture and Agri-Food Canada (AAFC) Research Station recognized they had the ability to co-operate and felt that research should remain focused on the practical relevance of new technologies. So they formed IHARF, which incorporated in 1993 as a registered charitable organization. Executive manager Danny Petty now oversees about 1,300 acres of IHARF activity on land that is owned, leased or rented.

Having a significant land base "allows us to do commercial crop production which generates income we can reinvest into research," Petty says. Although the majority of IHARF research is conducted on small-plot replicated trials, the larger land base allows for field-scale trials as well.

IHARF is also doing storage research. A current project is comparing continuous aeration to turning on fans only at night to see which is most effective for natural air drying. "Operating aeration fans intermittently is proving to be a more efficient way to dry grain, reducing the number of fan hours by 30 to 40 percent compared to the continuous system," Petty says. The research is preliminary but Skinner says he and other farmers are "very interested in the results and are paying close attention to the project."

Nine people make up IHARF's volunteer board of directors: seven farmers and two from private industry. When asked why he joined the board, Skinner sums it up in one word: networking. His involvement has allowed him to network with very influential people, like Jim Halford, the late AAFC researcher Guy Lafond and other great farmers in the area.

"There are definitely things I do on my farm that I saw at IHARF," Skinner says. "It has also been an opportunity to direct research and have an impact on western Canadian agriculture."

IHARF holds summer tours and winter seminars, and attendees are asked to evaluate presenters and make suggestions for future research. It has an online tool available for members to provide research suggestions. Skinner has also been following the yield-buster project.

"It is modeled after the television show *Myth Busters* and is designed to test the benefit of some of the wonder products and practices being advertised," he says. For example, IHARF has tested seed primers or treatments on a number of crops and at a number of locations. "Although the findings aren't always publishable, they quickly give farmers a general gist or answers to make more informed choices," says Skinner.

Chad Skinner farms in the Qu'Appelle Valley in Saskatchewan. He joined the Indian Head Agricultural Research Foundation (IHARP) for networking and the opportunity to direct important research.

FARMING SMARTER

The ability to network with other researchers and like-minded farmers is also why Craig Walsh got involved with Farming Smarter. Walsh farms near Foremost, Alberta and is vice-president of the research and extension organization in southern Alberta. "The board is a great group of guys and it is always interesting to chat with them," Walsh says. "When I first became involved I realized that research was different and meeting presenters who were from outside the area really made me think about things."

The non-profit Farming Smarter formed when Southern Applied Research Association (SARA) and Southern Alberta Conservation Association (SACA) merged. The main research site is on 200 acres at Lethbridge with another major site east of Medicine Hat.

Farming Smarter's board has 12 directors who develop policy and set strategic and long-term goals. Three key outcomes have been developed: Growing New Ideas, Growing Knowledge, and Growing Stewardship. Ken Coles is Farming Smarter's general manager and he sums up the Growing New Ideas outcome as "innovation through applied agricultural research." Coles decides on research projects, but has input from a targeted group of progressive and innovative farmers and agronomists.

Farming Smarter's research is a combination of small plot and field-scale and involves collaboration with a number of partners, including provincial and federal agriculture departments, private industry, grower groups such as the Canola Council of Canada (CCC), and other applied research organizations. "We basically collaborate with everyone," Coles says. "Sometimes we lead the project and sometimes we follow."

Farming Smarter has a lot happening under the Growing Knowledge banner. There are crop walks, diagnostic schools, a Farming Smarter magazine, newsletter, Farming Smarter television channel, and social media activity on Twitter and Facebook. Coles notes that many

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extension events are "a two-way street where we get feedback from growers about issues they are faced with and new innovations they are interested in or have undertaken."

One recent research project involves investigating the effect of spraying at different times – morning, midday and night – on product efficacy. "Results are preliminary but it appears that time of day can affect herbicide and fungicide efficacy," says Coles. So far, most consistent herbicide results occurred with midday applications and after one year of research, fungicide efficacy appears best with early morning applications.

Craig Walsh farms near Foremost, Alberta, and is vice-president of Farming Smarter.

CROP DIVERSIFICATION CENTRE

The Canada-Manitoba Crop Diversification Centre (CMCDC) was established in 1993 and has research facilities at Carberry, Portage la Prairie and Winkler, Manitoba. The goal of the Centre is to develop agronomic solutions to enhance crop diversification and support sustainable water management. Craig Linde, diversification specialist with Manitoba Agriculture, Food, and Rural Development, is involved with CMCDC. "We collaborate with a number of organizations depending on the situation," says Linde.

Chris McCallister farms in the Portage area and is a current board member with the Crop Research Organization of Portage (CROP), a grower-run organization that collaborates with CMCDC. His father was one of CROP's founding members. When asked why he values being a member of a farmer-directed research organization, McCallister says, "We as farmers need to see independent research conducted in our area."

Access to unbiased research information has helped McCallister select crop varieties best suited to his farm and he has been interested in the results from fungicide and fertility trials "to help sort out yield versus economic benefit," he says.

Chris McCallister farms in the Portage area and became involved with the Crop Research Organization of Portage (CROP) because he wants to see independent research conducted in his local area.

CROP's board of farmers meets a couple of times each year to examine trends and talk about what topics they would like to see researched close to home. In the 2013 growing season, a new trial was conducted at CMCDC Portage called the Ultimate Canola Challenge (UCC), initiated by the CCC. In Manitoba, three groups competed: Team CROP, Team MAFRI and Team CCA (a group of Certified Crop Advisors). The challenge was to see which team could make crop decisions that would generate the highest profit.

"This included choosing the variety, when to seed, and whether we'd swath or straight cut," McCallister says. His Team CROP won by $0.76 per acre. He valued the UCC because it reaffirmed that his canola production practice of "pushing the limits of good fertility with fungicides for disease control combined with good genetics" is profitable, he says. ●

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

FOR MORE ON LOCAL RESEARCH ORGANIZATIONS

Indian Head Agricultural Research Foundation (IHARF) is one of eight grower-led research groups enrolled in Saskatchewan's Agriculture-Applied Research Management (Agri-ARM). They receive limited funding for operational costs and necessary infrastructure to support the delivery of agricultural demonstration and research activities. Learn more at **www.iharf.ca** or **www.agriculture.gov.sk.ca/Agri-ARM**

Farming Smarter is a member of the Agricultural Research and Extension Council of Alberta (ARECA), a provincial association of non-profit producer groups dedicated to enhancing the sustainability and profitability of agriculture in Alberta. Learn more at **www.farmingsmarter.com** or **www.areca.ab.ca**

Canada-Manitoba Crop Diversification Centre (CMCDC) is one of four diversification research organizations in Manitoba. Learn more at **www.gov.mb.ca/agriculture/diversification/index.html** ●

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CROP INSIGHTS

GROW YOUR EXPECTATIONS

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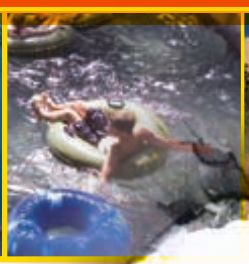


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INSECT MANAGEMENT

By Jay Whetter

In this issue's panel, four canola growers explain how some insect management decisions are easy, and some are not – especially when the pest is new and unfamiliar, like swede midge.

Swede midge larvae inside a canola floret (right) and larval damage to buds (left).

IAN RUSHMER

Codette, Saskatchewan

Ian Rushmer has had swede midge on his northeast Saskatchewan farm the past two years. "The damage was evident this year, but not as evident as last year – assuming I was identifying the same problem," he says. He finds dying flowers and then looks inside to see the larvae.

Rushmer is pretty sure it's swede midge, but he still has a lot of questions: How did they get here? When do they emerge each year and arrive in the field? How do we control them? "It would be good to have some answers before it gets serious," he says.

Rushmer targeted three fields in the most susceptible areas for swede midge, and mixed an insecticide in with his fungicide spray for sclerotinia stem rot. "It went on around 30 percent flower, which is right for sclerotinia but probably on the late side for swede midge," he says. He thinks the benefit was minimal in terms of swede midge protection, but he doesn't really know for sure.

"We need to be educated so we can make a proper spray decision in terms of thresholds and timing. This is a problem we have to jump on right away."

– Ian Rushmer on swede midge

Interestingly, the three fields he sprayed with the fungicide-insecticide mix had much lower bertha armyworm numbers – next to none – while other fields in the immediate area had much higher numbers.

Rushmer is trying to learn as much as he can about swede midge. "Local agronomy consultants have lots of contact with outside people, and I value their comments," he says. Internet searches bring him to Ontario, where swede midge can be a problem on vegetable crops and was very bad on canola in 2013. In Western Canada the level of experience and research is very low.

"We need to be educated so we can make a proper spray decision in terms of thresholds and timing. This is a problem we have to jump on right away," he says.

Rushmer wonders whether genetics may provide the best solution. His area also has higher levels of orange wheat blossom midge, and midge-tolerant wheat varieties "gave me a good level of comfort this year," he says. "Midge-tolerant canola would be helpful because the damage is often done by the time we recognize it."

DOUG HOFFUS

Porcupine Plain, Saskatchewan

The most threatening insect on Doug Hoffus's farm in eastern Saskatchewan is bertha armyworm. "When they're around, they can do so much damage so fast," he says. "I hate them."

Two years ago, Hoffus had one field he needed to spray immediately for bertha armyworm. He was ready to go, but the wind was blowing into a neighbour's yard, so he put it off until the next morning. In that one night, armyworms did 30 to 40 percent damage to a 50-acre section of the crop, he says.

In 2012, Hoffus sprayed about half of his canola acres for bertha armyworm. In 2013, he sprayed all of his canola – 7,500 acres.

He has everyone on his team looking all the time. "Everybody who can tell the difference between a mosquito and a worm is out in the fields checking for berthas," he says. "You can't just look from the roadside, and one guy can't do it all."

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PHOTO: Julie Soroka, AAFC

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Ian Rushmer

Doug Hoffus

Sean Baskier

Hoffus will often make the spray decision before bertha armyworm numbers reach thresholds. "With the acres we need to cover, if we waited until all fields were at thresholds, we'd have significant losses by the time we got to them all," he says. "So we look for feeding, we look at the numbers of immature berthas lower in the canopy, and if numbers are building, we'll spray even if the thresholds have not been reached yet."

He used the new product Coragen on about 60 percent of his acres in 2013. "We've been looking for a residual product like Coragen for a number of years," he says. It gets the larger worms feeding at the top of the canopy, and it will still be effective when the young green worms have grown and can do damage, he says.

Hoffus has also noticed that when bertha armyworm populations are high, the threat seems to hang on for longer. In his area this year, bertha armyworms were still at numbers capable of serious economic damage eight weeks after adult populations peaked. Just because the first worms have finished feeding and are starting to pupate, doesn't mean the threat is over, he says.

SEAN BASKIER

Swan River, Manitoba

Baskier has had to spray canola for flea beetles, diamondback moth, bertha armyworm and cutworms in past years, but he didn't have to spray any insects in 2013.

Flea beetles tend to be his most common and most dangerous insect. "Rotations are so tight that I expect to have flea beetle problems every year," he says. "I'm anxious about canola getting out of the ground, so I'm out every few days at the beginning of the season."

Baskier goes out in the morning when flea beetles tend to be more active. He checks plant damage to see if they're taking little nips, feeding on stems or chewing off whole leaves. He looks to see whether they're crucifer or striped species. Seed treatments are more effective on crucifer, so if crucifers are dominant at the time, he may be less likely to spray. He also drives across the whole field. "Damage from flea beetles and cutworms can be spotty, so with my side by side, I burn across the field and check a lot of locations," he says.

Finally, he assesses weather conditions and crop advancement. With cool wet starts to the growing season, plants emerge slowly and seed treatment protection might not be there for long enough. "If canola is not growing fast, I may go back every day or two to make sure it's okay," he says.

When damage is borderline, and a spray may be needed, Baskier will get advice from the local Cargill agrologist and ask his Agri-Trend agronomist to come out to the field with him.

ANDRÉ THERRIAULT

Donnelly, Alberta

Flea beetles are the major insect pest for André Therriault, his brother and their sons, who farm together in the Peace River region. "When we seed canola on canola, we know there will

"Everybody who can tell the difference between a mosquito and a worm is out in the fields checking for berthas. You can't just look from the roadside, and one guy can't do it all."

– Doug Hoffus

André Therriault

be more flea beetles," he says. So they tank mix an insecticide with their first application of glyphosate on Roundup Ready canola.

In the past they waited to assess the level of damage before making the decision to spray for flea beetles. But with 5,000 acres of canola, they were having too much trouble scouting and then spraying on time. Now, they spray all canola seeded into canola stubble. "In two days, we can see a big difference in the level of flea beetle damage," he says. "By spraying, we give our canola on canola an extra boost. It gives more plants a chance to emerge."

For canola fields that are on cereal stubble, Therriault will scout to see if they need flea beetle protection as well. "We don't want to spray them unless we have to because insecticide always kills the good bugs, too," he says.

The Therriaults also sometimes see lygus bugs at harvest time and have had to spray for bertha armyworm in past years. "We check off and on for insects throughout the season, and if our neighbours are spraying, we'll check more often," he says. "Some people sprayed for lygus in 2013, but we didn't feel it was worth it."

"We have to protect our canola crop," he says. "It's what pays the bills." ●

Jay Whetter is editor of Canola Digest. *He also produces Canola Watch, the Canola Council of Canada's free and timely agronomy newsletter. Sign up at www.canolawatch.org.*

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DIAGNOSTIC DILEMMAS

By Jay Whetter

Cutworms can do a lot of damage if left untreated. But what if feeding looks like cutworm damage, yet no cutworms can be found? These dilemmas demonstrate two other possibilities and why spraying for phantom cutworms can be a waste of time and money.

GROWER GETS SLUGGED

A canola grower noticed some holes in his canola leaves and called his Canola Council of Canada (CCC) agronomy specialist. The grower was already worried about the crop because heavy cereal residue compromised seed placement and left him with a thin stand. The holes looked like cutworm feeding, but the grower couldn't find any cutworms. The CCC agronomist visited the field and found definite chew holes. He crawled around for 20 to 30 minutes, digging around patch after patch. He did not find cutworms or anything else. Then it started to rain.

The agronomist, about to give up, found a "blob of round goo" on one leaf. Then the "goo" stretched and stuck out two antennae. He found another blob nearby. They were small slugs, and he thought he finally might have an answer. However, two slugs could not account for the amount of damage seen. Later, when the agronomist mentioned the slugs to others, they were skeptical because the field was in one of the driest areas of the province.

A week later, the CCC agronomist was in the area, so he returned to the field. It was evening and cooler than the heat of day. He found many more slugs – enough to support his earlier suspicions.

The agronomist learned a few things that day. First, he was reminded that scouting when it's convenient might not provide a complete impression of what's going on in the field. Scouting should ideally occur at various times of day. Second, excessive residue can make a field more hospitable to slugs, even if regional conditions seem too dry for them. Third, while the slugs were doing some damage, the real issue in this field was surface residue and the challenge it presented for uniform seed placement. Take care to identify the main yield-limiting factors while also looking for secondary factors that may require management to protect the stand.

Management depends on identification. Spraying for what seems like cutworm damage won't provide any benefit if the damage is from slugs. Slugs are rarely worth controlling, mostly because damage is so rare and spotty and partly because the product available has a high price per acre.

In this case, the grower didn't spray the slugs. He was happy to know what was going on, and plans to address residue distribution and improve his seed placement.

Heavy residue resulted in reduced seed survival in a field. It also created a good environment for slugs.

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CAN WE BLAME THE MAGGOTS?

A canola field at the four- to six-leaf stage had a few random plants wilting and clearly struggling to survive. The grower called a CCC agronomy specialist to take a look. The agronomist asked the necessary questions about fertilizer placement, seed treatment, seed depth, herbicide history and crop rotation. The field was seeded to canola in 2012, worked in the fall, and seeded to canola in 2013. Canola on canola will increase the risk for blackleg, and while walking the field, the agronomist found that most of the stubble pieces from 2012 were covered in blackleg picnidia.

However, the grower thought cutworms were to blame because a few plants had "bites" missing from their roots and cutworms had been reported in the area. The CCC agronomist and the grower dug around and found a couple of wireworms but no cutworms. Wireworms typically have a minimal effect on canola, and sprays don't work on wireworms. So either way, there was nothing the grower could do.

The grower called back a few weeks later. The crop was at the bolting to early flowering stage, and more plants were wilting. Some were falling over and dying. CCC agronomists and Alberta Agriculture's oilseed specialist Murray Hartman happened to be in the area for an event, so they all went to the field.

There were wilted plants throughout the field, accounting for perhaps one or two percent of plants. They dug up wilted plants to check for root rots, insect damage, clubroot galls, blackleg or whatever else. Every wilted plant was rotted just below the soil surface and in many cases root maggots were feeding within the brown, rotted flesh.

Blackleg severity was minimal, and clubroot galls were not found. Something else was at work. The agronomists ruled out fusarium foot rot, which produces superficial tan brown lesions with concentric markings. Damage to the dying plants looked more like brown girdling root rot (BGRR), a rhizoctonia disease that causes light brown lesions on the canola tap root. Severe BGRR can girdle and pinch-off the root, which had happened with these plants. The agronomists sent samples for testing just to make sure. They came back positive for rhizoctonia and it was agreed that, since the lesions were a darker brown and relatively firm to the touch, it was likely a rhizoctonia root rot.

Top photo: A field of canola on canola had one to two percent of plants wilting and dying because of root rot. Tests confirmed it as rhizoctonia. Bottom photo: Many damaged roots in the rhizoctonia-infected field also had root maggots. Root maggot counts can be much higher in fields where canola is grown on canola stubble, and maggots are often found together with root rots.

There are no immediate management options for rhizoctonia infection. Seed treatment protects against early season infection, and a longer break between canola crops can reduce build up. Seeding too deep or into cool soils can encourage rhizoctonia root rot, but this field was seeded shallow and into relatively warm soil.

Root maggots in many of the diseased roots presented an interesting twist. Root maggot feeding could have created openings for rhizoctonia infection, making the symptoms much worse. Research shows a definite reduction in root maggot damage with just a one-year break between canola crops.

Interestingly, the agronomists had a chance to visit this field again at swathing time. One to two percent of the plants were dead and completely colonized by a dark green-black mould. Samples of mouldy plants were taken to Alberta Agriculture pathologist Ron Howard, who confirmed that the canola stems were colonized with "weed moulds," mostly *Cladosporium*. This fungus is not an aggressive foliar pathogen of canola per se, but it can rapidly colonize dead and dying plant tissue as a saprophyte.

If the grower had called at swathing and not earlier in the season, the agronomists may not have been able to identify the true problem. The moulds had camouflaged symptoms that caused the plants to die in the first place. This dilemma emphasizes the importance of early diagnosis, an open mind, the possible compounding effects of tight canola rotations (more root maggots and more disease), and the value of a lab test to confirm which pathogens are at work. ●

Jay Whetter is editor of Canola Digest. *He also produces Canola Watch, the Canola Council of Canada's free and timely agronomy newsletter. Sign up at www.canolawatch.org.*

This is the third of a four-part series on CARP highlights.

MAXIMIZING PHOSPHORUS EFFICIENCY

By Donna Fleury

Canola crop production is a priority for the grower-funded Canola Agronomic Research Program. This article highlights studies into new slow-release phosphorus fertilizer options, and crop rotation as it relates to long-term sustainability.

Researchers at the University of Manitoba are testing struvite, extracted from liquid hog manure, as a phosphate fertilizer source. Struvite granules have a low risk of salt toxicity if applied in the seed row of sensitive crops such as canola.

PHOTO: Francis Zvomuya, University of Manitoba

The Canola Agronomic Research Program (CARP) is funded by growers from Alberta, Saskatchewan and Manitoba to support projects designed to improve canola production and grower profitability and the future of the industry. CARP has been supporting research for almost 25 years across Western Canada. Here are highlights from two recent studies on canola crop nutrition and sustainability.

TESTING NEW PHOSPHATE SOURCES

Phosphorus (P) is an important nutrient for canola production, but excess P in manure is a management challenge and environmental concern for livestock producers. Preliminary results from a recent project at the University of Manitoba show potential solutions that can help both canola growers and livestock producers. The project is extracting struvite from liquid swine manure and testing it as a P fertilizer. Trials show that canola fertilized with struvite yields at least as well as canola fertilized with commercial P products.

Francis Zvomuya and Don Flaten in the Soil Science Department and Nazim Cicek in the Department of Biosystems Engineering, all at the University of Manitoba, are experimenting with the potential use of struvite as a slow-release source of P fertilizer. Struvite has a low risk of salt toxicity if applied in the seed row of sensitive crops such as canola. It contains ammonium-N and magnesium (Mg) in addition to P, and is extracted from the liquid fraction of hog manure using a low-cost, modified waste treatment process that Cicek developed.

Greenhouse canola experiments compared P uptake and use efficiency and seed and seedling toxicity for struvite, monoammonium phosphate (MAP) and slow release polymer-coated monoammonium phosphate (PCMAP). Canola was grown in rotation with wheat to evaluate the residual P effects on each crop at different stages in the rotation.

"We know that canola requires a lot of P for optimum production. However, growers are currently limited to about 20 lb./ac. in the seed row due to concerns of seedling toxicity," explains Zvomuya. "Our objective was to determine if the slow release of P and NH_4 from struvite and PCMAP would allow the application of higher rates than are possible with MAP, with minimal toxicity to seeds and seedlings and improved efficiency of fertilizer P."

The study included three rates of P – 0, 25 and 50 pounds per acre – placed either in the seed row or as a side-band 1" below and beside the seed row in the first crop.

Canola biomass was harvested at early to mid-flowering. "Previous research showed that the level of biomass or dry matter of the canola crop at flowering is positively related to final grain yield, so we used that as a way to project final yields," explains Zvomuya. "We also

conducted seedling emergence counts to evaluate seedling toxicity. The experiments were equivalent to three crop cycles, so we could also measure the levels of residual P in the second and third crop cycles."

Preliminary results are very promising. "Although we are still finalizing the data analysis, early results are showing that struvite was at least as good as commercial fertilizers in yield, with low seedling toxicity effects at both the regular and high rate of P," says Zvomuya. In fact, he says struvite appeared to give greater yield and P uptake than MAP and PCMAP in the third cycle crops.

"We think that fertilizers such as struvite may present viable options for improving P-use efficiency, allowing growers to apply higher P rates and therefore realize higher yields and improved profitability," he says. "Additionally, higher seed germination and higher seedling emergence and survival from the use of slow-release P fertilizers, which are expected under uncontrolled field conditions, will improve the return from canola seed."

Zvomuya would like to move to the next phase and conduct trials in field plots to confirm the greenhouse results. The project was funded by CARP, Manitoba Pork Council and Agrium.

ROTATION AND RISK MITIGATION

Growing canola in tighter rotations increases risks and can dramatically decrease yields. In a recent research project, which originated as an Alberta Crop Industry Development Fund (ACIDF) project with CARP support, researchers found that production and economic risks are higher in continuous canola or canola in a two-year rotation, depending on the variety and location.

Neil Harker, a research scientist with Agriculture and Agri-Food Canada (AAFC) in Lacombe, Alberta, led two six-year studies in Alberta, Saskatchewan and Manitoba to determine the agronomic and economic implications of growing canola in tight rotations. Researchers also wanted to determine crop sequence effects on canola and implications for other factors such as diseases, weed population shifts and insect pests.

The first "all phases rotation" study, which started in 2008 at five sites in Alberta and Saskatchewan, compared continuous canola to canola grown every second or third year in rotation with wheat or barley and pea crops. "The preliminary results, which we expect will be confirmed after the 2013 data is included, show that yields decreased as any of the rotations moved to a more continuous type of canola system," Harker says. "In particular, by the end of three years of continuous canola, the yield decreases were quite dramatic."

The second major experiment, a risk mitigation study, looked at factors that could reduce the risk of growing canola in tight rotations. The experiment was conducted at the same five sites plus an additional one in Manitoba.

"We compared canola-canola-wheat, canola-wheat-wheat, and canola-pea-wheat rotations to continuous canola, but in continuous canola we planted different herbicide-tolerant systems or a mix of seed sources from the same herbicide tolerant system," explains Harker. "The expectation was that by rotating herbicide tolerant systems, or by combining different sources of the same herbicide-tolerant system, there would be different disease resistance backgrounds that could help mitigate the risk of disease."

"Early results are showing that struvite was at least as good as commercial fertilizers in yield, with low seedling toxicity effects at both the regular and high rate of P."

– Francis Zvomuya

Preliminary results show no substantial benefit to either of those strategies. "We found almost the same reduction in yield from growing continuous canola whether we mixed cultivars or rotated herbicide-tolerant systems every year," says Harker.

Key management takeaways are that blackleg incidence was lower as long as there was a break between canola crops, and root maggot damage was lower with a minimum two-year break between canola crops. Harker expects that final results, which will be available in 2014, will confirm the preliminary findings. ●

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

The phosphorus study compared canola results with struvite (right) and MAP (left) as well as polymer-coated MAP at three rates – 0, 25 and 50 pounds of phosphate per acre – placed either in the seed row or as a side-band.

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CANOLAMAZING MEAL

By Treena Hein

The Canola Council of Canada's Canolamazing campaign demonstrates how canola meal offers livestock a more balanced and higher-quality amino acid profile than soybean meal.

The Canola Council of Canada (CCC) has just launched an exciting canola meal campaign aimed primarily at U.S. dairy producers and backed by solid scientific research.

The U.S. has more than nine million dairy cows, and each can consume close to two kilograms of a protein source per day. For a long time, soybean meal has dominated the protein feed market, but that is hopefully about to change.

"Canola meal is presently under-represented in the dairy industry. This campaign is all about boosting its perceived value through education – and through offering those who formulate rations the chance to explore the science," says Bruce Jowett, CCC's vice president of market development. "Canola meal is an incredible feed that provides dairy cows with more usable protein than any other plant-based feed source available, and we are getting that message out there."

Indeed, canola meal boasts 53 percent rumen-undegradable or "bypass" protein compared to only 43 percent for soybean meal. Because of this and other outstanding canola meal characteristics, savvy dairy producers who add canola meal to their protein mix are seeing returns that surpass all expectations.

The CCC wants to add significantly to canola meal use among dairy producers, especially in the U.S. The CCC's Canolamazing.com campaign includes a blog, videos, calculator analysis tool and feeding guide. It provides science-based resources for frontline nutritionists, feed company representatives and veterinarians – people who balance rations and make feed purchasing decisions for the vast majority of American dairy farmers.

The Advanced Canola Meal Calculator provides transparent comparisons of price, protein content and other factors for canola meal and more than a dozen other protein sources.

To help these advisors determine their best opportunities to use canola meal, the Advanced Canola Meal Calculator provides transparent comparisons of price, protein content and other factors for canola meal and more than a dozen other protein sources. Results can be customized for cost per unit of protein, cost relative to soybean meal or cost on the basis of metabolizable protein.

The calculator and other resources are based on in-depth studies recently conducted at several locations in the U.S. and Canada. Research funding came from the CCC's Science Cluster initiative, with support from Agriculture and Agri-Food Canada (AAFC). Results were presented during the summer of 2013 at the premier conference for dairy nutrition research – the American Dairy Science Association's annual meeting.

"Industry-accepted research was absolutely integral to the campaign,"

"Canola meal is presently under-represented in the dairy industry, and this campaign is all about boosting its perceived value through education – and through offering those who formulate rations the chance to explore the science."

– Bruce Jowett

says Lana Olson, who led the Canolamazing development team at Broadhead, a marketing communications firm. "It provided the tools and resources with strong credibility, which is very important."

MEAL RESEARCH IN-DEPTH

There has been a great need for intense research to fully evaluate canola meal for the dairy sector, says Essi Evans, a nutritionist who oversaw the CCC studies. Understanding this need begins with the basics of how dairy rations are formulated.

"Those in the industry know that forages make up most of the dairy cow ration," Evans explains. "These forages are analysed for their nutritional value, and supplements are developed to complement them. However, those who balance dairy rations have been obtaining the nutritive values for protein and energy from outdated tables or formulation programs."

Indeed, a survey conducted in 2011 confirmed that many nutritionists viewed existing values for canola meal to be inaccurate, and that the results they were seeing from using canola meal were consistently better than expected. This was because the canola industry had been aggressively developing better seed varieties and many crushing facilities had also been upgraded, allowing them to provide a better quality meal. Evans says it was therefore the perfect time to do the research to provide the dairy industry with updated and extremely accurate nutritional values for canola meal.

Glen Broderick evaluated canola meal variability at the Dairy Forage Research Center in Wisconsin. The type of equipment and techniques used to extract canola oil can greatly impact the value of canola meal protein for dairy cows. Broderick evaluated the optimal ways to produce meal. He and his team also looked at how proteins degrade in the rumen, and they are currently re-evaluating the use of soluble protein in ration formulation.

Hélène Lapierre with AAFC in Sherbrooke, Quebec analyzed older data, and found that canola had an advantage over soybean meal when protein levels were equal. In studies from long ago, cows produced significantly more milk when fed canola meal over soybean meal, and when canola was used in place of other vegetable proteins, both milk production and milk protein increased.

"The second study conducted by Lapierre's team has shown that canola meal does not degrade in the rumen as quickly as soybean meal or distillers' grain," says Evans. "The group is working to link these two studies, which will result in even more accurate and improved tabular values for canola meal."

University of Saskatchewan researcher Tim Mutsvangwa has been evaluating diets with varying combinations of canola meal and wheat distillers' grain. He has determined that the two proteins work well together, and he is hoping to provide more information on limiting amino acids in the protein. A series of large field studies comparing canola meal and distillers' grains, led by Canadian ex-pat Peter Robinson, is also underway in California.

"Corn Distillers' grains are often available at a low cost, but rarely support high levels of milk production," Evans explains. "Robinson's research has found that when fed together, canola meal protein complements the protein in distillers' grain very well."

Further research will work to divulge the optimum ratio of distillers' grain and canola meal to provide the highest level of milk production, milk protein and profitability, but this research has already led to greater canola use in California. This same premise is being investigated at South Dakota State University. The research team, led by Ken Kalscheur, is also looking at evaluating canola with varying levels of forage to optimize total feeding costs.

These research projects have determined the extent to which canola meal offers a more balanced and higher-quality amino acid profile than soybean meal, notes Olson. Research has also definitively shown that canola meal is 16 percent more efficient than soybean meal at getting protein past the rumen, where it can be absorbed and used to produce milk. Olson notes that 24 research trials have now been completed that all show milk production increases by close to a whopping one kilogram per day when canola meal is included in the cows' rations.

"The findings of many completed studies clearly show canola meal to be a superior dairy ration ingredient," says Olson. "on-going studies will continue to add to our understanding of how to optimize its use." ●

Treena Hein is an award-winning science writer based in eastern Ontario.

"The findings of many completed studies clearly show canola meal to be a superior dairy ration ingredient, and on-going studies will continue to add to our understanding of how to optimize its use."

– Lana Olson

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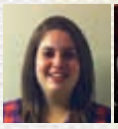
Each of these students has received a $1,500 scholarship to help fund their post-secondary education. If you are graduating from high school in 2014 and have plans to pursue post-secondary studies in agriculture, you can apply for a 2014 Monsanto Fund Opportunity Scholarship. Watch for details in February 2014 on how to apply or visit us online at www.monsanto.ca.

BRITISH COLUMBIA



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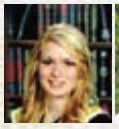
Harrison Mills, BC

Brianna Elliot
Rock Creek, BC

ALBERTA

Alexandra Hayes
Canyon, BC

Erin Anderson
Scandia, AB



Shaylene Braun
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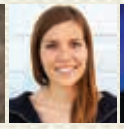
Gerené Cole
Coronation, AB

Colby Harty
Etzikom, AB



Larissa Lupul
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Jade Marshall
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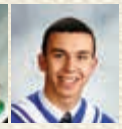
Kathleen Murphy
Lacombe, AB



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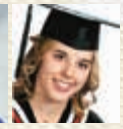

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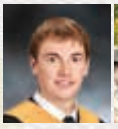
SASKATCHEWAN



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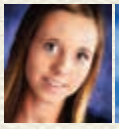
Drumheller, AB

Seanna Pashulka
St. Paul, AB

Laci Schmidt
Wetaskiwin, AB

Bayley Blackwell
Dinsmore, SK



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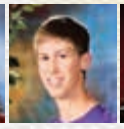
Bethany Harland
Frenchman Butte, SK

Anique Josuttes
Paradise Hill, SK



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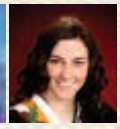

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Mackenzie Mueller
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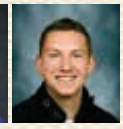
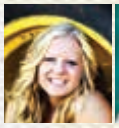


Jonathan Neigum
Unity, SK

MANITOBA

Anne Nerbas
Waseca, SK

Allie Noble
Mossbank, SK



Halayna Tetreault
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Jacqueline Toews
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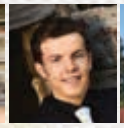
Lindsay Wells
Glaslyn, SK

Bailey Wilson
Tugaske, SK

Emily Boonstra
Marquette, MB



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Rigby DeVos
Fork River, MB

Carlene Dmytriw
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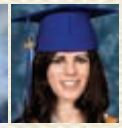

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Beatriz Montenegro
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Erik Nielsen
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Alanna Orsak
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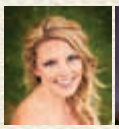

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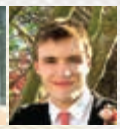

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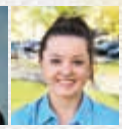

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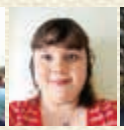

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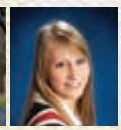

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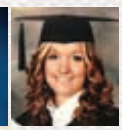

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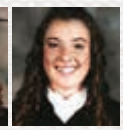

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Canton-de-Hatley, QC

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Olivier Marquis
St-Alexandre-de-Kam, QC

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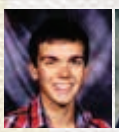

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SMART AND STABLE PPPs

By Barb Chabih

Canola research in Canada is driven largely by public-private partnerships (PPPs), a combination of government and private sector funding that promotes targeted investments based on market drive.

What the world expects of agriculture is changing. Not only are farmers called on to feed a growing population of over seven billion, they are now faced with meeting the demands for more variety, convenience and non-food uses. The world is also looking to agriculture for the solution to many global issues such as health and wellness concerns, environmental sustainability, quality and safety assurance, bioproducts and sources of energy.

In the late 1990s, the balance of trade had shifted towards a focus on value-added processed goods to meet these evolving global needs. Most recently, export opportunity is strong for both value-added and primary products. With an abundance of arable land, renewable resources and well-established markets, Canada is poised for both future competitiveness in the global market and for economic growth.

Policymakers worldwide recognize the critical role innovation plays in the sustainability of the agricultural sector. Research investment pays off in productivity, and future growth requires increased innovation investment right now. This is evident in the dollars spent on research and development, with annual global spending near $40 billion, comprising approximately 80 percent public and 20 percent private funds.

Canada is a world leader in knowledge-based innovation with a complex agricultural research environment of public sector, private firms, grower groups and higher education. The costs of research and development continue to increase and are compounded by the increasing pressures to meet changing consumer demands. Now more than ever, there is a need to strengthen collabora-tion for the mutual benefit of the entire industry. Investments must be smarter and targeted based on market drive.

Every research study involves a measure of lead time from project inception to the adoption of a new crop variety, technology or practice. A reliable funding structure is critical to project success and to practical application of the findings. Private investments tend to be shorter-term with a narrower focus, often based on a specific product, project or outcome. Consistent government support through public-private partnerships has proven to create more stability.

These partnerships extend beyond joint funding to fulfill the priorities of both sectors with an added investment and collaboration of knowledge, resources, expertise and technology. Government and private industry are working towards a common goal that can be accomplished more efficiently and effectively through partnership. Together, they are better equipped to navigate current challenges and opportunities in meeting the demands of Canada's global customers.

At the Canola Council of Canada's 2013 convention in Vancouver, Greg Meredith, assistant deputy minister for strategic policy at Agriculture and Agri-Food Canada, shared a government perspective. "As Canada is one of the few net food exporting countries in the world," said Meredith, "there's an enormous opportunity to contribute to global food security by investing in increased yields, disease resistance, new crops and new opportunities for consumers around the world."

continued on page 33

"As Canada is one of the few net food exporting countries in the world, there's an enormous opportunity to contribute to global food security by investing in increased yields, disease resistance, new crops and new opportunities for consumers around the world."

— Greg Meredith

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Meredith also spoke of the federal government's ability to fill more than a strictly financial role by creating the right conditions for private-sector investment. This includes a regulatory environment conducive to research and development, incentives that reward innovation, and a supportive legal and policy framework. These measures ensure a competitive edge over other global investment opportunities when competing for private-sector dollars.

CCC AND PPPS

The Canola Council of Canada is committed to agricultural research and development and to communicating research findings so benefits can be realized by producers on their farms and across the industry. Even incremental savings and returns have a significant impact when compounded by the 20 million acres of Western Canadian canola production. This commitment is backed by industry and government support.

In July 2013, Gerry Ritz, minister of Agriculture and Agri-Food Canada, announced a $15 million investment in canola research focused on enhancing the sustainability and effectiveness of the canola industry. Combined with industry and check-off investments, a total of over $25 million is committed to canola research over the next five years. Support for this research comes from the federal government's Growing Forward 2 AgriInnovation Program and builds on an earlier $14.5 million investment under Growing Forward.

Canadian farms are engines for economic growth, and canola is now their top revenue commodity.

"Canada's oilseed industry continues to be an important economic driver and research and development in this area is crucial to keeping the sector ahead of the curve," said Minister Ritz. "This project will create new opportunities for growers by helping to increase their productivity and profitability, while expanding their market opportunities."

CCC President Patti Miller says public and private collaboration will address key research challenges with minimal duplication, which is a smart step in maximizing research dollars.

Through the strong partnerships in place between industry, academia and Agriculture and Agri-Food Canada, research will be focused around clear, strategic themes. A top priority is the transfer of all research findings to the producers and industry stakeholders who can apply these innovations to improve profitability.

"This research investment will help us make quantum leaps in sustainable production," said Canola Council of Canada president Patti Miller. "The collaborative structure and industry relationships will address key research challenges with minimal duplication, which is a smart step in maximizing research dollars. And, with the continued commitment of the federal government to our industry, we can continue to transform market potential into jobs and wealth for Canadians." ●

Barb Chabih is communications program coordinator for the Canola Council of Canada's Science Hub.

MORE ACCESS TO EUROPE

By Brian Innes

The new Comprehensive Economic and Trade Agreement (CETA) with Europe will improve market access for Canadian canola.

On October 18, the Prime Minister of Canada and the President of the European Commission announced agreement in principle to the terms of the Comprehensive Economic and Trade Agreement (CETA). The new deal is, by all accounts, Canada's most significant trade agreement since the North American Free Trade deal signed in 1994. It's also big news for the canola industry.

"Canola has become Canada's most valuable crop through trade," says Terry Youzwa, Canola Council of Canada (CCC) chairman and Nipawin, Saskatchewan grower. "The CETA will help improve market access for for canola, which ultimately means farmers can earn more for canola from the international marketplace."

Europe has been a significant market for canola exports, worth more than $670 million from 2008 to 2012. The majority of Canadian canola exported to Europe is used for biodiesel. The CETA will eliminate tariffs and help to eliminate non-tariff barriers, allowing canola exports to Europe to increase.

"When our agreement with the European Union is fully implemented, over 95 percent of tariffs on Canada's high-quality agricultural products will be eliminated," says Gerry Ritz, minister of Agriculture and Agri-Food Canada. This includes eliminating tariffs on canola oil and ensuring duty-free access for canola and canola products to Europe.

"We've been working closely with the Government of Canada and our negotiators for four years on this agreement," says Jim Everson, vice president of government relations for the CCC. "We strongly support the Government of Canada's trade negotiation agenda and this agreement in principle."

Now that an agreement in principle has been reached, the wording needs to be completed, translated, and formally signed before the agreement comes into force sometime in 2015.

WHAT'S IN THE DEAL FOR CANOLA?

Tariff elimination: Once the agreement is implemented, tariffs on canola oil will be eliminated.

Cooperation to reduce biotechnology-related barriers to trade: The agreement strengthens a working group to help improve cooperation between Canadian and European regulators so that regulations around biotechnology do not serve as trade barriers. The working group will promote science-based approval processes, cooperate on low-level presence policies, and minimize the negative trade impacts of regulatory practices.

Commitment to timely trait approvals: In parallel to the agreement, the E.U. committed to efficient and timely processing of new biotech canola trait applications.

HOW COULD THIS IMPROVE CANOLA TRADE?

Tariffs: The industry estimates that eliminating tariffs on canola oil will allow annual canola oil sales to the E.U. to increase by up to $90 million per year – a doubling of current exports. Canola oil is the preferred feedstock for biodiesel production, reducing greenhouse gas emissions by 90 percent compared to conventional diesel.

Biotechnology: Currently, the regulatory system for biotechnology in the E.U. creates uncertainty due to the potential for trade disruptions. The CETA marks the first time that biotechnology has been included in a trade agreement. Discussions in the working group on low-level presence policies will help to reduce the potential for low levels of approved biotech traits to cause trade disruption. This could significantly reduce risk for exporters.

Timely trait approvals: Commitment by the E.U. to discuss science-based regulation of biotechnology and to facilitate the timely approval of new canola traits will help growers have quicker access to new technology and create more certainty for seed developers. In accordance with CCC policy, traits are not introduced into Canada until they are approved in major export markets. Provisions in the agreement for a working group focused on science-based approval processes and commitments for timely processing of new trait applications will help get new canola traits to producers in a timelier manner. ●

Brian Innes is market access manager with the Canola Council of Canada in Ottawa.

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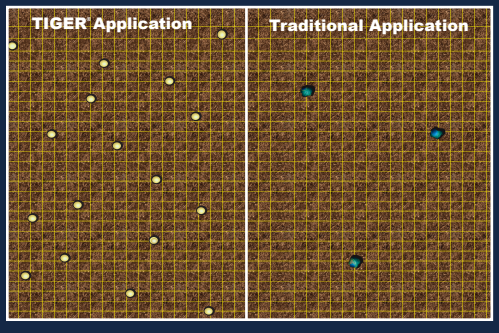

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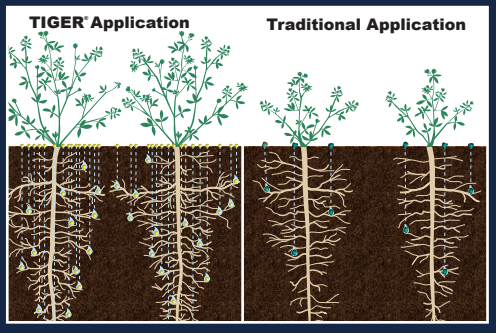

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BIODIESEL REACHES MILESTONE

By Steve Pratte

Western Canada has reached biodiesel production capacity goals while a new Biodiesel Working Group takes on palm-based competition.

Western Canada's biodiesel industry reached a critical milestone. With two new biodiesel plants on stream in 2013, the industry now has capacity to produce 100 percent of Western Canada's biodiesel blending requirements. This achievement came about as a result of a focused effort to advocate for federal and provincial mandates on renewable content in biodiesel and attract investment in processing capacity.

These are exciting times for Western Canadian biodiesel, but warning bells are sounding as substitute products such as off-shore, palm-based feedstocks are finding their way into Canada's biodiesel blending mandate. A new canola industry Biodiesel Working Group is focused on making canola biodiesel a priority for blenders in Western Canada.

PRODUCTION CAPACITY

The commissioning of two new biodiesel production plants significantly altered the production landscape in 2013. In October, Kyoto Fuels Corporation in Lethbridge, Alberta commissioned its 66-million-litre per year plant, and in November the Northern Biodiesel LP (ADM) plant located in Lloydminster, Alberta began production. ADM's plant, at full operation, has a 265-million-litre annual capacity. In conjunction with two existing plants, Milligan Biofuels and Consolidated Biofuels, Western Canada's total biodiesel production capacity now stands at approximately 360 million litres per year, slightly exceeding the current mandate of 350 million litres.

Canola farmers are extremely excited about the domestic market potential these new plants create, says Brian Chorney, Canola Council of Canada (CCC) director and East Selkirk, Manitoba grower. "The new canola-fed production coming on line will help ensure the current and hopefully increased future demand is filled with domestically produced canola, benefiting farmers and local economies."

WESTERN RENEWABLE FUEL STANDARDS

All four western provinces have established renewable fuel standards (RFS). These standards specify a percentage of the total volume of diesel used in the province that must be biodiesel. Although provincial regulations differ (British Columbia is at four percent and the other three provinces are at two percent), the objective is largely the same: reduce greenhouse gas (GHG) emissions from the use of fuels in the transportation sector.

RFS mandates act as a signal for biodiesel producers to achieve a specified level of production. With the two new plants in Alberta, the level of demand created by the current western provincial RFS is now approximately equal to the production capacity available in Western Canada.

POLICY OBJECTIVES

For government, the RFS is primarily an environmental policy. Secondary spinoffs include rural economic development and the creation of sustainable markets for domestic crops, including canola. However, these objectives are being challenged. Data show that, increasingly, palm-based biodiesel is being used to fulfill our domestic renewable fuels standards at the expense of canola biodiesel. But palm-based biodiesel provides little environmental benefit compared to conventional diesel and none of the positive domestic economic spinoffs. As a result, the environmental policy agenda behind the RFS is not being fulfilled. The canola industry is working to reverse this trend.

In 2013, the Biodiesel Working Group with representation from Alberta Canola Producers Commission, SaskCanola, Manitoba Canola Growers Association, Canola Council of Canada and the Canadian Canola Growers Association was established to develop a strategy to advocate for the increased use of canola biodiesel. This strategy focuses on the provincial RFS and advocating for their incremental increase as well as establishing environmental criteria. It is estimated that, through an incremental increase in RFS levels and the partial recovery in market share of canola as a feedstock, over one million tonnes of seed could be sustainably used in Western Canada in the coming years. In 2014, the working group will continue its work, as canola-based biodiesel is good for the environment, good for farmers and good for the economy.

Steve Pratte is a policy analyst with the Canadian Canola Growers Association.

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ABreport

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Learn how to rejuvenate your farm business

Join leading experts as they discuss the future of our economy, business taxation strategies, and unique producer business structures. The goal is not only to discuss the issues, but to provide actual recommendations and insights that can be implemented on your farm.

Speakers include:

- Merle Good, Farm Management Consultant
- Greg Gartner, Principal, Moodys Gartner Tax Law LLP
- Aaron Goertzen, Economist, BMO Capital Markets
- Dean Gallimore, Managing Partner, KPMG

Dates and Locations:

- Tuesday, March 11 – Lethbridge
- Wednesday, March 12 – Nisku
- Thursday, March 13 – Grande Prairie

For complete details and to register visit **www.albertacanola.com** ●

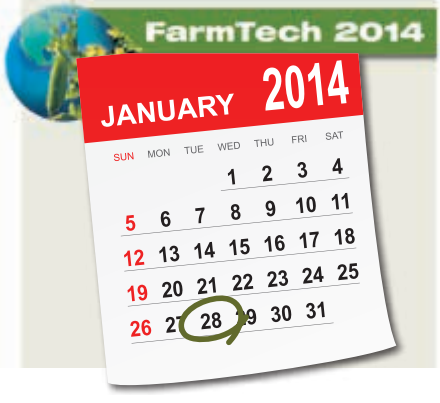
ALBERTA Canola PRODUCERS COMMISSION

ANNUAL GENERAL MEETING

Tuesday, January 28, 2014

2:45 pm

Edmonton EXPO Centre at Northlands



CHOPS & CROPS... AN ALBERTA GROWN RECEPTION

Chops & Crops is an annual Alberta-grown reception that reflects the synergy of partnerships between livestock and crops; industry and government; and producers and consumers. This is an annual lobby event that is founded on the collaborative effort of nine livestock and crop commodity organizations representing pork, lamb, canola, wheat, barley, pulses, oats, sugar beets and potatoes. Many of the challenges faced by one producer organization are often echoed in others, making alliances all the more critical to engage the government. Together, we promote our shared interests to the government on behalf of all Alberta farmers.

Primary agriculture contributes more than $5.5 billion to Alberta's GDP and employs over 73,000 Albertans in the agri-food sector. Our industry provides safe nutritious food for promoting a healthy lifestyle and also fulfills a growing global need. The challenges are significant, but the rewards are substantial. The combined forces of government and industry are necessary to ensure our farmers remain competitive and sustainable in a global marketplace. ●

Chops & Crops
An Alberta Grown Reception

THESE TAXING TIMES

By Merle Good

Some of you – or at least your parents – will recognize this title. It was first used by the late Bill Wallace, a University of Saskatoon business professor and friend who wrote many articles on farm taxation for Farm Light and Power magazine. In keeping with his tradition, I plan to write articles on specific issues and strategies that can be implemented on your operation.

This column topic centres on the myth that "land should not be purchased by a company." This is an old rule of thumb, which does not and cannot apply today. The reason is that, in today's economic environment, interest rates are extremely low and the price of land is reaching historical highs.

The following table, using land values in Olds, Alberta, can help explain this:

	1981	2013
Land values	$1,200	$3,500
Interest rates	15%	4.5%
Total payment per acre over 20 years	$4,560	$5,600
Interest carrying cost per acre over 20 years	$3,360	$2,100
Total principal payment per acre over 20 years	$1,200	$3,500
Principal as a percent of total payments	26%	62%
Interest as a percent of total payments	74%	38%

Conclusion

In 2013, the farm business can only deduct 38 percent of the total land payments while in 1981 they were able to deduct 74 percent of the total due to high interest rates. This is a complete reversal in the portion of land payments that are tax deductible.

In order to raise sufficient after-tax earnings to make the principal payments of $3,500, the non-incorporated farmer in 2013 has to raise $5,738 per acre at the top marginal tax rate of 39 percent in Alberta. The corporate farmer has to raise only $4,070 per acre at a 14 percent corporate rate to make principal payments on the loan. This difference is $1,668 per acre in pre-tax dollars to buy the same land! Who do you think can afford to buy the land?

If you don't currently own a farm corporation, 2014 may be a great year to do so. Many producers have large volumes of grain and the basis is widening with actual sales declining. My suggestion is to roll your grain inventory into a newly formed corporation on a tax deferred basis under Section 85 of the Income Tax Act. In exchange, you will receive preferred shares.

Once the grain is owned by the corporation, sales can occur and your taxable income in 2014 is taxed at the low corporate rate of only 14 percent in Alberta. In Saskatchewan, this rate is 13 percent up to $500,000. Manitoba is the winner, with a corporate rate of only 11 percent up to $400,000. In Alberta, therefore, a corporate farmer will pay only $70,000 at a taxable income level of $500,000, while a non-incorporated farmer will pay approximately $180,000.

Merle Good

Additional benefits of a farming corporation

Income splitting. There is an opportunity to split income among family members by means of salaries and dividends, which reduces the total personal tax payable. In setting up a corporation, draft the Articles of Incorporation carefully. It may be important to have individuals subscribe for different classes of shares to allow for future income splitting by distributing dividends to different shareholders.

Estate planning and transfers. It is easier and less costly to transfer shares in a company than to transfer individual assets of a business.

Limited liability. While shareholder liability is usually limited to the amount invested in the company, lenders usually require shareholders to personally guarantee loans. However, limited liability can be important if the company is found liable in a lawsuit.

Family involvement. A properly structured company can allow family members to participate in the farm business and receive income while leaving control of the business in the hands of one family member – usually the parents.

In closing, a farm corporation is no longer the "evil child" of business structures. With the lowest corporate tax rates in history and the flexibility in share structures, shareholders agreements, and the generous tax rules upon death, farm corporations need to be seriously considered in your operation. ●

Merle Good was the provincial tax specialist before retiring in 2013 after 27 years with Alberta Agriculture. Merle now does private farm management consulting and will be writing articles, hosting webinars and speaking at events on farm business management for the Alberta Canola Producers Commission. Visit www.albertacanola.com for more information.

SaskCanola

SKreport

REPORT TO GROWERS

Catherine Folkersen
SaskCanola

Welcome to 2014 at SaskCanola! I love the beginning of a new year – it is filled with hope, dreams and ideas that have yet to be fulfilled while still relatively free of errors, challenges and missteps. As the year moves forward, the balance is reinstated and for a handful of successes, there are the usual challenges and obstacles. But, right this minute, it's great to revel in the opportunities and dream the dream.

After a year of planning and working with our partners at SaskPulse, Saskatchewan Oat Development Commission, Saskatchewan Wheat Development Commission, Saskatchewan Barley Development Commission and SaskFlax, CropSphere has finally come to fruition. Last year, several groups decided to make the move to a new venue and new plan for a conference and we are very excited for it to go live this month. January 11 in Saskatoon ushers in an event made possible by following our director's vision of a new farmer-focused conference. Little did we know when the conference planning was initiated that Western Canada would have a bumper crop and that rail transportation would be top of mind. Terry Whiteside will join us to give his thoughts on North American rail transportation.

On the horizon is SaskCanola's election of directors in the autumn. Your canola levy organization has eight directors and every second year there are four positions up for election. Early autumn nominations lead to late autumn elections. Have you considered joining the team that oversees the operations of SaskCanola? It is guaranteed to be an invigorating experience that will get you more acquainted with canola than you ever thought possible. This year we are trying to implement an online election system that we hope will make voting easier. For those who wish to receive a paper ballot, that option will still exist. Our research indicates that electronic voting is eagerly awaited by many.

As your winter turns to spring and your plans for seeding begin to take shape, remember the vast quantity of resources that are available online at **www.saskcanola.com**. These resources will help you get your canola crop off to a great start, even before it hits the soil. We are only a click or two away.

Stay warm and enjoy watching your dreams become reality.

Catherine Folkersen
Executive Director

CropSphere

January 14-15, 2014
TCU Place, Saskatoon, SK

including

SASKCANOLA AGM

January 14, 2014
TCU Place, Saskatoon, SK

SaskCanola

REGIONAL PRODUCER MEETINGS

Plan to attend one of SaskCanola's Producer Meetings to get the latest crop production information.

North Battleford
March 6

Kindersley
March 7

Melfort
March 27

Program details and pre-registration can be found by going to:
www.saskcanola.com

HEADS-UP FOR 2014

By Pat Flaten

Record canola yields in 2013 provide optimism for 2014. Can we repeat this? Of course, even though weather plays such a major role in Saskatchewan, we can plan well and take advantage of those good conditions when they come along to create our own success.

This is our heads-up for 2014:

- Watch your bins!
- The high number of flea beetles last fall could lead to a high number of flea beetles this spring. Some seed treatments are more effective on crucifer flea beetles, yet striped flea beetles are on the rise and require an alternative approach.
- Symptoms are on the rise in northeastern Saskatchewan for swede midge. These have been devastating in Ontario due to a lack of management options. Will they become an issue in Saskatchewan? They are something to watch for.
- New findings of clubroot were reported in Alberta, Manitoba and North Dakota in 2013. Many management options are available if you can catch it early on.
- Be on the lookout for pests of all types, whether bugs or disease or weeds such as glyphosate-resistance kochia. Vary your approach to increase your chance of successfully keeping them under control.
- The big crop in 2013 means a big export of nutrients. Is your soil nutrient-starved?
- Is it about a big crop or big profits? Profits are often left behind for a variety of reasons. Top contenders for improving profits may include investing in the inputs that provide the most value, along with good plant establishment, scouting and catching issues as they arise. Trying something new? Think of the profits gained by learning from a check strip. ●

Pat Flaten is SaskCanola's Research Manager.

STRAIGHT-CUTTING CANOLA

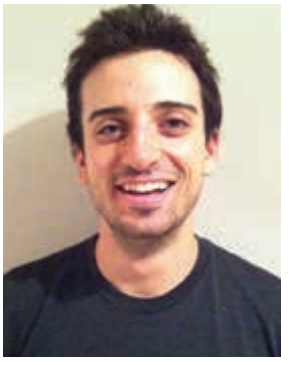
What is working? What is still needed?

Are you straight-cutting some or all of your canola? Do you wish you could do more? Better tools are coming, but there are aspects that still need work. An open forum session during Crop Production Week in Saskatoon will provide a short summary of what has been achieved so far. We want to hear from you about what's working and what's still needed for greater success. Register for CropSphere at **www.cropsphere.com** and come to this open forum session to share your experience, ask questions or hear what's new! ●

2013 DR. KEITH DOWNEY SCHOLARSHIP WINNERS

SaskCanola continues to support the growth and future success of the canola industry by providing four Dr. Keith Downey Scholarships, each valued at $2,000, to the families of registered canola producers. We are pleased to announce the following recipients of the 2013 Dr. Keith Downey Scholarships:

- **Colton Allan** from Davidson, SK, third year Renewable Resource Management student
- **Kelsey Richardson** from Delisle, SK, third year Agri-Business student
- **Laura Soucy** from Arborfield, SK, third year Renewable Resource Management student
- **Iain MacDonald** from Elrose, SK, third year Agri-Business student



Colton Allan

Laura Soucy

Kelsey Richardson

All winners are currently studying at the University of Saskatchewan. They expressed their appreciation for the funding assistance their scholarship will provide to help them further their agriculture studies.

The SaskCanola Dr. Keith Downey Undergraduate Scholarships are made available on an annual basis to the immediate families of registered Saskatchewan canola producers. Applicants must be enrolled in their second, third or fourth year of an undergraduate post-secondary agriculture education programs in a recognized Canadian institution. Congratulations to this year's recipients!

Information about the 2014 Dr. Keith Downey Scholarships will be posted in May 2014 on our website at **www.saskcanola.com**. ●

FOODS TO EAT RIGHT NOW

By Rebecca Hadfield

I had the privilege of being a guest of the Manitoba Canola Growers Association at the Manitoba Association of Home Economists conference. There was a ton of great information presented, but the highlight for me was the presentation by Mairlyn Smith, the hands-down coolest (and funniest) professional home economist I know. Mairlyn gave a talk about the top most awesome foods that everyone (yes, including you) should be eating every day.

1. Apples. Mairlyn says that if you can't eat an apple a day, you're a loser. I am proud (and relieved) to say that I eat, on average, six apples per week. I never peel them because, as Mairlyn reminded us, the peel is where the antioxidants are concentrated.

2. Berries. Mairlyn says we should eat them every single day, but never out of season. What? How? Okay, okay, I admit that I have been guilty of buying them in November but no more! I am now only buying frozen Canadian berries to fill those long, lonely, berry-less months.

3. Mushrooms are the only plant-based source of vitamin D, so eat up, sunshine! Hot tip: mushrooms must be cooked for bio-availability, so cook away for maximum benefit.

4. Leafy greens. Didn't every little girl want Popeye's biceps? No? Just me? Either way, load up your basket with kale, spinach, chard or fresh rapini and baby kale.

5. Orange fruits and vegetables. Do I have to list them, or is that pretty self-explanatory? (Hint: they are all a certain colour.) I am a huge fan of carrots, squash and sweet potatoes, so this one is a no-brainer for me.

6. Onions and garlic. Stay healthy and vampire free! Mairlyn shared this awesome tip: To get maximum benefit from your garlic, mince it and let it sit for five to ten minutes before adding to your recipe.

7. Fatty fish, like salmon (my favourite), is chock full of Omega 3 fatty acids, which promote heart and brain health, help reduce inflammation, and can aid in lowering cholesterol. Here's my rather unscientific, but nevertheless logical logic: We know that fish are smart (since they spend all their time in schools), and fish eat fish. Therefore, eating fish is a smart thing to do.

8. Beans, beans, beans. Eat lots…and own your farts. Beans are an extremely economical source of nutrition. Among their many virtues, beans are high in both insoluble fibre, which keeps things moving, and (woot woot) soluble fibre, which binds with water to form a gel that fills you up and blocks the absorption of cholesterol. Talk about bang for your buck!

9. Oats and barley. I eat oats for breakfast approximately 359 days a year. It may be out of habit, or a bizarre fear of high-cholesterol, or maybe just because I just like 'em.

10. Nuts are nutrient-rich and a great source of heart-healthy fats, protein, and fibre. I eat almonds for their protein and calcium, but I am careful not to go, uh, nuts on them. As Mairlyn says, a serving of shelled nuts fits in a closed fist.

11. Canola oil. Canola oil is on the list because you can't make a list like this without mentioning it. Canola is my go-to oil. It's heart healthy, full of Omega 3s and, gosh-darn it, it's one of the prettiest crops out there. But you don't need me to tell you that. ●

Rebecca is a certified spinning instructor, fitness instructor, blogger (Relish and Everything is ticketyboo!), artist, reluctant morning person, and notorious killer-of-plants. She lives in a foliage-free home with her teenage son, Jacob. Go to CanolaEatWell.com for the Stir-fry recipe that incorporates 9 of the healthy ingredients that Rebecca uses on a regular basis.

Canola! EAT WELL FOR LIFE

JOIN US AT MANITOBA AG DAYS

January 21-24, 2014

Visit our booth and enter to win CropConnect registration.

Manitoba Canola Growers

CANOLA DAY

Tuesday, January 21, 2014

Keystone Centre, Main Program Area, Brandon, MB

9:00 a.m. **The Ultimate Canola Challenge: Best Management Practices for Canola Production**
Angela Brackenreed, Regional Agronomist, Canola Council of Canada

10:00 a.m. **Canola Market Update**
Brenda Tjaden Lepp, Co-founder & Chief Analyst, FarmLink Marketing Solutions

11:00 a.m. **Clubroot Panel: Let's Learn from Alberta**
Moderator Anastasia Kubinec, MAFRI Oilseed Crop Specialist; Dan Orchard, Alberta Agronomy Specialist, Canola Council of Canada; an Alberta grower who has clubroot explains his management practices. ●

AGM AT CROPCONNECT

MCGA's Annual General Meeting will be held February 18 starting at 1:50 p.m. as a part of the CropConnect Conference in Winnipeg.

Registration for CropConnect and the Annual General Meeting can be found at **www.cropconnectconference.ca**.

Registration for the AGM only is free of charge. Pre-registration is encouraged. ●

STAY CONNECTED WITH THE MANITOBA CANOLA GROWERS

Sign up for our monthly e-newsletter at **www.mcgacanola.org**

Follow us on Twitter: **@CanolaGrowers**

Find us on Facebook: **/ManitobaCanolaGrowers**

OIL SPIN 2013

By Alison Neumer Lara

CanolaInfo used four clever and colourful media strategies to promote canola oil in the U.S. and demonstrate its contribution to healthy and delicious food.

Registered dietitian and author Dawn Jackson Blatner created six hearty and healthy recipes for CanolaInfo's "Comfort Your Heart" campaign. One recipe is Chicken Parmigiana with Spaghetti Squash, provided on page 46.

Healthy living is also delicious, as CanolaInfo showed consumers in 2013.

The Canola Council of Canada's oil promotion program launched four recipe-driven media campaigns over the year with the help of two spokespeople, dozens of ads, hundreds of radio and television broadcasts and thousands of website and print articles. Each quarter featured a different collection of flavourful, easy-to-prepare dishes made with canola oil, accompanied by alluring photographs and consumer-friendly tips on healthier cooking and better nutrition.

"Delicious meets nutritious with these recipes," says Shaunda Durance-Tod, registered dietitian and CanolaInfo program manager. "The success of these campaigns comes down to great, healthy recipes that use canola oil to its best advantage and show off its culinary and health benefits. Also essential are charismatic, knowledgeable spokespeople to deliver the message in a compelling way."

With these ingredients for success, 2013 campaigns resulted in nearly one billion consumer impressions.

Q1: HEARTY AND HEALTHY

CanolaInfo kicked off 2013 with "Comfort Your Heart," a campaign featuring six hearty but healthy comfort food recipes developed by registered dietitian and author Dawn Jackson Blatner. The collection included dishes such as skillet gnocchi with butternut squash and kale pesto, turkey burger casserole with parsnip and carrot frites, and rustic tomato soup with grilled cheese crostini. Launched in January, "Comfort Your Heart" seized on the popularity of comfort fare during the cooler months.

"When putting together these recipes, I thought about foods that seemed hearty and warm – something I would like to eat on a winter night," Blatner says.

Simple ingredient changes, including the use of canola oil, and healthier cooking techniques, such as "bake-frying" instead of deep-frying, helped transform what are typically heavier dishes into heart-healthy ones without sacrificing flavour.

"Nutrition advice used to emphasize "eat less salt, eat less cholesterol and eat less fat." Now it's more about eating whole grains, plant proteins, lots of produce and heart-smart fats like canola oil," Blatner adds.

The message clearly struck a chord. About 34 million listeners tuned in to Blatner's interviews with radio stations across the country. The campaign news release, articles, ads and radio release reached an additional 200 million consumers for a first quarter total of 234 million media impressions.

Q2: FOOD NETWORK CELEBRITY DRAWS CONSUMERS

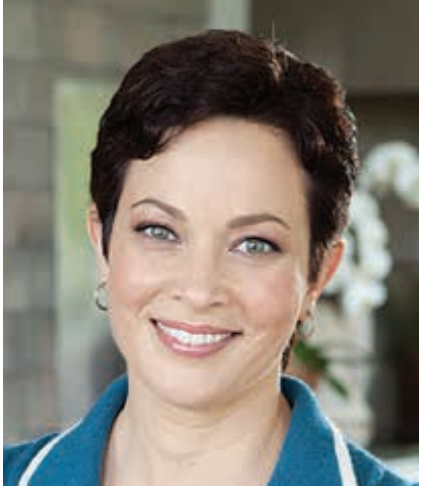
CanolaInfo collaborated on three campaigns with registered dietitian and award-winning cookbook author Ellie Krieger, host of the Cooking Channel's "Healthy Appetite."

The first of the three was "Mother's May the Healthy Way," which encouraged consumers to celebrate Mother's Day all month long with a lineup of heart-healthy brunch items such as smoked salmon eggs benedict with creamy dill caper sauce, whole-grain apple oven pancake and breakfast strata primavera.

Krieger developed the recipes for CanolaInfo using several of her signature "better-for-you" substitutions such as canola oil in place of butter and whole-grain flour instead of refined white flour. Using these alternatives, she says, helps keep saturated fat in check and adds nutritional value without compromising taste.

"I wanted to come up with elegant yet easy-to-make dishes for families to show mom how truly appreciated she is," Krieger says. "The gift of heart-healthy cooking is a wonderful way to express love while promoting well-being."

Articles and news releases about the recipes attracted more than 175 million



CanolaInfo collaborated on three campaigns in 2013 with registered dietitian and cookbook author Ellie Krieger, host of the Cooking Channel's "Healthy Appetite."

readers. Krieger also promoted the campaign via radio stations nationwide, drawing about 48 million listeners. The campaign, though tied to the May holiday, extended well into June as media outlets adapted it for Father's Day, too. Total media impressions from "Mother's May the Healthy Way" were 233 million.

Q3: SAY 'I DO' TO ENGAGING APPETIZERS

With summer engagement parties and weddings in mind, CanolaInfo and Krieger launched the "Engaging Appetizers" campaign in July to "marry" health and flavour.

Krieger's festive, portion-controlled bites made with canola oil featured the season's best produce, while being mindful of the bride and groom's waistlines. Recipes included mini crab cakes with smarter tartar, beef pops with grainy mustard sauce, and shrimp cocktail with lemon mint pesto.

"Couples attend so many parties leading up to the big day and it can be a challenge to eat healthfully," Krieger says.

Recipes popped with garden vegetables and fresh herbs, such as roasted red peppers and basil leaves wrapped in grilled zucchini or pesto made with handfuls of fresh mint. To cut saturated fat, Krieger also swapped in healthier ingredients – such as canola oil, canola mayonnaise and nonfat Greek yogurt – for other oils and sauces.

As part of this and all the media campaigns, CanolaInfo effectively distributed pre-packaged stories across multiple media channels. For example, the "Engaging Appetizers" article disseminated by North American Press Syndicate appeared in more than 2,200 small-market outlets with an audience of nearly 34 million. The campaign news release was picked up by 320 online news sites visited by about 74 million readers. One of the campaign photos also appeared on PR Newswire's digital billboard in New York's Times Square. Consumer impressions from the "Engaging Appetizers" campaign totaled 170 million.

continued on page 46

continued from page 45

Q4: A SWEET ENDING

The year closed with an eye-catching, mouthwatering collection of desserts fit for the holiday season. CanolaInfo and Krieger's "Decades of Decadence" recipes traced classic desserts across the last century, beginning with lemon chess pie, which originated in the 1820s, to frozen grasshopper pie from the 1950s. In between were iconic favourites such as black and white cookies, chocolate war cake, pineapple upside-down cake and strawberry shortcake – all updated with canola oil and other healthy ingredients to reduce saturated fat and cut calories.

"History shaped these desserts and they have stuck around because they are inherently delicious," Krieger says. "They were driven by the availability of ingredients in their day; advertising by food companies in women's magazines, such as strawberry shortcake for a biscuit brand; advancements in food technology like canned, sliced pineapple; or appliances such as the invention of the freezer as a separate unit from the refrigerator for storing items like ice cream."

Using history as the hook, the campaign focused on a healthy, balanced approach to sweets made with canola oil.

"Simple ingredient swaps like canola oil for butter and Greek yogurt for cream lighten up desserts without taking away from their indulgent taste," Krieger adds. "Everyone should be able to enjoy a dessert once in a while and these recipes make it easy to do so."

"Decades of Decadence" was a hit across media outlets. In addition to extensive print, online and radio promotion, CanolaInfo featured Krieger and canola oil in a satellite media tour on television that resulted in nearly 30 interviews and 200 television spots. Speaking with television reporters from a New York studio kitchen, Krieger showcased the campaign desserts and demonstrated how to make the chocolate war cake to an audience of about eight million viewers. Consumer impressions at of the time of writing totaled 191 million.

ALL ATWITTER

An increasingly powerful ingredient in CanolaInfo's recipe for oil promotion is social media. Frequent Facebook posts and tweets with recipes and photos throughout the course of the campaigns drive visitor traffic to CanolaInfo's Facebook page and CanolaInfo.org. This is shored up by campaign-specific ads on Facebook, a cost-efficient way to reach CanolaInfo's target audience where they spend their time online. Posts, especially with great food photos, can attract thousands of views. In 2013, CanolaInfo increased its Facebook fans to 55,000, Twitter followers to 1,500 and monthly website visits to 23,000.

Views or "impressions" are how media campaigns are traditionally measured. The ultimate success, however, is measured outside media. Data at the end of 2012 shows canola oil with more than 23 percent of the U.S. retail edible oil market by volume, according to Nielsen figures. *Oil World* reports the volume of canola oil used for food and other purposes has risen in the U.S. over the past five years, reaching a projected 1.6 million tonnes in 2012-13.

"Our goal isn't simply an impression, it's education," Durance-Tod explains. "Those kinds of quality media impressions need to translate into changes in consumer behavior. At the end of day, we want more people to buy more canola oil." ●

Alison Neumer Lara is an account supervisor for CanolaInfo at Inkovation, Inc. in Chicago, Ill.

Chicken Parmigiana

INGREDIENTS

1	**spaghetti squash**, halved and seeded
½ Tbsp	**canola oil**
½ cup	**whole grain flour**
1 Tbsp	**dried oregano**
¾ cup	whole grain **bread crumbs**
½ tsp	**black pepper**
1	**egg**, whisked
4 (3 oz.)	**chicken breasts**, pounded until uniform thickness, about ½ inch
	canola oil cooking spray
2 cups	your favourite **marinara sauce***
¼ cup	fresh grated **Parmesan cheese**
½ cup	**fresh basil**, chopped

INSTRUCTIONS

1. Preheat oven to 400°F.
2. Brush squash with canola oil and place it flesh side down on a baking sheet. Bake 40 minutes or until tender.
3. While baking squash, combine flour and oregano in a shallow bowl. In a second shallow bowl, combine bread crumbs with pepper. In a third bowl add the whisked egg.
4. Dip chicken into flour mixture, then egg, then bread crumbs – shake off excess with each step.
5. Mist breaded chicken with canola oil cooking spray on both sides and place on baking sheet. Bake 15 minutes, top with marinara and Parmesan cheese and bake an additional 15 minutes until heated and cheese is melted.
6. Once squash is cooled, pull fork through the flesh, creating spaghetti-like strands.
7. Serve chicken on top of spaghetti squash and sprinkle with fresh basil.

Servings: 4 (3 oz. chicken + 1 cup spaghetti squash)

**Note: Or try CanolaInfo's Arrabiata Pasta Sauce*

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MORRIS
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