

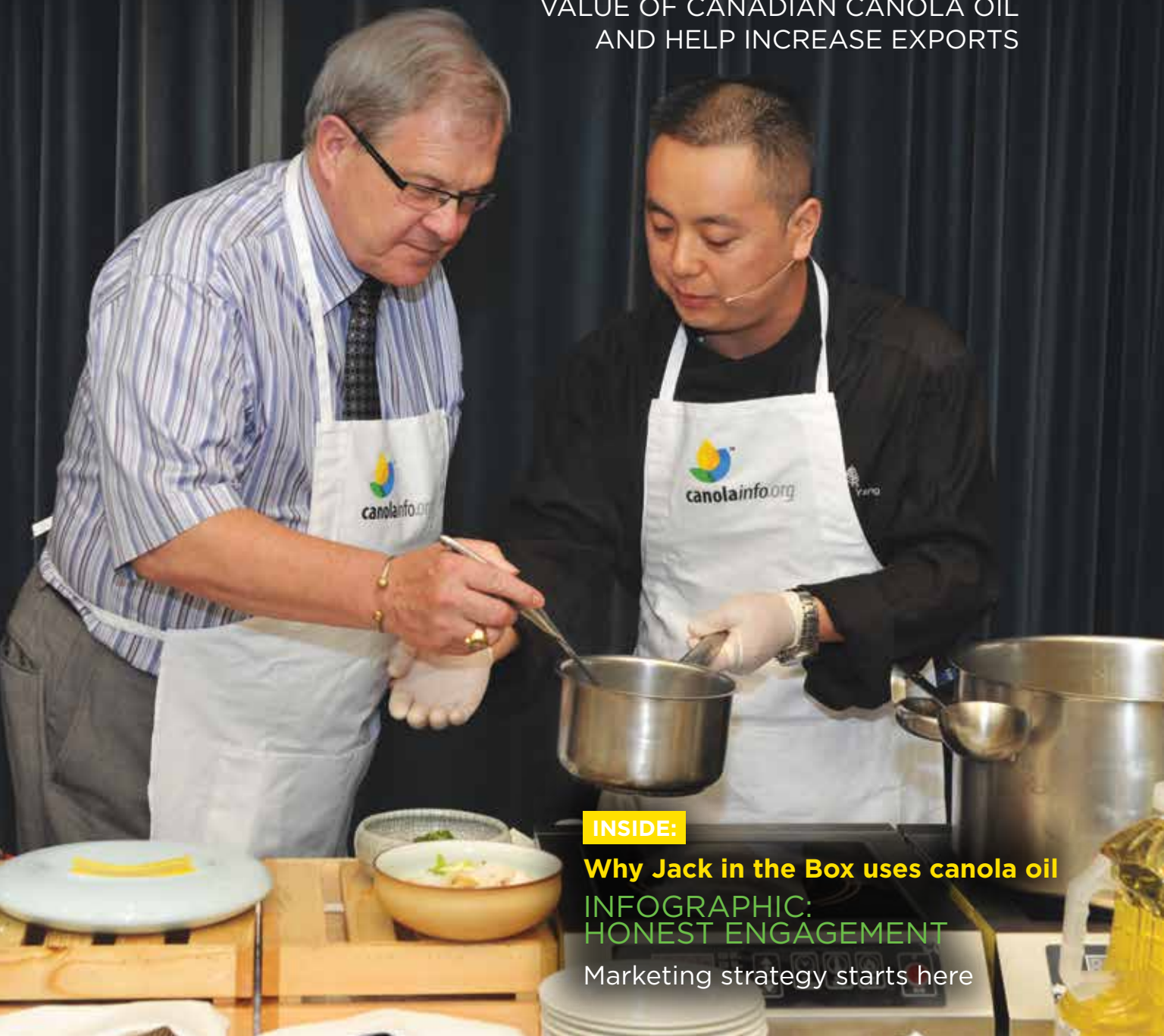
November 2016

canola DIGEST

The Source For Canada's
Canola Growers

Market SNAPSHOT

CCC INITIATIVES DEMONSTRATE THE
VALUE OF CANADIAN CANOLA OIL
AND HELP INCREASE EXPORTS



INSIDE:

Why Jack in the Box uses canola oil

INFOGRAPHIC:
HONEST ENGAGEMENT

Marketing strategy starts here



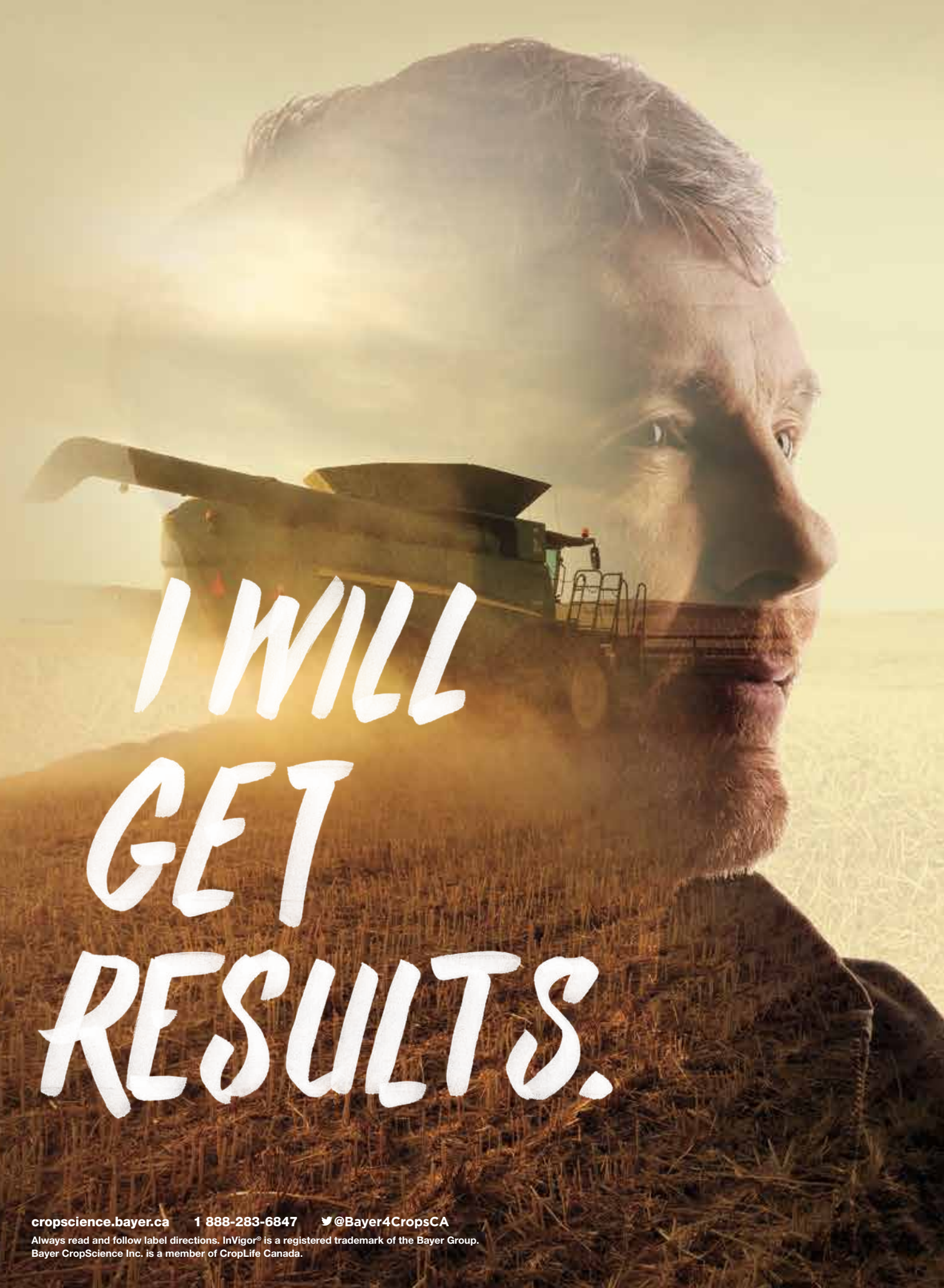
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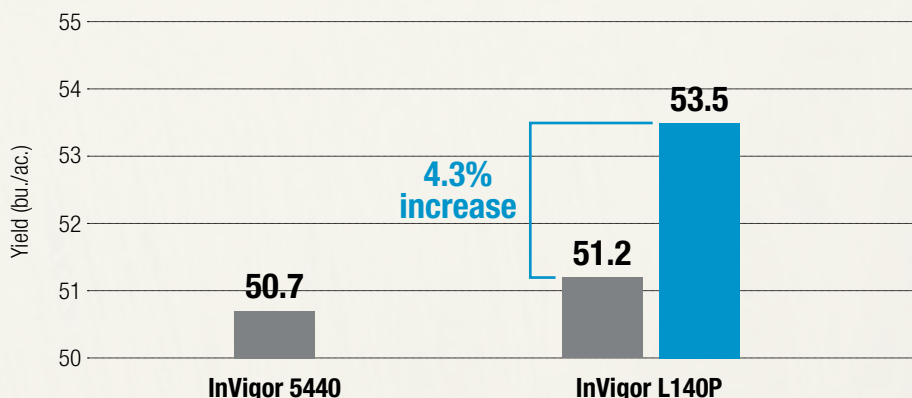
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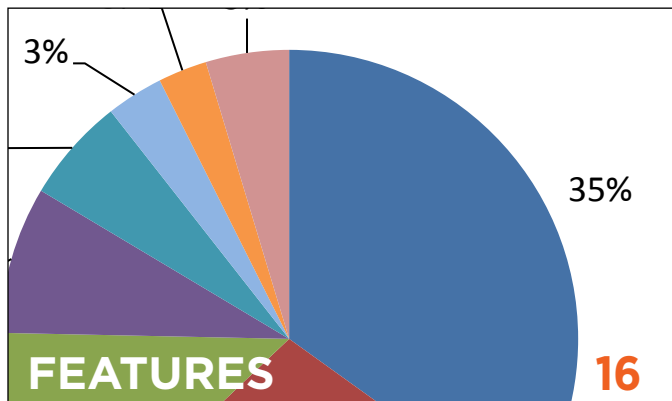
In Demonstration Strip Trials (DSTs) for the past three years, InVigor® L140P, using the same agronomic practices, has shown a 4.3% yield increase* when straight cut over normal swath timing. To see how InVigor L140P performed this season, check out yield results at InVigorResults.ca

Harvest Management DST Yield Summary

■ Normal Swath ■ Straight Cut



* Source: 64 Bayer DSTs (2013–2015).
Results may vary on your farm due to environmental factors and preferred management practices.



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CANOLA MARKET SNAPSHOT

Tables and graphs give you the numbers on canola production and processing in Canada, key markets for Canadian canola seed, oil and meal, and canola's competitors in the world vegetable oil market.

20

Canadian canola oil fits with new Chinese dietary guidelines

Lawrence MacAulay, Canada's Minister of Agriculture and Agri-Food, participated in a canola oil cooking demo with Chef Yuanjun Yang in Beijing. It was part of an event to celebrate a Sino-Canadian working relationship.

22

Why Jack in the Box uses canola oil

American fast-food chain Jack in the Box has 2,200 restaurants, each with three to five fryers holding 30 pounds of oil. All of it is canola oil. What will keep it that way?

24

Honest engagement

Want to engage with consumers and cousins on how to discuss biotech, pesticides and other modern farming tools, but don't know how? This infographic, which you can remove and post on your wall, will help.

26

In favour of science-based trade rules

Science-based rules for trade offer predictability for growers who depend on access to consumer markets around the globe.

28

GM labelling: A cat and mouse game?

The activist cat finally caught the mandatory GM labelling mouse. This past summer, the U.S. Congress passed a new law requiring mandatory GM disclosure.



Credit: iStock.com/Pakhnyushchy

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Fundamental transportation issues remain

Only four of the 326 grain elevators in Western Canada had direct access to both Class 1 railways. Interswitching improves access.

34

Colour guides help farmers assess green or heated seeds

The Canadian Grain Commission has two guides, similar to paint-colour swatches, showing what graders mean by distinctly green and distinctly heated.

40

Chef Chris Corkum, canola champion

SaskCanola sponsors this Saskatoon chef, who won gold for Canada at the Congress of the Americas regional competition for the World Association of Chef Societies (WACS).

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Propound expands canola meal opportunities for poultry and swine

Dow AgroSciences' genetically-improved canola meal has higher protein, improved digestibility and lower levels of fibre than standard canola meal.

DEPARTMENTS

32 **Business management** Marketing strategy starts here

What to do when futures are high but basis is wide? Stan Jeeves explains the four futures-basis situations and what to do in each.

36 **Agronomist abroad** Over and over and over again

CCC agronomy specialist Gregory Sekulic shares details from a trip to Rothamsted Research, the U.K. centre that has grown continuous wheat for 173 years.

44 **Canola Research Hub** Impacts of fertilizer on yield

This article, based on content from canolaresearch.ca, looks at fertilizer rates, seed-placed fertilizer and crop rotation benefits to help with crop nutrition decisions.

46 **Farm panel** Farm show season

These panelists talk about why they attended and what they learned at canoLAB, canolaPALOOZA and the big winter shows.



48 **5 steps to better...** Herbicide resistance prevention

Canola Council of Canada agronomy specialist Ian Epp looks at integrated weed management as a way to combat herbicide resistance.

PROVINCIAL BULLETINS

6 **ALBERTA CANOLA**

Get social! Through Facebook, Twitter and albertacanola.com, Alberta Canola shares marketing, business and production tips. Also...Register for Powering Your Profits this month and FarmTech 2017.

10 **SaskCanola**

Come see us! SaskCanola co-hosts Saskatchewan Oilseed Producer Meetings this month in Weyburn, Humboldt, Prince Albert, Rosetown and Swift Current. Also...Register for CropSphere 2017.

14 **Manitoba Canola Growers**

What has been going on at the Pest Surveillance Initiative Lab? Look at the infographic on page 15 to find out. Also... MCGA partners with the "Farm2School" recipe book for school aged kids and their families.

CALENDAR

SASKATCHEWAN OILSEEDS DAYS –

Five locations from November 14-18. Canola, flax and mustard organizations hold joint producer meetings. Check for specific dates and towns on page 10 of this issue. saskcanola.com

ALBERTA CANOLA PRODUCERS

COMMISSION REGIONAL MEETINGS –
Eleven locations from November 15-December 1. Check for specific dates and towns on page 7 of this issue. | albertacanola.com

MANITOBA FARM WOMEN'S

CONFERENCE – November 20-22
in Portage la Prairie.
manitobafarmwomensconference.ca

AGRIBITION GRAIN EXPO –

November 22-23 at Evraz Place in Regina.
agribition.com

LEADERSHIP CONFERENCE –

November 24-25 in Brandon, Man.
canolagrowers.com

COVER YOUR ASSETS – December 7 & 8.

Manitoba Canola Growers will hold this marketing meeting at two locations: Neepawa on December 7 and Roblin on December 8.
canolagrowers.com

CROP PRODUCTION SHOW –

January 9-12, 2017 at Prairieland Park in Saskatoon. SaskCanola has a booth in Hall B.
cropproductiononline.com

SASKCANOLA AGM & 25TH ANNIVERSARY CELEBRATION –

January 9, 2017 at Prairieland Park in Saskatoon.
saskcanola.com

CROPSPHERE – January 10-11, 2017

at Prairieland Park, Saskatoon.
cropsphere.com

FARMTECH CONFERENCE –

January 31-February 2, 2017 at the Expo Centre in Edmonton. | farmtechconference.com

CROPCONNECT – February 15-16, 2017

at the Victoria Inn in Winnipeg.
cropconnectconference.ca

CANOLA COUNCIL OF CANADA

CONVENTION – March 7-9, 2017 in Winnipeg
convention.canolacouncil.org



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ALWAYS FOLLOW GRAIN MARKETING AND ALL OTHER STEWARDSHIP PRACTICES AND PESTICIDE LABEL DIRECTIONS. Details of these requirements can be found in the Trait Stewardship Responsibilities Notice to Farmers printed in this publication. ©2016 Monsanto Canada, Inc.





Lake effect

I swam in Chain Lakes this past summer for the first time since I was nine. The Chain Lakes I know is a string of three tiny lakes in Southwest Manitoba, just off Highway 21 between Hartney and Deloraine. My family's farm – the place I grew up and where my brother and his family now farm – is beside the biggest of the three lakes. I shed sweat and dust in that shale-bed lake one sunny Prairie day in July.

My boys, my parents and I were camping in a sweet 1980s motorhome. My dad, taking a break from picking an ice cream pail of the plumpest, sweetest wild Saskatoons, decided he was roasted and it was time for a dip. We thought he was nuts.

Chain Lakes are shallow and weedy and muddy and leechy. I took two years of swimming lessons there, earning my white and orange badges. But as soon as Hartney built its centennial pool, all lessons and most swimmers' loyalties shifted to the clear, treated waters. The weathered Chain Lakes change rooms (with their swallows' nests) and the weird, wheeled diving platform were dismantled. Only diehards like my dad kept swimming there.

Yet here we were, playing catch on the shore and staying super-surface in a canoe, watching in awe as this fit older dude cannon-balled into the weeds. So what could we do but follow? One by one we de-calmed the waters. And – surprise! – it wasn't as weedy or mucky or leechy as anyone expected. It was great – just three feet deep – but great. We were experiencing a classic Mark Twain or W.O. Mitchell "swimmin' hole".

This maybe isn't much of a story, but it

reminded me again that you, as a farmer, work, live and play in the local environment you keep. This should be important to anyone questioning whether farmers care about the land. Of course you do. Which is something the non-farming 98-per-centers need to hear.

Sandi Knight wrote and Suckerpunch Creative designed this issue's excellent infographic about "Honest engagement", with tips for talking science and modern agriculture. One tip is to appeal to people's emotions rather than bombard them with facts. You appeal to emotions by talking about shared values and common concerns – about your ethics, experiences and priorities. Be honest and authentic. Tell real stories.

Marketing man Terry O'Reilly, who hosts "Under the Influence", one of my favourite radio shows on CBC, spoke at FarmTech 2016 in January. He said the same thing. People connect when you tug at their hearts. The best marketing pitches tell a story.

When someone challenges you about modern farming, you could say "Yes, I use these high-tech tools because they help me do a better job of producing food AND they also help me sustain my way of life, my land and the environment I live in." Then share, with enthusiasm, something about your farm that they can relate to. Tell them about all the wild saskatoons growing in a bush at the end of your lane. Or the ducks and night-herons and muskrats in the wetlands you protect. Or why your grandparents chose this homestead five generations ago. Or about the little lake where your kids cool off on hot, dusty summer days. ☘



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Marketing – Hedging Edge Workshop



DECEMBER 14 & 15 | EDMONTON, AB

A two-day marketing course featuring presentations and hands-on trading exercises to help understand the futures market, hedging and options strategies.

Management – Leading Edge Conference



FEBRUARY 15 & 16 | RED DEER, AB

This two-day conference covers business structures, succession planning, and liability and risk management with Alberta's best farm financial advisors.

Agronomy – canoLAB



FEBRUARY 22 & 23 | LAKELAND COLLEGE - VERMILION, AB

Plan to attend this one-day hands-on diagnostic and advanced agronomy session featuring small group interaction with Western Canada's leading canola experts.

Get all details and registration information for these events and more at:
albertacanola.com/events

FarmTech 2017

ATTEND CANADA'S PREMIER
CROP PRODUCTION AND FARM
MANAGEMENT CONFERENCE IN
EDMONTON, ALBERTA FROM
JANUARY 31 TO FEBRUARY 2,
2017.

2017 speakers include Brian Mulroney,
Clara Hughes, and Romeo Dallaire.

Get all the details and register at
farmtechconference.com.



Join Alberta Canola for their annual
general meeting held during FarmTech
on Tuesday, January 31 at 2:45 p.m.

Talking Transportation

By Kevin Serfas, Director, Alberta Canola

On September 20, 2016, I had an opportunity to be part of the Team Alberta delegation that met with Minister Carlier of Agriculture and Forestry and Minister Mason of Transportation to talk about transportation policy that meets the needs of Canadian agriculture. Even though it was the middle of harvest, timing couldn't have been more perfect. With the large projected crop coming off this year, it was critical that we voiced Alberta's cropping sector needs for shipping grain. The Canada Transportation Act review will conclude soon and consultations with the provincial Ministers at the September 28 Federal-Provincial-Territorial meetings are one of the most important steps in finalizing the review.

Team Alberta is a collaborative initiative of Alberta Barley, Alberta Canola, Alberta Pulse Growers and the Alberta Wheat Commission, which advances policy on behalf of Alberta's crop sector. The awesome thing about Team Alberta is that we can speak with a unified voice about issues that are common to all four commodity groups.

Here are a few takeaways I had from this meeting:

1. The staff that each commission employs, such as executive directors and policy analysts, are second to none. The more I see these people at work, the more I realize how in tune they are with everything going on with the industry and how hard they are working for issues that matter to us on the ground. They are extremely good at preparing us as directors for occasions such as this. Filling us in on the history of issues and helping us focus on the key points we need to make. As directors, we are first and foremost farmers. We don't have the time to be fluent in all matters, but we know what is important to our business. These people help us to put our issues into a global context and get our point across in ways that resonate.

Read the full article at
albertacanola.com/connects

Powering Your Profits Tour 2016

Get the agronomy, marketing and management information you need to boost your bottom line at one of our 12 canola events across Alberta. There's a different lineup of speakers at each location. Visit albertacanola.com/pyp to see who is at the meeting near you. Register online or call 780-454-0844. All who register will be entered to win a three-day FarmTech pass! All meetings go from 9 a.m. to 3 p.m.

NOVEMBER 15

Strathmore, Travelodge
Camrose, Best Western Resort & Casino

NOVEMBER 16

Lethbridge, Coast Hotel
and Conference Centre
Vegreville, Vegreville Social Centre

NOVEMBER 17

Kitscoty, Kitscoty Community Hall
Westlock, Westlock & District
Community Hall

NOVEMBER 22

Lacombe, Lacombe Memorial Centre

NOVEMBER 23

Stony Plain, Best Western
Sunrise Inn & Suites

NOVEMBER 29

Fairview, Dunvegan Inn

NOVEMBER 30

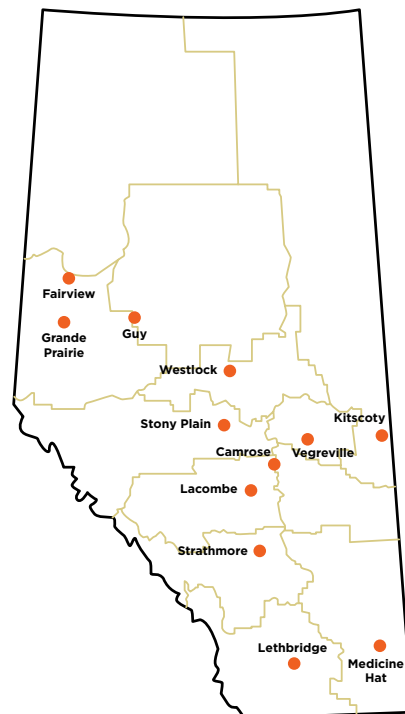
Guy, Guy Community Hall

DECEMBER 1

Grande Prairie, Five Mile Hall

DECEMBER 6 & 7

Farming Smarter Conference,
Medicine Hat, Medicine Hat Lodge



Featured Speakers:



MURRAY HARTMAN

Murray Hartman, provincial oilseed specialist, Alberta Agriculture and Forestry, will speak at Strathmore, Vegreville, Westlock, Lacombe, Stony Plain, Fairview, Guy and Grande Prairie.



DEAN GALLIMORE

Dean Gallimore, independent farm management advisor, will speak at Camrose, Vegreville, Kitscoty, Fairview, Guy and Grande Prairie.



MIKE JUBINVILLE

Mike Jubinville, senior analyst, ProFarmer Canada, will speak at Strathmore, Lethbridge, Westlock, Lacombe and Stony Plain.



JONATHON DRIEDGER

Jonathon Driedger, senior market analyst, Farm-Link, will speak at Fairview, Guy and Grande Prairie.



TOM WOLF

Tom Wolf, sprayer specialist, Agri-metrix Research & Training, will speak at Fairview, Guy and Grande Prairie.



MERLE GOOD

Merle Good, independent farm management advisor, will speak at Strathmore, Lacombe and Stony Plain.



FarmTech™

All who register early will be entered to win a three-day FarmTech pass! To register, visit albertacanola.com/events or call 780-454-0844.



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SaskCanola's Annual General Meeting



The Saskatchewan Canola Development Commission's Annual General Meeting (AGM) will be held prior to the start of CropSphere at Prairieland Park in Saskatoon on Monday, January 9, 2017 at 11:00 a.m. Canola producers may attend the AGM without registering for CropSphere. Following the AGM, we invite you to attend a SaskCanola-sponsored complimentary lunch and learn. The guest speaker is to be announced. Please visit www.saskcanola.com for more information closer to the date.



Save the Date

SASKATCHEWAN OILSEEDS DAYS

Plan to attend an oilseeds producer meeting to get the latest crop production information for canola, flax, and mustard.

Weyburn – November 14
Humboldt – November 15
Prince Albert – November 16
Rosetown – November 17
Swift Current – November 18

AGRIBITION GRAIN EXPO

November 22 & 23, 2016
Evraz Place, Regina

CROP PRODUCTION SHOW

Stop by the canola booth in Hall B to talk with the SaskCanola Board & Staff and the Canola Council of Canada Staff & Agronomists.

January 9 – 12, 2017
Prairieland Park, Saskatoon

CROPSPHERE

January 10 – 11, 2017
Prairieland Park, Saskatoon

SASKCANOLA AGM & 25TH ANNIVERSARY CELEBRATION

January 9, 2017
Prairieland Park, Saskatoon

For the latest event details and pre-registration information, please visit saskcanola.com or call 1-877-241-7044.

SaskCanola Election and Electronic Voting

Six nominations have been received to fill four seats at SaskCanola's board table. The voting period opened November 1 and ends November 30 at noon CST.

The six nominees include Keith Fournier from Lone Rock/Maidstone, Gerry Hertz from Edenwold, Kyle Korneychuk from Pelly, Patricia Lung from Humboldt, Wayne Truman from Redvers, and Doyle Wiebe from Langham. Profiles for each candidate can be found at www.saskcanola.com. All election candidates will also be featured on SaskCanola's monthly radio program in November to discuss their priorities for the canola industry.

Registered producers* will receive a web-based election letter that will instruct them how to select their Board choices from the nominated candidates in the online voting platform. There will be an option listed in the letter for registered producers who wish to vote by paper ballot.

SaskCanola is governed by farmers so make sure your voice is heard and vote!

**A registered producer is any producer who has sold canola in either of the previous two crop years and has not requested a levy refund in the past year.*

Register Now for CropSphere 2017

The countdown to CropSphere 2017 is now on! The conference will take place January 10 & 11, 2017 at Prairieland Park in Saskatoon in conjunction with the Crop Production Show. This year will mark the fourth annual CropSphere conference, brought to you by host groups SaskOats, SaskBarley, SaskCanola, SaskFlax, Saskatchewan Pulse Growers and Sask Wheat.

Focusing on Ideas, Innovation, and Knowledge, the goal of the conference is to provide thought-provoking sessions to engage Saskatchewan producers in discussions that will continue to improve the crop industry in our province. In addition to the conference sessions, host groups will hold their annual general meetings (AGMs) at Prairieland Park on Monday, January 9, 2017.

Online conference registration opened November 1, 2016, and conference rates at several hotels will be in effect until mid-December. For more registration, agenda and event information, please visit www.cropsphere.com. Stay connected by following us on Facebook and Twitter @cropsphere. We look forward to hearing engaging speakers and sharing many networking opportunities throughout the week.

CropSphere
Ideas, Innovation, and Knowledge

SAVE THE DATE FOR

SASKATCHEWAN OILSEED PRODUCER MEETINGS

5 MEETINGS

5 LOCATIONS

5 DAYS

 **SaskCanola**
Saskatchewan Canola Development Commission

 **SASK MUSTARD**
SASKATCHEWAN MUSTARD DEVELOPMENT COMMISSION

 **SaskFlax**  **Government of Saskatchewan**



NOVEMBER 15

UNIPLEX CONVENTION
CENTRE HUMBOLDT, SK



NOVEMBER 17

CIVIC CENTRE
ROSETOWN, SK

NOVEMBER 14

THE LEGION HALL
WEYBURN, SK

NOVEMBER 16

WILDLIFE FEDERATION
PRINCE ALBERT, SK

NOVEMBER 18

LIVING SKY CASINO
SWIFT CURRENT, SK



Oilseed partners invite you to attend a producer meeting in your area.

Featuring sprayer specialist, Tom Wolf, market analyst, Chuck Penner, and agronomy information.

For full agenda and to pre-register, please visit: www.saskcanola.com or call 1-877-241-7044.

PERFORMANCE THAT PAYS IN GOLD



Start your next canola season off in a big way with the new F4365 High Capacity Nutrient Applicator. A generous 9.3 cu m dry spinner spreader is capable of 18.3 to 27.4 m spread widths to get your nutrients incorporated nicely into your soil. Spread at rates up to 454 kg an acre at 16 km/h – all to help you meet those tight spring application windows so your seedbed is healthy, robust, and ready for seeding. Just don't forget to take notice of the smooth ride. The F4365 offers 30% greater ride quality versus the leading competitive 4-wheel machine based on bump-track test results.

It's time to get seeding – starting with the 9RX Tractor. The 4-track design puts more power to the ground, allowing for improved flotation and traction with less berming and compaction. Superior cab suspension keeps you running comfortably when conditions say otherwise. Add to that the 470 to 620 hp range and an industry-leading hydraulic capacity of up to 115 gpm to make easy towing of larger implements.

Like the 23.2 m 1870. Added size alone, we've raised productivity – 36% more than our previous 1870. But that's only

half the tale. RelativeFlow™ provides instant recognition of flow rate so you know if your desired rate is not flowing. No more surprises when you go to check emergence. There's also TruSet™ to hydraulically adjust pressure and depth from the cab to ensure better seed-to-soil contact and improved germination.

Meet the all-new C850. Our higher capacity cart offers 850 bu of total product, with a 50 bu mini-hopper especially designed for finer material, such as canola. And it delivers 249.5 kg of product per acre at 8.9 km/h. The C850 features new Air Power 2.



W155 Windrower



9620RX Tractor / 1870 Air Drill / C850 Air Cart

Check out the new StarFire™ 6000 Receiver. Accurate, repeatable, and faster than ever. It offers a full range of differential correction levels ... including the new SF3 level, delivering 40% greater pass-to-pass accuracy of ± 3 cm, as well as ± 3 cm in-season repeatability. And thanks to 66% faster pull-in time, you get full accuracy access sooner. Just think of how valuable this makes the 1870 Air Drill or 4 Series Sprayer to your operation. That's precise performance that pays.



Twice the fans than the previous system, they're independently controlled, meaning no baffle splits airflow. And convenient valve handles let you fine-tune tank pressure for improved row-to-row accuracy. Need more accuracy? Try SectionCommand™ for an even higher level. You get a 4 to 6% savings on canola seed and fertilizer costs thanks to fewer skips and overlaps.

Beat weeds to the punch with the R4045 Sprayer to apply the right nutrient form at the right rate at the right time in the right place. 36 m booms and a 4,500 l tank let you cover more acres in fewer passes, while

Direct Injection helps you better manage mixing products on-the-go to greatly reduce rinsing time and complexity. Here's the latest: new ExactApply™ provides next level rate control – you get higher pulsing frequency for improved application coverage, regardless of field size or shape.

However you harvest, we have your back. The W155 Windrower cuts more crop in less time with speeds up to 19 km/h. Trust us, more crop is never too much thanks to the optional reverser to clear your platform of any plugs that may occur.

Or if all you do is combine, our S-Series are ready to run. The Dyna-Flo™ Plus cleaning system raises total combine capacity by 13%. That means 1.5 acres per hour of added time. What's more, Active Terrain Adjustment™ is a surefire way to get more performance over rolling terrain as it automatically adjusts shoe settings on inclines or declines. Then there's our tough crops package with Active Concave Isolation. With it you get 20% more throughput in tough threshing conditions. It also provides 10% increase in capacity while maintaining loss level.

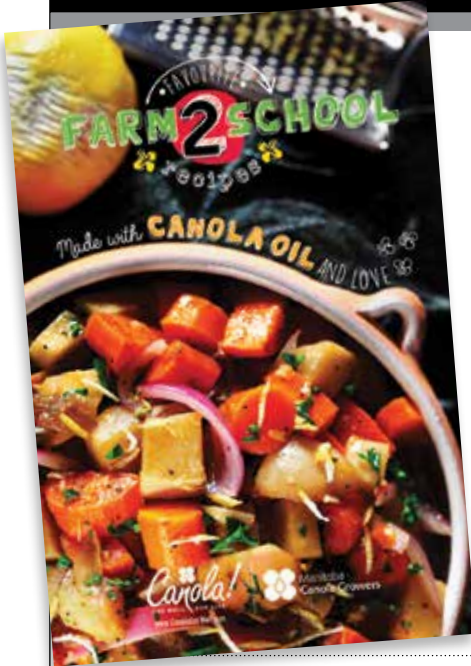


R4045 Sprayer



JOHN DEERE

JohnDeere.ca



The recipe book includes health tips like how adding canola oil to vegetables increases your intake of fat soluble vitamins A, E, D and K.

Farm to School

Over 65,000 vegetable bundles and recipe books have been distributed in Manitoba to school-aged children and families through a partnership with Peak of the Market, Manitoba Home Economists Association, Manitoba Government and the Manitoba Canola Growers Canola Eat Well consumer outreach.

Farm to School is a non-profit fundraiser that encourages healthy eating and earning money for the school or registered daycare. The children sell fresh vegetables and 50 per cent of the proceeds go back to the school or daycare. For more information about the program, check out www.FarmtoSchool.ca.

In 2015, the Manitoba Canola Growers Canola Eat Well supplied a recipe book for each order. The recipe booklet provides the practical application side of what to do once you get those delicious healthy vegetables home and into your kitchen and eventually on to your dinner plates. It showcases how you can make or bake with canola oil using all of the locally sourced vegetables. The recipe book also includes health tips like how adding canola oil to vegetables increases your intake of fat soluble vitamins A, E, D and K. Why is this so important? Vitamin A and D helps our eyes, teeth and bones grow to their full potential while vitamins E and K help to regulate our blood.

If you live in Manitoba, you received the Farm To School veggie recipe booklet as part of your subscription to the Canola Digest. If you are outside of Manitoba and want a free copy, please go to www.CanolaEatWell.com to order your copy.

Member dollars at work!

What do you get when the Manitoba Canola Growers Association, 20 canola farmers and the Manitoba Agri-Health Research Network get together? Another partnership!

The group has been studying virgin cold-pressed canola oil, meal and co-products from processing as part of a Canadian Climate Advantage Diet project funded by Growing Forward 2.

Recently, the partnership has been investigating additional values – like human food uses for the meal and industrial compounds in the residue left over from crushing.

Working with the Red River College culinary program, the group developed new food concepts; virgin canola oil gelato and a whipped topping (like a Hollandaise sauce) were two of the more innovative concepts.

New branding focuses on the location each variety is grown. As part of the Buy Manitoba program, the oils are currently available in the Red River Co-op food stores in Winnipeg, Morden and Winkler.

Manitoba Canola Growers Association's investment in the Canadian Climate Advantage Diet project will continue to investigate additional values to canola meal and co-products as part of the 2016-17 project plan.



1. New labels launched highlighting each location the oil is produced

2. Virgin canola oil gelato developed when working with the Red River Culinary program

3. Virgin canola oil whipped topping developed when working with the Red River Culinary program

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MANITOBA FARM WOMEN'S CONFERENCE -

November 20-22, Portage la Prairie

COVER YOUR ASSETS -

December 7, Neepawa

COVER YOUR ASSETS -

December 8, Roblin

CANOLA JUNIOR CURLING CHAMPIONSHIPS -

January 1-6, Winnipeg

CANOLA DAY AT AG DAYS -

January 17, Brandon

MANITOBA AG DAYS -

January 17-19, Brandon

CROPCONNECT CONFERENCE -

February 15 & 16, Winnipeg

MANITOBA CANOLA GROWERS ASSOCIATION ANNUAL GENERAL MEETING -

February 16, Winnipeg

FCC MEETING -

March 7, Brandon

CANOLAB -

March 15 & 16, Dauphin

The Pest Surveillance Initiative

The Pest Surveillance Initiative is a "molecular detection" laboratory (funded by the Manitoba Canola Growers Association) that works to track clubroot and other soil-borne diseases.

WHAT HAS BEEN GOING ON AT THE PSI LAB?



Harvested canola acres have held at around 20 million in Canada over the past four years, producing larger volumes that have served the big four markets and allowed for increased sales into second wave markets such as South Korea and Pakistan.

CANOLA MARKET SNAPSHOT

BY JAY WHETTER

Canada exports 90 per cent of its canola as seed, oil or meal to almost 50 markets around the world, bringing billions of dollars into Canada. This article provides a snapshot of canola production and processing in Canada, key markets for Canadian canola seed, oil and meal, and canola's competitors in the world vegetable oil market.

CANADIAN CANOLA PRODUCTION

Harvested canola acres have remained consistent at close to 20 million the past four years, down from an all-time high in 2012. The Canola Council of Canada's goal of 15 million tonnes of production and sales by 2015 was achieved and that benchmark seems well established, providing a good foundation for the next goal – 26 million tonnes of production and sales per year by 2025. This goal assumes 22 million acres of canola. Table 1 provides Statistics Canada numbers for the past five years, including an estimate for 2016-17.

CANADIAN CANOLA EXPORT MARKETS

Canadian canola exports have risen in step with production. China is the biggest market for Canadian canola seed, taking 45 per cent of seed exports in 2014-15 and 39 per cent in 2015-16.

(See the pie graphs.) The U.S. is the biggest market for Canadian canola oil, taking 67 per cent in 2014-15 and 64 per cent in 2015-16. The U.S. also takes most of our canola meal, importing 95 per cent in 2014-15 and 89 per cent in 2015-16.

Bruce Jowett, Canola Council of Canada vice president of market development, is encouraged to see China back in the meal market. "Our canola exports tend to rely on four big markets – the U.S., China, Japan and Mexico – but the meal market has been dominated by the U.S.," he says. "Our goal with market development is to not only grow the overall size of the pie, but to also grow the number of participants sharing the pie."

With meal in particular, the pie basically had just one participant. "The U.S. makes great use of our canola meal, especially in the dairy market, which is great obviously, but we're pleased to see China back," Jowett says. China wanted to make sure Canadian processing plants met Chinese approval for meal production before it would accept imports. At the same time, the CCC was working in China to help livestock and aquaculture producers understand how canola meal could fit into their rations. Meal exports to China in 2015-16 show that progress is being made on both fronts.

Jowett and his team also work in newer markets to expand their use of canola. South Korea



For more on key export markets for Canadian canola, go to canolacouncil.org/markets-stats/markets/

"Our goal with market development is to not only grow the overall size of the pie, but to also grow the number of participants sharing the pie."

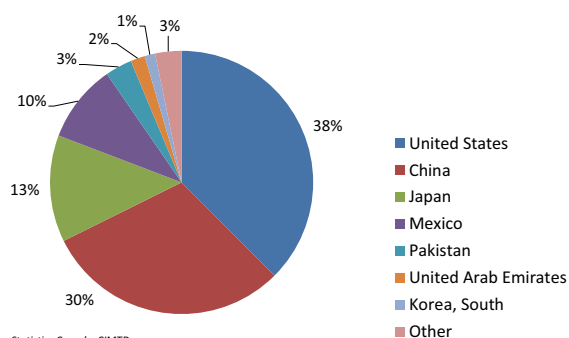
—Bruce Jowett

Table 1. Canadian canola acres, production, exports and domestic processing

	2012-13	2013-14	2014-15	2015-16	2016-17 (est'd)*
Harvested area (million acres)	21.7	20.2	20.6	20.6	19.6*
Production (million tonnes)	13.9	18.6	16.4	18.4	18.3*
Seed exports (million tonnes)	7.3	9.1	9.2	10.2	9.0
Domestic processing (million tonnes of seed crushed)	6.7	7.0	7.4	8.3	8.0

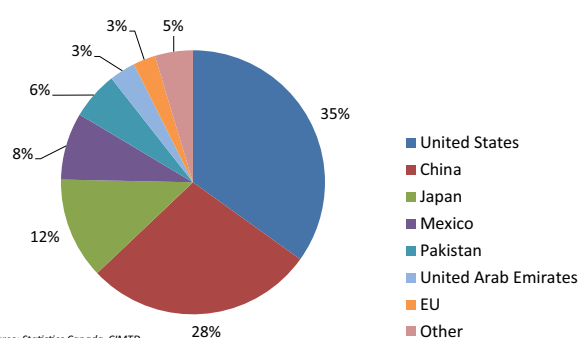
Source: Statistics Canada. *Based on the September report.

SHARE OF EXPORT VALUE - 2014/15 CROP YEAR



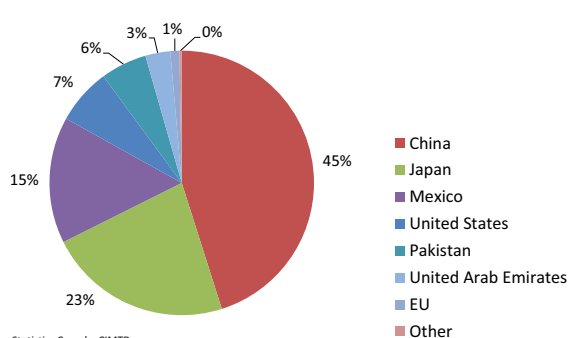
Source: Statistics Canada, CIMTD

SHARE OF EXPORT VALUE - 2015/16 CROP YEAR



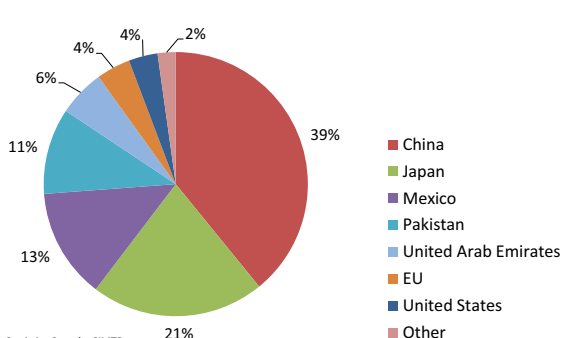
Source: Statistics Canada, CIMTD

SHARE OF SEED EXPORT VOLUME - 2014/15 CROP YEAR



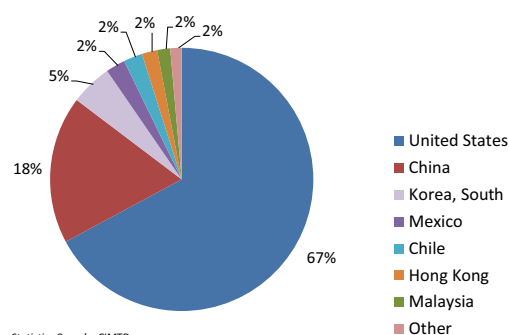
Source: Statistics Canada, CIMTD

SHARE OF SEED EXPORT VOLUME - 2015/16 CROP YEAR



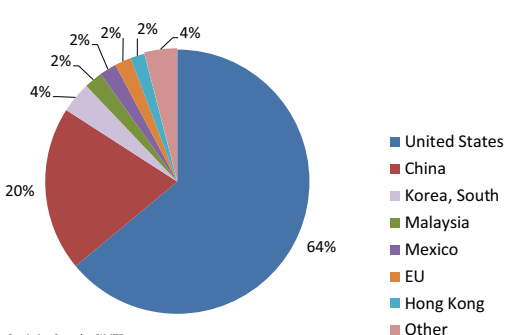
Source: Statistics Canada, CIMTD

SHARE OF OIL EXPORT VOLUME - 2014/15 CROP YEAR



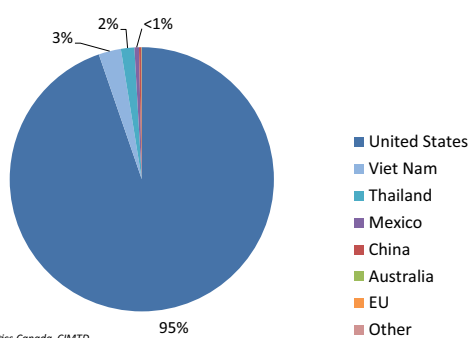
Source: Statistics Canada, CIMTD

SHARE OF OIL EXPORT VOLUME - 2015/16 CROP YEAR



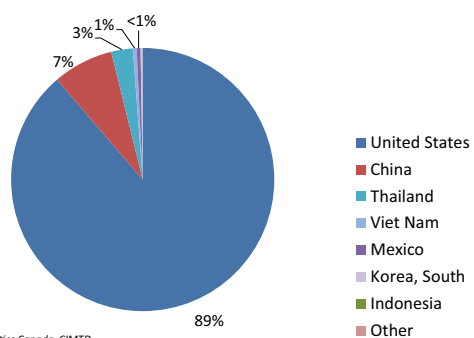
Source: Statistics Canada, CIMTD

SHARE OF MEAL EXPORT VOLUME - 2014/15 CROP YEAR



Source: Statistics Canada, CIMTD

SHARE OF MEAL EXPORT VOLUME - 2015/16 CROP YEAR



Source: Statistics Canada, CIMTD

has emerged as a significant customer among these second-wave countries.

“A lot of Canadian canola oil that goes into South Korea is sold as bottled oil in gift boxes, given out during Thanksgiving and Lunar New Year,” Jowett says. “Canola is the No. 1 or No. 2 off-the-shelf oil in South Korea.” Next steps for South Korea are to help people understand the value of the gift oil they’re receiving, and to get food processors and restaurants to use more canola oil.

Pakistan is another potential growth market, which – interestingly – is buying far more Canadian canola than its much larger neighbour, India, which buys almost none. Pakistan accounted for six per cent of Canadian canola seed exports in 2014-15 and 11 per cent in 2015-16.

“Pakistan tends to be a price-sensitive market, which we think has driven the rise in sales over the past two years,” Jowett says.

GLOBAL OILSEED PRODUCTION AND TRADE

USDA figures put total global canola and rapeseed exports for 2015-16 at 14.60 million tonnes. Statistics Canada puts canola exports of 10.2 million tonnes for 2015-16, accounting for 63 per cent of global trade. Global canola and rapeseed oil exports were 4.16 million tonnes in 2015-16, according to the USDA, of which 2.80 million – 67 per cent – came from Canada.

While Canada is the major canola seed and oil exporter, canola is third globally behind soybean and palm. Soybean dominates global oilseed exports, with 132.8 million tonnes traded in 2015-16. (See Table 2.) Canola and rapeseed are a distant second in seed trade. Palm, technically not an “oilseed”, is the major player in global vegetable oil production and trade. Palm oil edges soybean oil in global production and is by far the most dominant vegetable oil exported around the world. (See Table 3.) 🌻

—Jay Whetter is the editor of *Canola Digest*.

Table 2. Global production and exports of major oilseed crops

	2012-13	2013-14	2014-15	2015-16	2016-17 (August forecast)
<i>Seed production (million tonnes)</i>					
canola/rapeseed	64.06	71.67	71.45	68.37	67.16
coconut	5.72	5.42	5.43	5.31	5.51
cottonseed	46.37	45.02	44.33	36.99	38.55
palm kernel	15.09	15.98	16.57	15.95	17.42
peanut	39.79	41.40	39.84	40.47	41.09
soybean	268.57	282.46	319.78	312.67	330.41
sunflower	34.99	41.61	39.42	39.34	43.32
<i>Seed exports (million tonnes)</i>					
canola/rapeseed	12.56	15.10	15.07	14.60	13.54
coconut	0.07	0.11	0.11	0.09	0.08
cottonseed	0.92	0.84	0.65	0.52	0.61
palm kernel	0.04	0.04	0.03	0.04	0.04
peanut	2.66	2.90	3.30	3.61	3.79
soybean	100.80	112.72	126.13	132.80	138.97
sunflower	1.45	1.96	1.66	1.81	1.53

Source: USDA August 2016 <http://apps.fas.usda.gov/psdonline/circulars/oilseeds.pdf>

Table 3. Global production and exports of vegetable oil

	2012-13	2013-14	2014-15	2015-16	2016-17 (August forecast)
<i>Oil production (million tonnes)</i>					
canola/rapeseed	25.69	27.26	27.63	27.63	26.64
coconut	3.62	3.38	3.37	3.42	3.41
cottonseed	5.22	5.17	5.13	4.50	4.58
olive	2.50	3.19	2.54	3.09	3.01
palm kernel	6.72	7.13	7.39	7.16	7.66
palm	56.38	59.34	61.64	59.40	65.50
peanut	5.47	5.67	5.54	5.43	5.62
soybean	43.10	45.13	49.06	52.14	53.82
sunflower	12.90	15.52	14.91	15.13	16.55
<i>Oil exports (million tonnes)</i>					
canola/rapeseed	3.95	3.83	4.07	4.16	4.15
coconut	1.91	1.73	1.94	1.78	1.78
cottonseed	0.16	0.14	0.14	0.09	0.10
olive	0.91	0.86	1.02	0.94	0.97
palm kernel	3.26	2.88	3.22	2.99	3.17
palm	43.11	43.19	47.47	45.57	48.02
peanut	0.17	0.20	0.25	0.25	0.23
soybean	9.36	9.46	11.10	12.17	11.69
sunflower	5.57	7.77	7.39	7.89	8.78

Source: USDA August 2016 <http://apps.fas.usda.gov/psdonline/circulars/oilseeds.pdf>

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Chinese guidelines advise consumers to keep total fat intake to 20-30 per cent of total daily calories, primarily from healthy unsaturated fats. The guidelines should help make canola oil more competitive in this important market.



Canadian Agriculture Minister Lawrence MacAulay, Chinese Nutrition Society President Assistant Songming Du and Canola Council of Canada Vice President of Market Development Bruce Jowett celebrate the announcement of a new working relationship between CanolaInfo and the Chinese Nutrition Society in Beijing June 1.

Credit: Wang Xueqing.

CANADIAN CANOLA OIL FITS WITH NEW CHINESE DIETARY GUIDELINES

BY ANGELA DANSBY

Canola oil can help Chinese consumers meet the new dietary guidelines released by the Chinese Nutrition Society May 13, 2016, said Lawrence MacAulay, Canada's Minister of Agriculture and Agri-Food, at an event June 1 that celebrated a Sino-Canadian working relationship in Beijing. Canola is the number two imported oilseed and number three imported cooking oil in China, which leads the world in vegetable oil consumption.

"Canola oil has the potential to significantly improve Chinese public health, especially as consumers become more aware of its benefits," said MacAulay, who participated in a cooking demo with canola oil and Chef Yuanjun Yang of the Four Seasons Hotel Beijing (as shown on the cover photo.) "CanolaInfo – with the support

of the Canadian government – is committed to raising this awareness. This will help make Canadian canola oil more competitive in an important market such as China."

The new Chinese guidelines advise consumers to keep total fat intake to 20-30 per cent of total daily calories, primarily from healthy unsaturated fats. *Trans* fat intake should be minimized by everyone at no more than two grams per day and saturated fat intake should be limited. Both of these unhealthy types of fats should be replaced by mono- and polyunsaturated fats.

The guidelines also recommend up to 30 grams (two tablespoons) of cooking oil per day for most ages, and no more than 25 grams for children aged four to seven years and 20 grams for two-year olds. That's because cooking oil is



Above: Canadian Agriculture Minister Lawrence MacAulay cooks with Chef Yuanjun Yang of the Four Seasons Hotel Beijing at a June 1 CanolaInfo media event to show the great performance of canola oil in Chinese cuisine.

Photo credit: Wang Xueqing.

an important source of essential fats (omega-3 and omega-6) and vitamin E.

“Low in saturated fat with zero *trans* fat, canola oil is an ideal source of fat for Chinese consumers,” noted Bruce Jowett, vice president of market development for the Canola Council of Canada. “Moreover, scientific studies show that canola oil reduces the risk of heart disease when used in place of saturated fat. Considering canola oil accounts for nine per cent of China’s vegetable oil imports today, it is already contributing to the nation’s health.”

CanolaInfo, the global promotion program for canola oil of the Canola Council of Canada, has been working in China since 2014. It is affiliating with the Chinese Nutrition Society to promote awareness of healthy fats and canola oil among dietitians and consumers.

“A variety of cooking oils, including canola oil, fit into China’s new dietary guidelines,” said Dr. Songming Du, president assistant of the Chinese Nutrition Society. “Using vegetable oil instead of solid fat for everyday cooking is an easy change consumers can make to increase the intake of unsaturated fat and reduce the intake of saturated fat. This will help decrease their risk of heart disease.”

Canola oil has about half the saturated fat (seven per cent) of olive (14 per cent), soybean (16 per cent) and peanut (17 per cent) oils – and the most plant-based omega-3 fat (nine per cent) of all common cooking oils. It is a good source of vitamins E and K. Canola oil is also extremely versatile with a neutral flavour and colour, light texture and high heat tolerance (smoke point of

242°C/468°F). These many benefits cost only a few jiao per serving.

Canada is the primary supplier of canola to China, Jowett noted. It exported nearly four million tonnes of canola seed and 608,000 tonnes of oil there in 2015 alone.

“Canola oil is one of Canada’s greatest exports and China is one of our largest customers,” he concluded. “Our oil can help Chinese consumers meet the new dietary fat recommendations and ultimately,

reduce heart disease risk when used in place of saturated fat. CanolaInfo is proud to promote these objectives.” ✕

— Angela Dansby is international communications manager for CanolaInfo based in Brussels. Funding for this project has been provided by Agriculture and Agri-Food Canada through Growing Forward 2, a federal – provincial – territorial initiative

See the cover photo by Wang Xueqing

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WHY JACK IN THE BOX USES CANOLA OIL

BY JAY WHETTER

American fast-food chain Jack in the Box has 2,200 restaurants, each with three to five fryers holding 30 pounds of oil. All of it is canola oil.

“We embrace our frying,” says John Pugh, Jack in the Box menu strategy category leader. “We have an attitude and mindset about frying that sets us apart from other brands.”

Jack in the Box fries 15 menu items – including french fries, of course, but also egg rolls, jalapeño poppers and tacos.

“Craveability” is basically the company’s motto, and it drives their decisions. They use a “salty, hot and delicious” menu to meet the craveability goal, and the bank of fryers in each restaurant plays a central role. “Oil quality has a dramatic impact on the quality of our final product,” Pugh says.

The decision to use high-oleic canola oil was not taken lightly.

Jack in the Box was using partially-hydrogenated shortening but, like many other quick service restaurants (QSRs), was driven to switch by new regulations in many states that put a limit on *trans* fat content in food. Jack in the Box started testing canola oil in 2008. In a recent review of its

various combinations of them all – including 60:40, 50:50 blends,” says Rochelle Perez, manager of the Jack in the Box quality program. In the end, the company went with high-oleic canola oil.

Cargill tests and sells all base-line commodity oils as well as its specialty oils, which includes canola oil. “Our goal is to provide the oils our customers need,” says Irena Hall, national account sales manager for Cargill. “Where they need support, we provide testing for them.”

For Jack in the Box, Cargill’s high-oleic canola oil met its flavour goals at the right cost and fry life. Fry life is huge.

Jack in the Box does all it can to extend fry life while producing food with consistent taste and colour. Fryers are set at 365°F and each fryer in a restaurant has a specific role: One for fries, one for tacos and one or more for chicken, onion rings and jalapeño poppers. Each fryer is filtered twice a day and skimmed every 15 minutes.

Given the importance of frying oil to the company’s bottom line, comparative price and quality standards are evaluated all the time. “My job is to make sure we’re providing the best quality and best fry life at a reasonable cost for our franchisees,” says

In a recent review of its oil source, Jack in the Box tested 45 different oils and oil combinations at Cargill’s innovation centre in Fort Collins, Colorado.

oil source, Jack in the Box tested 45 different oils and oil combinations at Cargill’s innovation centre in Fort Collins, Colorado.

“We looked at corn, cottonseed and soy oil as well as canola oil, and

Perez. “We’re always looking for ways to save money.”

Fast food restaurants can’t change prices quickly, so they want to keep market prices for their input ingredients as consistent as possible. “If we





Manitoba canola grower Jason Claey and Cargill's Irena Hall stand outside a Jack in the Box restaurant in San Diego, California.

can price 24 months out, we will," says Derek McNamara, senior purchasing manager in Jack in the Box's commodity risk management department. He is responsible for pricing all ingredients, including oil, meat and salt.

Cargill, with its integrated supply chain, works with customers like Jack in the Box as well as growers to keep both sides interested.

Jason Claey, who farms at Deloraine, Man., is one of those growers. He was one of seven growers Cargill invited to tour Jack in the Box headquarters in San Diego in March. "Being able to meet the end user and see the supply chain from their perspective tied the market together for me," Claey says. "We're trying to make money and so are they."

Claey was impressed with Jack in the Box's oil testing and selection process, its long-range pricing and continued evaluation. "There is so much going on behind the scenes just to make some fries," he says.

CANOLA'S COMPETITION IN FAST-FOOD FRYERS

The Canola Council of Canada's Keep It Coming goal for 2025 is to have 22 million total acres of canola, one third of which would be high-oleic and

other specialty types. Currently, about one eighth of Canadian canola acres are seeded to specialty oil varieties.

Erik Heggen, president of refined oils North America with ADM, says the transition away from partially-hydrogenated vegetable oils at QSRs in the U.S. has improved demand for specialty canola oils. Partial hydrogenation creates trans fats, which are seen as negative for human health.

QSRs and food processors also consider labeling goals (low saturated fat, for example), nutrition, sustainability and – importantly – functionality when choosing an oil, Heggen says.

High-oleic canola oil can meet the need in some cases, but it has lots of competition. Corn, peanut, cottonseed and NuSun sunflower oils are naturally stable. High-oleic versions of soybean and palm oil are also available.

"High-oleic palm is not prevalent now but could be a big deal," Heggen says.

"Clean labels" are another consideration in the decision, notes Heggen. Some food processors don't want to have palm on their labels. Some want to be trans fat free. Others want to be non-GMO.

The current advantage for high-

oleic canola oils, Heggen explains, is their low saturated fat content, blendability and consistent price and supply. "Consistency of quality and supply is worth a lot to the food industry," he says.

TOWARD 2025

Heggen also says that while adoption of high-oleic canola oil is taking off, one barrier to growth could be the premiums paid to growers. "Premiums are necessary to generate supply at the beginning of the lifecycle, but you need customers and refining partners who will take on that cost," he says. "Premiums will have to be lowered incrementally."

Would Claey, who currently seeds all his canola acres to specialty varieties, keep growing specialty canola in that situation? "If the premium was gone I would definitely limit my acres," he says. "Yields for the specialty varieties are usually close to the standard varieties, and having all my canola picked up in the yard is a factor. But the premium is the major reason I grow these varieties."

Moving toward the Canadian canola industry goal of seven million or so specialty canola acres by 2025 will require growers, obviously, but is that goal realistic?

Hall at Cargill says market growth for specialty canola oils is maturing. "In North America, our total population is becoming older and as people age they tend to eat less," she says. "So while the market continues to experience growth over time, consumption will slow. Perhaps there is an opportunity to develop a higher-nutrient canola plant that will meet the needs of our aging population?"

That's the kind of thing Jack in the Box would watch for – perhaps as a way to keep its younger clientele coming back for years and years.

"I always look for potential options," Perez says. "We're trying to stay on top of trends and make sure we're not missing something." ❀

—Jay Whetter is the editor of *Canola Digest*.



"Consistency of quality and supply is worth a lot to the food industry."

—Erik Heggen



HONEST ENGAGEMENT

BY SANDI KNIGHT



Talking *biotech*

Kevin Folta, professor at the University of Florida and winner of the 2016 Borlaug CAST Communication Award, offers this advice on discussing plant biotechnology.

✓ DO

- Talk about shared values and common concerns. "Like you, I want my kids to eat healthy food." "My family lives on the farm. I care about the farm environment. Here's what I do..."
- Have honest conversations about what you know. If you don't believe it, don't say it.
- Disengage when attacks become personal. It is unproductive to continue.
- Talk about ethics, your experience and your priorities. Remember you cannot fight fear with facts.
- Sign up for social media accounts such as Twitter, Instagram and Facebook. Follow other advocates. Even if you don't create content, you can have a tremendous impact by "sharing" good work.

X DON'T

- Use the "feed the world" rhetoric.
- Dodge discussions on the limitations of genetic modification (GM). See Folta's slide deck for more: www.slideshare.net/KevinFolta
- Claim that GM is a single solution. It is not.
- Discount other production methods or tools. All tools are needed going forward.
- Discredit other forms of genetic improvement, such as mutagenesis.



FOLTA'S TAKE-AWAY: We have the safest, most diverse and abundant food supply in history. We also have immediate access to information — good and bad. If we engage incorrectly, we make the broken lines of communication between consumers, scientists and farmers worse. Listen to Kevin Folta's "Talking Biotech" podcast: www.talkingbiotechpodcast.com

The *real* dirt

The Real Dirt on Farming is a valuable resource magazine from Farm & Food Care Canada, a national charity with the vision to build public trust and confidence in food and farming in Canada. Read The Real Dirt and more at www.farmfoodcare.org.

"It is harder to be for something than against," says Kelly Daynard, communications manager with Farm & Food Care.

When engaging with consumers, listen first, she says, and use these tools to improve the conversation:

- Don't discount consumer fears. Acknowledge that they're allowed to be concerned.
- Communicate within your comfort zone. You don't have to be a public speaker.
- Make yourself available. Volunteer for organizations like Ag In The Classroom and producer organizations.
- Use resources from farmfoodcare.org, including the Ag Awareness Toolkit and Communications Training.

With less than two per cent of Canadians living on farms, consumers have a huge disconnect from producers. Surveys show consumers want to learn more. In order to give them credible information, farmers and others in the ag industry need to speak up and “advocate”.

Biotech canola

Canola production today is more sustainable than ever. While canola production has steadily increased, farmers have used fewer pesticides in lower quantities, burnt less fuel, sequestered more CO₂ and earned higher incomes from canola than ever before.

1 1/2
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(OR 19 GRAMS)

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THE RISK OF CORONARY
HEART DISEASE

ENVIRONMENTAL
IMPACT

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86%
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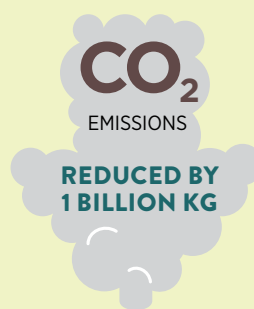
SAW REDUCED
SOIL EROSION

Canola oil is absolutely safe & nutritious. Families in over 40 nations around the world choose canola oil because it contains the least amount of saturated fat (only 7 per cent) of any common cooking oil and may help protect the heart.

Biotech canola helps reduce agriculture's environmental impact. Farmers care about the health of the land and environment. Technologies like biotech canola mean growers can now use fewer herbicides.

Biotech canola protects the health of our soil. We used to rely on tilling the soil to remove weeds from our fields. It dried out the soil, leading to erosion and reduced fertility. Biotech crops like Canadian canola are tolerant to herbicides. By spraying herbicides on our fields, we can control weeds while protecting our crops and soil.

Find more canola innovation information at canolastory.ca



GM CANOLA
PRODUCES
SAME OIL

Biotech canola allows us to reduce greenhouse gas emissions. We save fuel when we don't need to till our fields to control weeds, spending less time operating the tractor, thus producing fewer greenhouse gas emissions. In just one year of growing Canadian canola, farmers saved one billion kilograms of carbon dioxide – that's equivalent to removing nearly 500,000 cars from the roads!

Both GM and conventional canola produce the same oil. The modification has been made to only one canola gene and it is a protein. Processing removes all proteins from canola oil.

Conclusion

Don't get bogged down in the science and terminology. Tell your story, your way. Explain how precision plant breeding benefits your farm, the environment and food production.

Read, watch videos, listen to podcasts, learn from others, practice telling your story and share others. Remember if you don't have an answer to someone's question, it is okay to say, "I'll look into that and get back to you." Add your voice to the conversation – everyone's is needed. If we don't tell our stories, who will?

More resources

Watch License to Farm, a documentary exploring the role of science, sustainability and food safety in modern agriculture. www.licensestofarm.com

Ag More Than Ever

www.agriculturemorethanever.ca/resources

Ask the Farmers www.askthefarmers.com

Jon Entine's Genetic Literacy Project
gmo.geneticliteracyproject.org

Jon Entine's Genetic Literacy Project

Jon Entine of the Genetic Literacy Project encourages you to know and tell your farm's sustainability story. "When you talk to people, focus on the 'why' you do what you do, not the 'how'," Entine says. Why did you adopt advances in science and technology? Why is your farm and the environment around you better because of those advances? Stress your role as a farmer in producing low-priced food, he says. His website gmo.geneticliteracyproject.org is a useful resource for GMO questions and answers.

To have a productive conversation about farming...

Be a good listener



Be positive



Be yourself



Be understandable



Keep it short and simple



Make it relevant



Make it interesting



Be sincere and honest
when answering.

Source: Farm & Food Care Canada

IN FAVOUR OF SCIENCE-BASED TRADE RULES

BY ALEX DE PAPE

Farmers are continually faced with decisions that have implications months or even years out. Some decisions are made with a high level of predictability, while others have less certainty. When predictability is less certain, farmers often take steps to reduce those risks – for example, purchasing crop insurance to curtail production risk or using futures to manage price risk.

But how often do farmers consider the predictability of access to markets? While usually stable, market access can change and, when it does, there can be significant ramifications along the entire supply chain. For a crop like canola, where 90 per cent of the crop is exported, having a level of certainty about market access is critical.

“Unstable markets mean price volatility and uncertain demand. For growers, they’re planning a long way in advance for the crop that they grow, which means that they’re making decisions months in advance for what the potential returns will be,” says Brian Innes, vice president of government relations at the Canola Council of Canada. “If you’re on the seed development side, you’re making investments years in advance.”

Farmers can’t buy market access insurance, but collectively, the canola industry and the Canadian government are working to minimize market access risk. They’re doing this through individual country-to-country negotiations (as in the case of China and blackleg), through regional trade agreements such as the Trans-Pacific Partnership, and through international MRLs being established. The collective goal is to build trade rules based on scientific

evidence, which creates more stable and predictable markets.

Scientific evidence deals with facts. Having science-based rules for trade puts facts at the centre of the conversation – making it easier for countries to study, discuss and resolve trade issues. Limiting trade regulations to those justified by scientific evidence can also prevent costly rules from being imposed.

“Requiring trade regulations to be based on science means that we can avoid having arbitrary and costly measures imposed on the Canadian industry,” says Innes.

The World Trade Organization (WTO) has clear science-based rules regarding animal and plant health, commonly referred to as sanitary and phytosanitary (SPS) measures. To promote fair and transparent trade rules, governments from member countries of the WTO must follow the SPS Agreement. The agreement states that “members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence.”

The recent trade dispute between Canada and China highlights the importance of science-based trade rules. At the centre of the dispute was China’s intent to lower the dockage levels of Canadian canola from 2.5 per cent to one per cent to protect China’s domestic crop from blackleg.

Rick White, chief executive officer of the Canadian Canola Growers Association, says there wasn’t scientific justification for moving to the lower dockage standard. “The canola industry completed joint studies with

China and the evidence didn’t justify moving down to one percent dockage.”

“Without facts, regulatory approaches can be used as an artificial trade barrier,” says White, “but if you apply scientific rigour, legitimate science-based concerns regarding plant health can be resolved.”

While countries have the ability to impose restrictions based on legitimate reasons to protect plant, animal and human health, Innes says all countries in the WTO have agreed that governments should only put restrictions in place when they are needed. Other issues should be left to the commercial terms of trade negotiated between the customer and the supplier.

“For Canada, a country that is very dependent on its trade and exports, science-based regulations are very important,” says Frederic Seppey, chief agricultural negotiator for Agriculture and Agri-Food Canada (AAFC).

“AAFC continues to press Canada’s trading partners for the implementation of science-based, transparent and predictable regulatory frameworks to facilitate the trade of agriculture and agri-food products, so as to allow our producers and exporters access to global markets,” says Seppey. “AAFC also maintains a dynamic dialogue with Canada’s grains and oilseeds industry to coordinate our approaches to engagement with international markets.”

For White, science-based regulations level the playing field for all. “Sticking to the science is the predictable safe ground; there are no ulterior motives,” he says. “Science withstands the test of time and it’s the right way to increase predictability in export demand.” ✿

“Without facts, regulatory approaches can be used as an artificial trade barrier, but if you apply scientific rigour, legitimate science-based concerns regarding plant health can be resolved.”

—Rick White

—Alex De Pape is a writer at Suckerpunch Creative.

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U.S. Congress passed a new National Bioengineered Food Disclosure Standard, which will require food manufacturers to disclose any genetically-modified ingredient in their products.

GM LABELLING: A CAT AND MOUSE GAME?

BY MAXIM LEGAULT-MAYRAND

Mandatory labelling of genetically modified (GM) food has been getting a lot of attention in the United States. Whether it should be mandatory or voluntary has been widely disputed for decades. After numerous attempts, the activist cat finally caught the mandatory GM labelling mouse. The battle ended over the summer; the U.S. Congress passed a new law requiring mandatory GM disclosure.

This national law was a direct response to and overrides Vermont's GM labelling law that came into effect July 1, making it the first state in the U.S. to require GM labels in grocery stores.

"This national law prevents a patchwork of differing and inconsistent local rules," says Frank Swain, partner at FaegreBD and the Canola Council of Canada's Washington-based counsel. "Food manufacturers will now not have to worry about segregating their supply chains to meet multiple requirements."

This new mandatory GM labelling law, officially known as the *National Bioengineered Food Disclosure Standard*, will require food manufacturers to disclose any GM ingredient in their products.

Regulations detailing how the law will come into effect will be developed over the next two years. Details yet to be defined include how products that do not contain any GM material but originate from GM plants – such as refined canola oil that does not contain any traces of GM protein and is identical to canola oil from non-GM canola – will be captured by the labelling law.

The new law specifies a number of ways that this information can be disclosed: text, symbol, electronic or digital link such as using a QR code, little square codes used on advertisements, billboards, business windows and products. A simple scan of the QR code with a mobile device lets consumers easily access detailed information about a product.

These QR codes allow food makers to communicate a lot more information than can fit on a product label, though the activist community contends that few consumers routinely access them with their smartphone. Many activists refer to this law as the new "Deny Americans the Right-to-Know" Act (DARK Act) and vow to continue pressing for GM labelling on the package. However, industry food labels are evolving and QR codes are increasingly common.

"Requiring food manufacturers to disclose information rather than state it on the package was a compromise reached by Congress at





Credit: iStock.com/gilaxia

Breakdown of GM Labelling Requirements for Canola Oil in Major Markets

Canada:	No mandatory GM labelling laws. GM labelling of canola is not required.
United States:	A bill requiring the disclosure of GM ingredients was passed on July 29, 2016. It is unclear if labelling of canola oil will be required – further detail will be defined in regulations.
Mexico:	No GM food labelling laws. GM labelling of canola oil is not required.
China:	Mandatory labelling of many GM foods. Canola oil is subject to mandatory GM labelling.
Japan:	Mandatory labelling of many GM foods. Canola oil is not subject to GM labelling.
European Union:	Mandatory labelling of nearly all GM foods. Canola oil is subject to mandatory GM labelling.

the eleventh hour after much back and forth,” says Swain. “It was an eloquent solution to a tough challenge, relaying information to consumers without creating unjustified concern.”

Tension persists between groups advocating for mandatory GM labelling by claiming their “Right to Know” and the food industry that opposes mandatory labelling of a breeding technique that produces food that has been deemed the same as food from other breeding techniques.

In fact, teenage GMO-labelling activist Rachel Parent is bringing attention to GM food and whether there is a need to label it in Canada. Recent announcements by Health Canada, and the Canadian Food Inspection Agency on the approval of the “Arctic Apple” and the “AquAdvantage Salmon” are also providing grist to activists promoting the labelling of GM foods.

Canada currently has standards that allow manufacturers to label their products as not containing GM ingredients. A national standard developed by the Canadian General Standards Board, a federal government organization, provides voluntary guidelines proposing claims such as “products of genetic engineering” or “not products



“Labelling genetically modified foods may lead to unnecessary fear and confusion for consumers about the safety of their food when in fact Canadian food, including that enhanced through biotechnology, is among the safest in the world.”

—Ian Affleck

of genetic engineering”. However, if there is a difference between the conventional product and the GM product related to an allergy that could create a health or safety concern, Health Canada requires GM labelling.

For decades, GM foods have been considered safe by government agencies like the Canadian Food Inspection Agency. “Mandatory GM labelling doesn’t fit with how we label foods in Canada, which is strictly to provide information related to safety and nutrition,” says Ian Affleck, managing director of science and regulatory affairs for plant biotechnology at CropLife Canada. He says that mandatory GM labelling would, therefore, give consumers the impression there is something unsafe about GM.

The issue of whether to require some form of labelling on GM foods has simmered for some time in Canada and a debate in Parliament could happen this fall. Quebec MP Pierre-Luc Dusseault has introduced a private member’s bill in the House of Commons calling for mandatory labelling of any genetically modified foods offered for sale, which is similar in principle to the hardline GM labelling law from Vermont, recently overridden by U.S. Congress. If this

bill is debated, it will be the first such discussion on GM labelling in the House of Commons.

Canada is not alone in pondering mandatory GM food labels. Countries around the world continue to see the emergence of national laws, international norms and guidelines as well as private standards on GM labelling. Some countries have more stringent laws, while others have numerous exceptions, no defined labelling threshold or a vague law that lacks implementation and enforcement provisions.

The debate on GM labelling is about a balance between consumer rights to information on food and the role of government in requiring information disclosure of products. A food label remains a fundamental tool to provide consumers information about the food that they eat. Will GM labelling change consumer habits? Will mandatory disclosure come to Canada? Many questions remain. It is too soon to tell. ❀

—Maxim Legault-Mayrand is the market access manager with the Canola Council of Canada in Ottawa.



Credit: iStock.com/anandart

Fundamental transportation issues remain

Grain moved well over the past crop year, but important fundamental changes are required to maintain these same successes over the longterm.

BY STEVE PRATTE



Credit: iStock.com/Chris Leachman

All indicators show that grain moved well along major corridors over the 2015-16 crop years. Can farmers expect that success to carry on through this winter? The railways have stated publicly that they're committed to working with shippers to move a large harvest. Fundamentally though, the relationship remains the same and change must occur for the grain industry to achieve long-term stability.

STRONG MOVEMENT IN 2015-16

According to Canadian Grain Commission data, Canadian farmers delivered 52.1 million tonnes of grain during the 2015-16 crop year, with 40.3 million exported and 15.4 million domestically processed. Rail largely responded to this demand,

according to data reported by the Ag Transport Coalition (ATC), as both CN and CP supplied 87 per cent of total hopper car orders to Western Canadian grain shippers in the week they were ordered. As in previous years, some corridors fared better when receiving cars.

The federally-appointed grain monitor reported that mainline bulk grain movement to Vancouver and Thunder Bay were similarly strong. Just under 380,000 bulk grain cars were unloaded at the major ports (10 per cent over the five-year average), carrying just over 34 million tonnes of grain (12 per cent over the five-year average). Other system metrics also indicated a relatively fluid system.

These are positive numbers for the grain industry. However, the reliable movement was not due to changes in the railway-shipper relationship. In

fact, pronounced downturns in bulk commodities like oil products, minerals, potash and coal likely contributed to the service received by the grain sector in 2015-16.

TESTING THE SYSTEM

When pressures from the grain industry and other bulk commodity industries return, will rail service respond? The system may very well be tested by a large harvest this season. The major grain companies informed government and the railways in late June of their early Western Canadian crop size estimates. Those numbers are significant: a minimum of 63 million tonnes, an average size around 68 million tonnes and a potential high-end of 74 million tonnes.

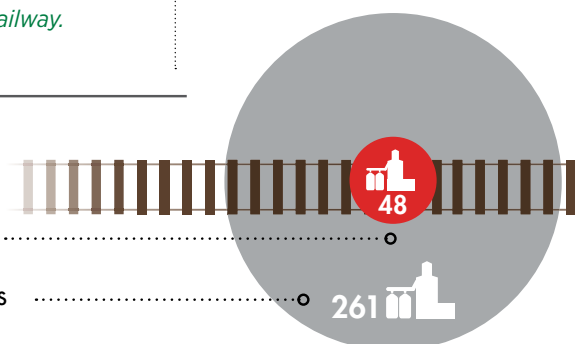
Interswitching limits give elevators better access to the lines of a competing railway.

ONLY 4 OUT OF THE TOTAL 326 GRAIN ELEVATORS IN WESTERN CANADA HAD DIRECT ACCESS TO BOTH CLASS 1 RAILWAYS. INTERSWITCHING IMPROVES ACCESS.

EFFECT OF INTERSWITCHING

48 Elevators within 30 km radius

261 Elevators within 160 km radius



While it isn't the 78-million-tonne figure from 2013-14, farmers still rely on rail to move their grain, and changes are required to ensure a large crop this year and even larger crops in future years can get to market in a timely fashion.

TWO FUNDAMENTAL CHANGES NEEDED

For farmers to access reliable and efficient rail transportation over the longterm, two fundamental changes to the railway-shipper relationship must occur:

1. The definition of "adequate and suitable" accommodation in the *Canada Transportation Act* must be strengthened.

Canada's canola farmers and the grain industry as a whole cannot capitalize on global market opportunities when the ability to get product to port is, in effect, governed by the railways. Railway service, therefore, must be demand-driven, not supply-driven.

2. Shippers should be allowed two-way performance penalties within Arbitrated Service Level Agreements.

Contracts are the key to all commercial relationships, and penalties through railway tariffs have bound Canada's grain shippers. This effectively means that everyone – from farmers to the grain company, from port terminal to the customer abroad – except the railway pays if they don't perform. Shippers need a legislative backstop for railway penalties, and a two-way penalty would accomplish that.

ONGOING ACTIVITIES

To address these issues, the grain industry had been focused on the accelerated review of the *Canada Transportation Act* and the report delivered in December 2015. Currently, the government is consulting on a vision for transportation moving forward and using the report as one of the inputs.

The government now has to decide if and how it will address the recommendations of the review report and weigh those against what producer groups and the grain sector have clearly told them.

There has been progress. Earlier this year, the federal government extended interswitching limits another year to August 2017. This increases the potential access of an elevator to the lines of a competing railway. While just 48 elevators have direct access under the previous 30 km interswitching limits, 261 elevators have potential access with extended interswitching of 160 km in place. Seeing these limits extended permanently is another priority for shippers.

There is still work to be done. Farmers and industry must remain

Farmers and industry must remain vocal about rail transportation issues, even in the midst of positive grain movement.

vocal about rail transportation issues, even in the midst of positive grain movement. The entire sector is critically reliant on railway transport and its performance truly affects all stakeholders in the grain supply chain – beginning at the farm gate. ✿

— Steve Pratte is a policy development manager with the Canadian Canola Growers Association (CCGA) in Winnipeg.

Who Pays *if They* Don't Perform?



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Marketing strategy starts here

Futures can be high or low and basis can be wide or narrow. That means the market is always in one of four situations – high futures, wide basis being one example. Here are marketing approaches for each situation.

BY STAN JEEVES

The two factors in a cash price are futures and basis. Futures price minus basis is the cash price. This article will review ‘futures’ and ‘basis’ then explain the four futures-basis situations and what to do in each.

FUTURES

Canola futures are traded at the ICE Winnipeg Commodity Exchange. Good global interest in a particular futures market adds liquidity, which means futures prices move minute to minute and getting in and out of the market is fairly easy. The canola futures market is fairly liquid, making it a good pricing tool.

ICE has canola futures for five delivery months: January, March, May, July and November. If, for example, November 2016 futures prices are lower than March 2017 futures, the market is said to be “carrying”. Based on market knowledge on that day, the market thinks prices will go up. If November 2016 prices are higher than March 2017, the market is “inverted”, which indicates strong near-term demand.

On September 9 when this article was written, the WCE November 2016 canola futures opened at Cdn\$462.40 per tonne, March 2017 opened at \$475.00 and July 2017 opened at \$485.10 – a “carrying” position. On that day, the market expected prices to go up through the marketing year.

As a reference, growers can also watch soybean and soy oil futures from Chicago Mercantile Exchange,

two major influences on the canola futures prices.

BASIS

Basis tends to vary based on local competition for grain, seasonal demand and transportation issues. Canola basis can range from \$60 under (very wide) to \$0 (very narrow), but these tend to be extremes driven by a jammed-full handling system (they can’t take any grain so the basis is really wide) or an immediate need to fill cars and get a train moving (they have a short burst of aggressive buying so the basis is really narrow, sometimes “over”). A basis range of \$20 to \$40 under is fairly typical.

Basis covers handling and rail freight fees and any other costs the handling facility incurs, as well as profit. Basis is location specific and can be negotiated. Negotiating basis can be an important step in successful marketing.

THE FOUR SITUATIONS

Growers will find themselves in one of these four basic marketing situations:

1. Futures high, basis narrow. This is a market signal for growers to sell grain. If you like the price now but don’t want to deliver until March, you could sign a **deferred delivery contract**.
2. Futures high, basis wide. Growers will want to take advantage of this high futures price, but the wide basis says that selling today on the cash market is not ideal. In that case, growers can sell futures,



Stan Jeeves often uses this website for futures quotes and charts: **futures.tradingcharts.com**

Alberta Canola has futures and cash prices on its website at **dashboard.albertacanola.com**

Marketing information is also available on MCGA’s site at **canolagrowers.com** and SaskCanola’s site at **saskcanola.com**

FUTURES
HIGH, BASIS
NARROW

FUTURES
HIGH, BASIS
WIDE

FUTURES
LOW, BASIS
NARROW

FUTURES
LOW, BASIS
WIDE

taking advantage of the high price, while holding on to their grain. A simpler tool for those not interested in selling futures is to sign a **futures first contract** with an elevator and wait for basis to narrow.

3. Futures low, basis narrow. If futures market signals suggest that prices are likely to stay low, growers could take advantage of the narrow basis and sell on the cash market. If they sell but are worried that prices could rally, they could offset that sale by buying futures for an equivalent amount to their sale and transfer the price risk from the grain bin to paper. Or they could inquire about a **price later contract** that would allow them to deliver grain, receive partial payment and choose a final transaction price at a later date within a set time frame – say 90 days.
4. Futures low, basis wide. This is a market signal to store grain and wait, especially if there is carry in the futures market. If futures are low and basis is wide, the market is over supplied. **Deferred basis contracts** could be a useful tool here to get some grain moving in a less-than-ideal market. With this contract, you lock in the basis and secure space at the elevator, but the future component is still open. ✖

—Stan Jeeves farms at Wolseley, Sask., and often speaks on marketing basics. This article is based on a presentation he made at CropSphere 2016 in Saskatoon.

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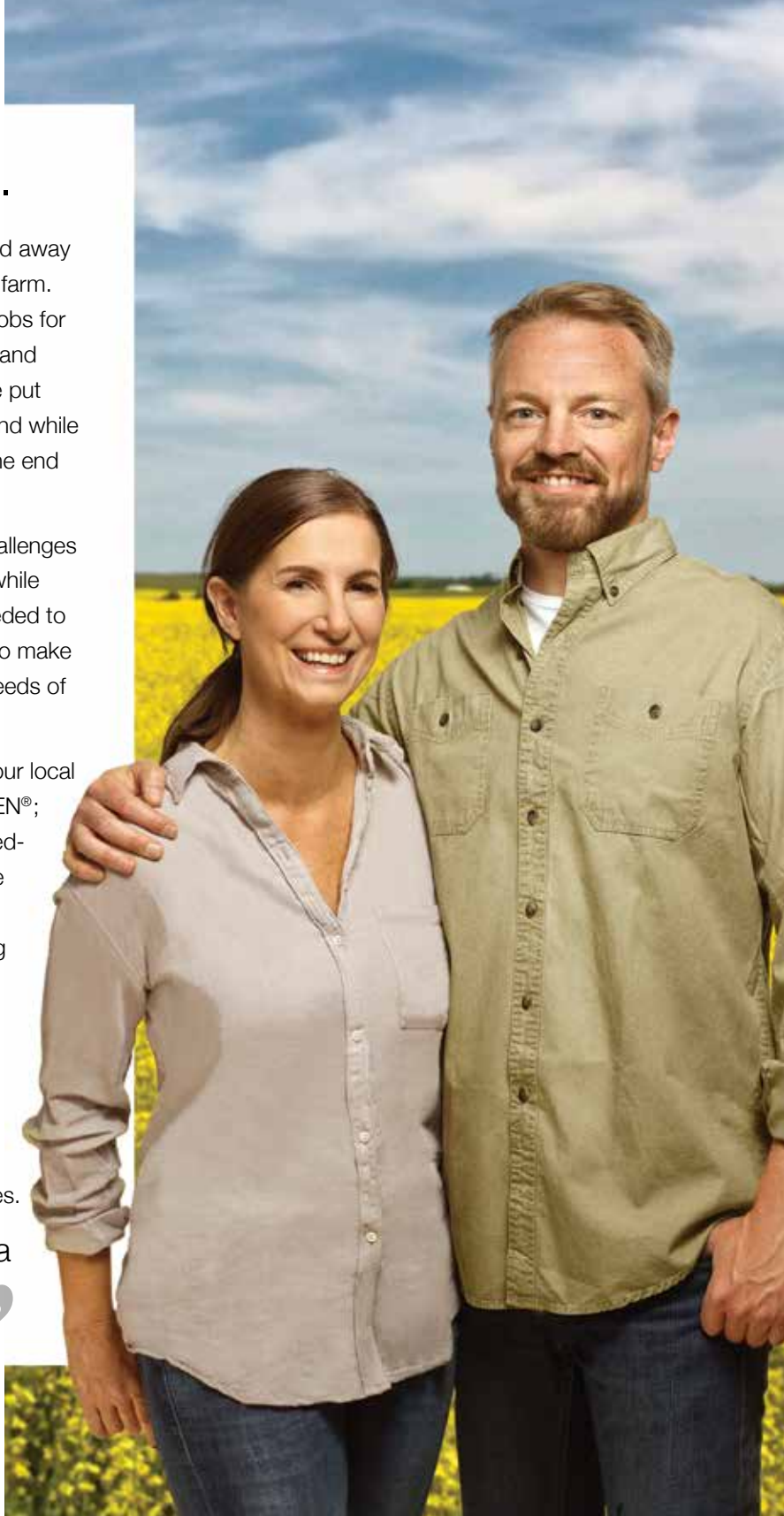
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The Canadian Grain Commission has new guides to show what distinctly green, heated and badly burnt seed looks like.

COLOUR GUIDES HELP FARMERS ASSESS GREEN OR HEATED SEED



The Canola/Rapeseed Colour Guide, which shows the colour of “distinctly green” canola seed, is available for free this farm show season from the Canadian Grain Commission (CGC).

BY JANELLE WHITLEY

This farm show season, farmers have the opportunity to get a free *Canola/Rapeseed Colour Guide* and *Canola/Rapeseed Heated Colour Guide* from the Canadian Grain Commission (CGC).

The guides, similar to the ones used by grain elevators, provide farmers with an additional tool in assessing the quality of their canola.

Distinctly green seeds and heated seeds are two of the most common downgrading factors for canola. High levels of chlorophyll impact the colour and taste of canola oil – an undesirable trait to consumers. It is expensive and difficult for processors to remove. Heated seed produces a similar effect.

The *CGC Canola/Rapeseed Colour Guide* and *Canola/Rapeseed Heated Colour Guide* provide direction for the grain handling system when determining what constitutes distinctly green and heated or badly bin-burnt seed.

The distinctly green and heated tolerances for No. 1 canola are two per cent and 0.1 per cent, respectively. Grain inspectors clean the canola sample and then compare and assess the crushed sample (1,000 seeds) against the colour guide. Seeds which do not meet the definition of distinctly green or heated, but are tan (with the

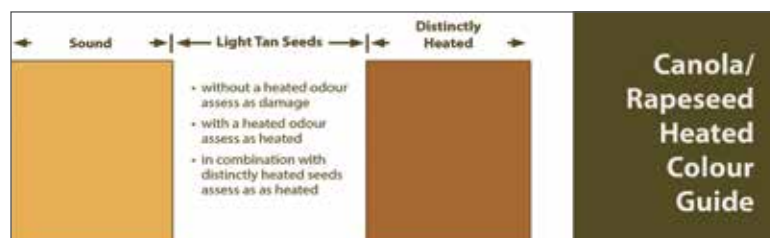
*Below:
The Canola/
Rapeseed
Heated Colour
Guide helps
determine
distinctly green
from heated
seed.*

exception of those emitting an odour) or pale green are assessed against the degree of soundness of the sample but are not counted as distinctly green or heated.

Protection of the CGC-printed colour guides is critical to ensure the colours remain accurate. The colour guides come with instructions that explain the importance of storing the cards away from direct sunlight.

Farmers interested in receiving a guide can visit the CGC booth at 2016-17 trade shows or contact the Quality Assurance, Standards and Re-inspection unit at 1-800-853-6705 to have one mailed out. 🌻

—Janelle Whitley is a policy development manager with the Canadian Canola Growers Association (CCGA) in Winnipeg.



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Over and over and over again

Rothamsted Research in the United Kingdom has grown continuous wheat for 173 years, providing insight into disease suppression, soil pH and much more. It also studies oilseed rape, looking at rotation and pest management and an insect we don't want – melegeles pollen beetle.

BY GREGORY SEKULIC



What happens when we grow the same crop for 173 years in a row?

In the fall of 1843, two men (studying the manufacture and effect of inorganic synthetic fertilizer) planted a replicated, multi-variable winter wheat trial. This summer, the employees and researchers of that institution – Rothamsted Research in Harpenden, U.K. – harvested the 172nd wheat crop from that trial, adding data to the longest running, single-crop agricultural trial on the planet. The power of such a dataset is nearly incalculable.

Treatments over that nearly two-century trial have remained remarkably constant, only being modestly updated to allow for relevance in modern cropping systems. These have included the introduction of herbicides to replace hand weeding, fungicides, various fertilizer and manure regimes, and the introduction of more modern, semi-dwarf wheat varieties.

Data garnered from these trials show remarkable trends in productivity and soil quality. Several of the trials have received neither synthetic fertilizer nor manure over the course of the trial, others have received no fungicide or herbicide. The researchers have kept samples of not



Above: Rothamsted Research is an interesting blend of early 19th century architecture and ultra-modern labs, offices, and lecture theatres interspersed with field plots and manicured, sprawling gardens.



The long-term oilseed rape (OSR) trials at Rothamsted are protected with nets from a surprising pest: pigeons.



Late bud to early flowering stage is the most critical time for pollen beetle control. Although this looks severe, this particular field hadn't yet passed the economic threshold for the UK, which is 15 beetles/inflorescence.

only the harvested grain and soil from each plot, but also the raw rainwater falling and water collected from the tile drainage below each plot.

The dataset is obviously too massive to even attempt to summarize in a short article, but the highlights really emphasize the need for constant monitoring of pH, as the trial needed to be continuously limed to stay at a pH conducive to plant growth. Arguably the most interesting aspect, and hence my interest as a canola agronomist, is the identification of pathogen-suppressive soils. Under continuous wheat cropping, take-all of wheat (a fungal disease) becomes much less severe than the disease on wheat in rotation or in a fallow regime. The mechanism is not well understood, but has implications for one of the newer trials starting: continuous oilseed rape (OSR), a sister crop to the spring canola we grow in Canada.

Now entering its eleventh year, continuous OSR is set to be the next long-term trial added to the eight existing trials.

Long-term trials express their value not so much in a single year of yield data, but through the analysis of many years of trends and conditions. The data – and samples – already collected from the wheat and grass experiments lend an interesting insight into the effects of climate change, nuclear fallout and management practices.

In addition to the long-term trials, Rothamsted also devotes an incredible amount of resources to sustainable cropping systems and integrated pest management (IPM). Over the course of the Rapeseed Congress and various other international workshops, I have had the opportunity to present with one of the researchers, Dr. Samantha Cook, who specializes in IPM research. Her work has centred around a pest we don't have in Western Canada yet: the melegeles pollen beetle. Her research blends climatic conditions with plant stand density and economics to develop thresholds and predictive models for the most economical time to enact chemical control of the pollen beetle. This beetle is devastating to yield all over northern Europe, if left uncontrolled.

One of the aspects that make a crop attractive to insect pests is colour. This has been observed in various ways, with various pests. One of the more interesting approaches, from an IPM perspective, has been the use of coloured petals to decrease the attractiveness of the oilseed rape to the pollen beetle. White and yellow flowers were highly attractive to the beetles while red and blue petals were

Right: Rothamsted was one of the European institutions to perform research on genetically engineered wheat. This double-fenced, gated, video-monitored enclosure staffed by armed guards was part of the £3 million price tag to protect the trial from another surprising pest: anti-biotechnology activists.



Below: A sign on Rothamsted grounds describes the 173-year continuous wheat plot.



much less attractive. Field-scale work of this magnitude has not been performed in Canada, but could promise a non-insecticidal approach to dealing with pests such as the cabbage seedpod weevil and the melegethes pollen beetles, when they do arrive in Western Canada.

Many of the trials, however, do show the necessity of judicious insecticide use in cropping systems. Dr. Cook enacted a new trial using turnip as a barrier crop around winter OSR. As the turnip flowers earlier (potentially attracting pollen beetle) and another of the OSR pests has a preference for turnip (cabbage stem flea beetle), the idea was that farmers could manage these insects without the use of insecticidal seed treatment or foliar applications to the OSR. The results have been less than encouraging. In the first year of the trial, the OSR was eaten entirely,

leaving behind happily flowering borders of turnip. Clearly, insecticides will continue to be an important part of crop production.

Lessons learned in England, though not always directly applicable to the Canadian cropping systems, certainly give us experience to draw on when new pests emerge or when field conditions change. ✖

—Gregory Sekulic is the Canola Council of Canada agronomy specialist for the Peace River region of Alberta and B.C.



While in Harpenden

Rothamsted Research is a busy agricultural research facility on the outskirts of a small London suburb called Harpenden, population 35,000. A quintessential Victorian town in the rolling agricultural countryside of southern England, Harpenden features some fantastic dining (fish and chips with mushy peas?) and at least one neighbourhood pub featuring hand-drawn, bitter cask ales.



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SaskCanola sponsors Chris Corkum, the Saskatoon-based chef who competed at the WorldChefs challenge in Greece in September and featured canola oil in his session this month at the Royal Agricultural Winter Fair in Toronto.

CHEF CHRIS CORKUM, CANOLA CHAMPION

BY RAEANNE VAN BEEK



This spring, SaskCanola seized the opportunity to feature canola oil on a global stage, entering into an exciting partnership with the Canadian Culinary Federation (CCFCC) Saskatoon Chapter to support chef Chris Corkum. The Saskatoon-based chef journeyed to Greece in September to compete against the best chefs in the world at the WorldChefs Global Chef Challenge.

Born and raised in Nova Scotia, Corkum began working in a kitchen at the age of 16. His technical training began at the Culinary Institute of Canada in Prince Edward Island. It was there, as a member of Junior Culinary Team P.E.I., where he discovered a

knack for competing, winning a silver medal with the team and going on to win gold in Skills Canada.

After graduating, Corkum went to the Fairmont Southampton in Bermuda, where he sharpened his skills in the pastry kitchen over the course of two years. Upon returning to Canada, Corkum worked his way across the country, going from Halifax to Muskoka, Jasper and now Saskatoon. He is executive sous chef at the Radisson Hotel Saskatoon.

Corkum's current journey began in 2012, when he assisted in the first ever podium finish for the province of Saskatchewan, winning a silver medal at the CCFCC National Chefs Challenge. He returned with another medal the following year. These results, in addition to Corkum's unwavering commitment to his craft and to the growth and development of young culinarians, landed him the opportunity to represent Canada at the Congress of the Americas for the World Association of Chef Societies (WACS) in Quito, Ecuador. He competed against the best chefs in the Americas and took home the gold.

The last competition in this run, the Global Chef's Challenge Finals at the WorldChefs Congress & Expo in Greece, had Corkum up against 19 other world class chefs as the Americas representative. He did us proud but did not finish on the podium.

In the two months leading up to the world finals, Corkum performed more than 20 practice runs in which he prepared and served his entries to tables of 10. SaskCanola was delighted to host members of the health-based, research and culinary communities to enjoy this unique dining experience at one such Chef's Table in August. The menu used canola oil throughout and consisted of four mouth-watering courses.

When asked what inspires him in the kitchen, Corkum says it's the teamwork. "Working together in the kitchen with the team and seeing everybody fail and succeed together and learn and grow together is an ongoing source of inspiration," he says.

In addition to being a world class competitor, Corkum has become an ambassador for canola oil, championing its culinary properties at recent Canadian Diabetes Association (CDA) events, including the Regina Expo, where a theatre of 200 delighted in watching Corkum make Pan Roasted Lake Diefenbaker Trout this May. At a Train the Trainer workshop this summer, he taught key CDA volunteers, staff and dietitians how to make tasty and healthful salad dressings, motivating many to make their own canola oil-inspired dressings at home.

"The partnership with canola has been awesome," says Corkum. "I've loved working with the people that I've met and getting the opportunity to share my knowledge and love for food with people that help educate others about food and nutrition."

On November 4, Corkum will lead an interactive session entitled "Cook like a Chef at Home" at the Royal Agricultural Winter Fair's Health Professionals Day in Toronto. The session, geared toward dietitians, nutritionists and other health professionals, will include tips on how to choose an oil for everyday use, taking into account shelf life, flavour applications and cooking properties. With its affordability, versatility, and beneficial qualities, canola oil is a top choice!

SaskCanola, in conjunction with Canola Eat Well, looks forward to working more with Chef Corkum, culinary star and great canola oil advocate. ✨

—Raeanne Van Beek is the marketing and events coordinator with SaskCanola.



The Lake Diefenbaker Trout recipe

Chef Corkum developed for SaskCanola is at saskcanola.com under the Food & Health banner

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PROPOUND EXPANDS CANOLA MEAL OPPORTUNITIES FOR POULTRY AND SWINE

BY BRITTANY DYCK

The feed industry is already well aware of the fact that canola meal excels in dairy cow diets. Time and time again, canola meal has demonstrated a 1L per cow per day milk yield advantage. But what about pigs and chickens?

Well, research clearly shows that canola meal can be used to support maximum growth potential in these animals, but limitations on its use are real.

Here are the facts: Canola meal has 36 per cent crude protein and soybean meal has 48 per cent. Not only does soybean meal have more protein, but that protein is also around 10 percentage points more digestible than canola meal, on average. Then there is the fibre. Unlike the dairy cow, pigs and chickens can't put much of that fibre to use. And unlike soybean hull, the canola hull is not easily removed to concentrate the protein.

The canola industry and livestock nutrition researchers have been looking into

various processing methods to reduce the fibre, concentrate the protein and raise canola meal's value compared to soybean meal. While methods can achieve this goal, they have not proven cost effective. Seed genetics seem to be the best way forward, keeping in mind that improving the meal profile must also maintain the value of the oil.

Dow AgroSciences has successfully developed the first line of high-protein canola meal. Called ProPound, this meal has a protein content comparable to soybean meal, and improved digestibility and lower levels of fibre than standard canola meal. This newly advanced canola meal will be more cost effective than soybean meal, and provide a versatile product for swine and poultry producers to use in various stages of production.



While genetic improvements have been vast and impressive in the canola industry, Dow's new product is the first of its kind to go after a segment of the livestock industry that could really benefit from improvements in the canola meal nutrient profile.

So how does this product get into the hands of Canadian livestock producers? To learn more, I went to Carson Callum, animal nutritionist with Dow AgroSciences.

"Dow is very excited to introduce ProPound to the Canadian livestock industry. Having this additional high-quality protein option for feeding means improved bottom lines for livestock producers. Reception so far in the feed and livestock industries in Western Canada and the U.S. has been very positive, so I see this new product fitting well into a monogastric feed ration," he says.

ProPound will be launched this fall, with limited material available. "Beginning in 2017, RoundUp Ready and Clearfield Nexera hybrids with ProPound will become more widely available to support market expansion," Callum says.

For swine and poultry producers who aren't able to get their hands on ProPound this year, rest assured that conventional canola meal along with high-oil expeller meal are both great alternatives to soybean meal. Researchers across the Prairies have been taking outdated practices on the use and inclusion rates for standard canola meal and pushing the boundaries. See the sidebar for more on this work.

As the Canola Meal Manager at the Canola Council of Canada, I'm excited to be able to discuss various high quality, canola meal options with the poultry and swine industry. 🌻

—Brittany Dyck is canola meal manager for the Canola Council of Canada. Contact her at dyckb@canolacouncil.org or 204-982-7763.



Credit: iStock.com/bazilfoto



Pushing the boundaries of canola meal use

CANOLA MEAL FOR LACTATING SOWS. In Canada, swine nutritionists are using, on average, 10 per cent canola meal in the diets of lactating sows. This maximum is based on the notion that lactating sows need a high plane of nutrition to support piglet growth. It is thought that the fibre in canola meal can limit intake. Dr. Martin Nyachoti at the University of Manitoba has recently demonstrated an inclusion of 30 per cent canola meal in these diets with satisfactory piglet and sow performance.

PALATABILITY CONCERNS. Does canola meal still taste bitter to pigs? Research out of the University of Alberta and the University of Manitoba have both recently demonstrated that even starter pigs can consume large quantities of canola meal in the diet without drops in feed intake when compared to soybean meal and with proper diet formulation practices. A market research report was commissioned with Ipsos Canada to better understand canola meal usage and perceptions in Canadian livestock nutritionists. Palatability was determined to be a weakness by 47 per cent of those formulating diets for pigs. This new research will provide confidence to nutritionists that pigs in stages of growth will consume canola meal.

CANOLAMAZING.COM IS NO LONGER JUST FOR DAIRY COWS. Head over to canolamazing.com to view information on canola meal in swine and poultry diets and to access the 2015 Canola Meal Feed Guide in English, Mandarin and Spanish. 🌻

Move Over InVigor Canola

BrettYoung's 6074 RR Canola Challenges InVigor® Yields.

Over the past two years, 6074 RR has been the highest-yielding Genuity® Roundup Ready® (RR) canola in the Canola Performance Trials (CPTs), and has the agronomic traits to make it one of the best performing hybrids—no matter whether it has Liberty Link® or Genuity Roundup Ready traits.

"6074 RR has very high yield potential. Three years ago, our breeders actually visually saw this variety in our research trials and they just pointed it out in every trial. I said, 'That's the next big one.' So it's been exciting and fulfilling to have that variety come to the marketplace," says Kevin McCallum, General Manager of DL Seeds at Morden, Manitoba.

DL Seeds was formed in 2008 as a joint plant-breeding venture between DSV and NPZ Lembke, two leading European canola-breeding companies with a long history of plant breeding. DL Seeds is BrettYoung's canola breeding partner and the source of 6074 RR.

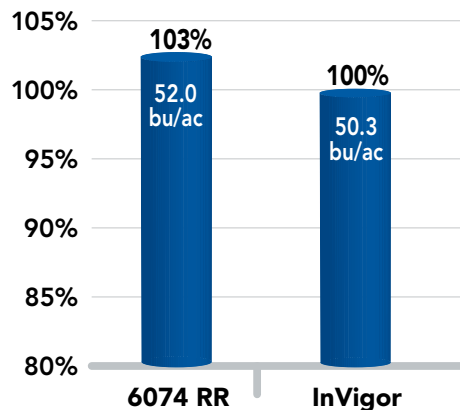
6074 RR is proving itself as the outstanding choice in the Genuity Roundup Ready segment with yields that challenge InVigor's. It is one of the few hybrids to combine unsurpassed yield with wide adaptation, Blackleg resistance (R) and improved tolerance (IT) to Sclerotinia in a single package.

"6074 RR is a hybrid that delivers unique disease resistance traits, great harvestability and yields better than any Genuity Roundup Ready variety we've seen before," says Rene Mabon, Agronomic and Regulatory Services Manager with BrettYoung at Winnipeg, Manitoba.



6074 RR vs. InVigor plot being harvested at Meota, SK.

6074 RR vs InVigor Yields



Source: 15 farmer or retailer run trials in 2016 in Manitoba and Saskatchewan

In addition to leading performance in the CPTs, 6074 RR also leads the way in BrettYoung Comparison Trials (BCTs) for canola. These sites represent BrettYoung's commitment to testing and bringing unbiased agronomic and performance data to the market. The sites are field-scale, farmer-managed, replicated field trials. All sites are managed by an independent company in co-operation with the farmer.

"We have started to get some of the results from our 2016 BCT trials. 6074 RR is showing results consistent with what we saw last year. Consistent top end yields. Last year we had 19 sites with 6074 RR and we have 20 in place this year," says Mabon.

The InVigor Challenge Trials

In 2016, BrettYoung also launched the InVigor Challenge Trials. Fifteen head-to-head, farmer or dealer-run trials across western Canada that featured 6074 RR up against the best InVigor hybrids.

"The InVigor genetics are very well respected in the marketplace, but we feel we have the genetics that are just as good or better in our varieties. We felt 6074 RR would challenge the InVigor hybrid yields, and in the head-to-head plots we expected that we would win, not every single plot, but we would win our share," says McCallum.

Check the BrettYoung website in November for the complete Challenge results—they'll all be there, win, lose or draw. brettyoung.ca/6074

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Impacts of fertilizer on yield

The Canola Research Hub at canolaresearch.ca has a user-interactive research database. This article is based on the query **“What are some of the impacts of fertilizer on seed yield?”** with data drawn from a number of canola agronomic studies.

BY BARBARA CHABIH

Profitable canola production relies heavily on the management of soil fertility. Balanced, effective fertilizer management not only contributes to profitable canola yield but also helps to maintain the productivity of the soil resource.

“Improving Nutrient Management in Canola and Canola-Based Cropping Systems” was a broad study to evaluate improved practices for sulphur (S), phosphate (P) and nitrogen (N) management in canola, led by Cynthia Grant with Agriculture and Agri-Food Canada (AAFC), Brandon.

The objectives of this study were to determine: (1) safe rates of P and S blends that can be seed-placed across a range of environments; (2) the effect of traditional and enhanced-efficiency P and S fertilizers on seedling damage, nutrient-use efficiency, crop yield and canola quality; (3) how preceding crops influence soil quality, microbial activity, canola yield, crop quality and the rate of fertilizers needed for optimum yield and quality; and (4) how various novel S fertilizer sources influence canola yield and quality for biodiesel production.

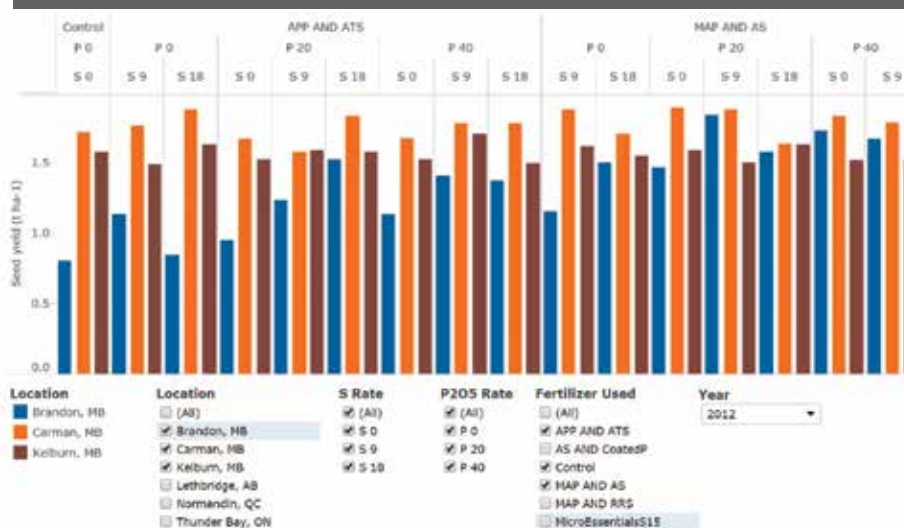
SULPHUR AND PHOSPHORUS

For the first two objectives, the Grant study evaluated various combinations of seed-placed P and S fertilizer, using different forms and rates.

About half the site years showed seedling toxicity with excess rates of monoammonium phosphate plus ammonium sulphate (MAP + AS) or ammonium polyphosphate plus ammonium thiosulphate (APP + ATS) in combination. Seed-placed P and S significantly reduced stand density at several of the sites, with the effect of S being particularly damaging.

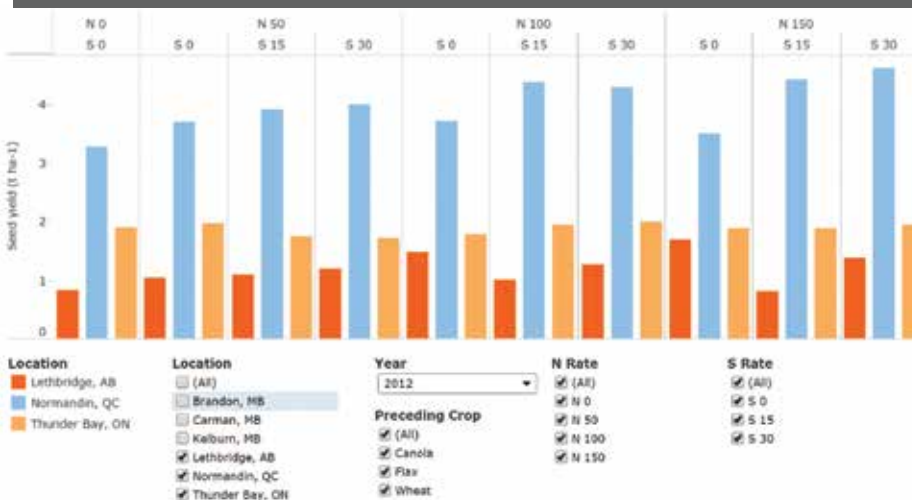
Microessentials-15 (MES15) or the rapid release sulphur (RRS) product occasionally reduced seedling damage but did not generally increase final seed yield as compared to the traditional MAP + AS.

Table 1. Seed yield as affected by P205 and S rate and source at various sites in 2012



This table, shown as it appears on the Canola Research Hub at canolaresearch.ca, illustrates a range of data from Cynthia Grant's fertilizer product and placement study. The Hub's tools allow users to select or deselect boxes to view effect on yield by location, product blend and rate, or by year of study.

Table 2. The effect of preceding crop on canola yield, Grant study



Working with the chart options on the Hub, users can watch as the charts are redrawn to show the overall and individual effects of the various preceding crops, product rates or combinations.

Seed yield increased with the application of P and S at two-thirds of the sites, with highest yield occurring when both nutrients were applied. Yield response to P and S varied considerably from site to site and was generally not strongly affected by the source of fertilizer. In contrast, where the yield response to S was strong, yield tended to be greater with the AS sources than with the other, possibly more slowly available forms. (See Table 1.)

INFLUENCE OF PRECEDING CROPS

To evaluate the influence of preceding crops, the Grant study seeded flax, canola and wheat in the first year of a two-year cropping sequence. Researchers applied recommended rates of N, S and P for the location and crop, based on soil test values. The following year, canola was grown using a standard rate of 20 kg P₂O₅/ha as seed-placed MAP, with varying rates and sources of N and S fertilizer.

Canola yield tended to be the highest after wheat and the lowest after canola. Highest yields generally occurred when both N and S were applied at moderate to high levels. (See Table 2.)

John O'Donovan with AAFC Lacombe led another recent study focused on the effect of preceding crops on soil fertility and resulting canola yield. "Legume Crops to Improve Soil Fertility for Enhanced Canola Production" investigated the effects of growing canola on various legume crop residues compared to wheat and canola residues. The objective was to determine if this practice would provide an economical supplement to the nitrogen requirements of canola and potentially reduce the amount of inorganic

nitrogen required to optimize yield.

Significant increases in canola yield occurred on pea and lentil residue at many test sites, but the increases were generally not as high as when canola was grown on fababeen green manure. (See Table 3.)

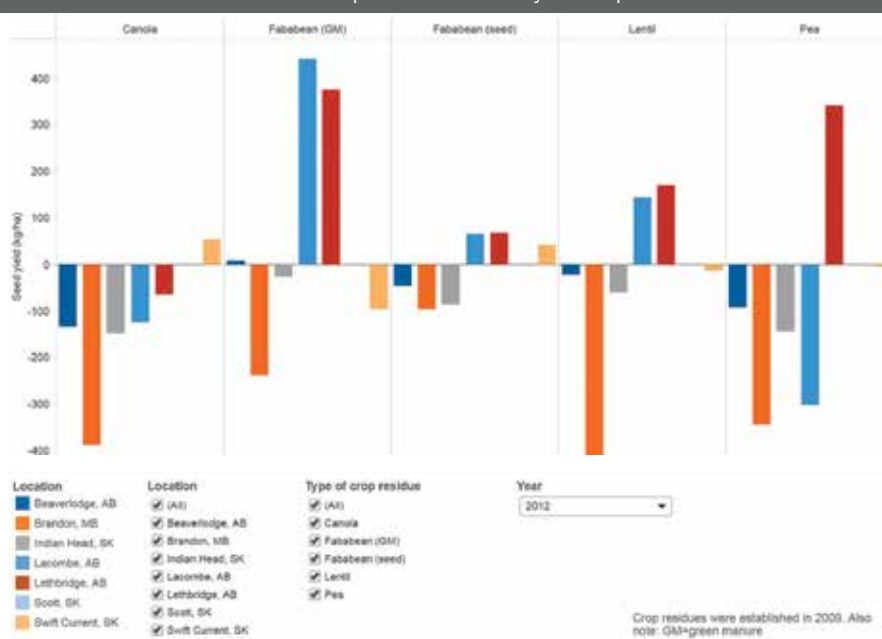
O'Donovan concluded that growing legume crops in rotation with canola can provide a viable alternative to inorganic nitrogen. Legumes can provide a nitrogen benefit to the following crop, but a consis-

tent, measurable benefit does not extend to crops grown two to three years afterward.

More detail on the findings of these two studies, and an expanding library of many more, can be found at the Canola Research Hub online at canolaresearch.ca. ✖

—Barbara Chabih is communications program coordinator with the Canola Council of Canada. She manages the Canola Research Hub.

Table 3. The effect of different crop residues on canola yield compared to wheat residue



This chart illustrates O'Donovan's findings for canola seed yield (kg/ha) when grown after various legume crops in 2010 and 2012. Canola following legumes was better than canola on canola, in general, but this table shows the variability of results year to year and location to location. These results show the gain or loss in yield compared to canola on wheat residue.

Inside the Canola Research Hub

Looking for canola research and best practices in canola production? Find it at the Canola Research Hub – canolaresearch.ca

- Navigate a library of research summaries
- View and filter research data
- Watch video interviews and clips
- Access published resources
- Download multimedia materials
- Keep up to date on science-based industry news and events

The Canola Research Hub has been made possible by the canola industry's investment in agronomic research through the CCC and grower check-off dollars administered by their provincial organizations. It is supported by a \$15 million Agriculture and Agri-Food Canada canola research cluster investment under Growing Forward 2 (GF2).

The Hub's library currently houses over 100 reports from programs including AAFC's Growing Forward (GF), the Canola Agronomic Research Program (CARP), studies funded by the provincial grower groups and the Ultimate Canola Challenge (UCC). This database and the site's functionality will continue to expand with the latest in canola agronomic research as findings become available.



For more information on navigating the Hub, view a guided-tour tutorial available from the landing page.

Providing top science for the bottom line.



Farm show season

The canola community offers many opportunities for face-to-face learning through canoLAB, canolaPALOOZA and big joint productions like FarmTech in Edmonton, CropSphere in Saskatoon and CropConnect in Winnipeg. These panelists talk about why they attended specific events and what they learned.

BY JAY WHETTER



BROOKE HAMES
MARWAYNE, ALTA.

Brooke Hames got to meet Keith Downey at canolaPALOOZA in Lacombe in 2016. Downey, a father of canola, was stationed at the “Triangle of U” plots showing how

many common vegetables are close canola relatives. Rutabaga and Siberian kale are *Brassica napus*, the same species as Argentine canola. Turnip is *B. rapa*, the same species as Polish canola. Cabbage, broccoli and cauliflower are *B. oleracea*, a parent species of *B. napus*.

Hames, who farms in the summer and on weekends with her father, Todd, is studying nutrition at the University of Alberta. “It was really neat to meet Keith Downey, who bred canola to be used for human consumption,” she says. “I’ve always been interested in how what you eat affects your body and your health.”

She says her dad was excited to attend canolaPALOOZA and asked if she wanted to come along.

What caught her eye, in addition to the food-related plots, was the canola stand establishment trials, showing how different row spacings and plant populations can influence results.

In general, what canolaPALOOZA demonstrated for Hames was how many variables farmers must manage – including weather, disease, insects and machinery. “I don’t think people outside agriculture realize the aspects involved in producing their food,” she says.



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Feb 22-23
Vermilion, Alta.
Mar 15-16
Dauphin, Man.



CHAD ZAVISLAK
CANORA, SASK.

Chad Zavislak digs up five to 10 random plants every time he visits a canola field. The owner of Northern Vigor Agronomy Services is constantly on the lookout for anything

out of the ordinary that may require immediate treatment or a new approach to management. This includes clubroot – a disease he has never seen in the field (so far) but one he could recognize thanks to participation at canoLAB.

Zavislak has attended the Canola Council of Canada’s hands-on agronomy event in Saskatoon and Brandon over the years. “You can look at a picture in a textbook or online, but it’s not the same as seeing the real thing,” he says. At canoLAB in Brandon in 2016, he got to practice washing off canola roots to check them for galls. The lab also had lots of samples of galled roots. “Being able to see the real thing was worth the whole trip,” he says.

“Clubroot is not something I want to see in my area, but I know it’s knocking on the door,” he says.

Five years ago, Zavislak was checking some canola plants damaged by Group 4 herbicide drift. Looking at the roots, he noticed – with some alarm – that they were covered in little galls. He sent them away for testing and it turned out, thankfully, to be hybridization nodules – which are smaller than clubroot galls but often confused with clubroot. With his canoLAB experience, Zavislak is much more equipped to identify clubroot galls if they do show up.

CanoLAB also expanded his network. He “got to rub shoulders” with Dan Orchard and John Gavloski, and now



ARAELYA GEORGE, who farms at Cromer, Man., and works for Redfern Farm Services in Virden, attended canolaPALOOZA in Portage la Prairie, Man., in June. A stand out for her was the Canola Eat Well station offering raw vegetables and a sample of salad dressing. “The little jar they gave out and recipe poster fold out was very effective and I continue to use them weekly,” she says. “I think support for consumer end uses is something we miss the boat on as agronomists and retailers.” 🌻

INGREDIENTS

1/4 cup canola oil (60 mL)
2 Tbsp lemon juice (30 mL)
2 Tbsp honey (30 mL)
1 tsp Dijon Mustard (5 mL)
2 tsp fresh herbs, chopped,
of your choice (oregano, dill,
cilantro) (10 mL)

DIRECTIONS

1. In a small bowl or jar with lid, whisk or shake together canola oil, lemon juice, honey, mustard and fresh herbs.
2. Drizzle dressing over a green salad of your choice and serve immediately. Store extra dressing in the fridge for up to three days.

feels more inclined to call them if he has questions. Orchard is the Canola Council of Canada agronomy specialist for North Central Alberta and has a lot of experience with clubroot. Gavloski is the provincial entomologist for Manitoba Agriculture.

"I go to canoLAB for the quality of the presenters," he says. "Whether clubroot or swede midge or verticillium – issues I don't have a lot of experience with – I can go to canoLAB and learn about them from the who's who of the agriculture industry."



**MARK KEATING
RUSSELL, MAN.**

When Mark Keating finally grew his first crop of Harvest wheat, it demonstrated what, to him, is a major problem with variety testing: it isn't local enough. He had avoided growing the variety when it first came out because it had a relatively poor rating for fusarium resistance. When he finally did give it a try, Harvest performed exceptionally well and went on to become one of the most popular wheat varieties in his Parkland area of Manitoba for many years.

"Because of results generated under completely different growing conditions, I had deliberately avoided a variety that is extremely well adapted to the unique climate in my area," he says. "Not only that, my seed customers were also missing out because I hadn't recognized the value of this variety."

That experience combined with moves away from efficacy requirements for newly-registered fertilizer products made Keating realize the need for more on-farm testing. "All levels of government seem to be moving away from testing, which puts the onus on farmers to do more," he says.

Keating went to CropConnect in Winnipeg in February to learn how to properly run a trial. "I found out that on-farm testing might not be as complicated as one might think," he says. "The biggest challenge is just to get it done."

Replicated strip tests for varieties or products or techniques are relatively easy to set up. Finding time to harvest the strips, weigh each result separately and record the data is often when on-farm tests fall apart.

"On-farm testing might not be as complicated as one might think. The biggest challenge is just to get it done."

—Mark Keating



To set up on-farm trials in 2017, follow the Ultimate Canola Challenge protocols found here: canolacouncil.org/crop-production/ultimate-canola-challenge/

In 2016, Keating finally conducted his first replicated strip trial, testing two different wheat varieties – AAC Brandon and AAC Penhold – for relative yield and protein. In this case, the results were about what he expected, with AAC Penhold outyielding AAC Brandon by 14 per cent but exhibiting 0.7 per cent lower protein. This is valuable data that Keating can plug into his own crop budgets to determine each variety's suitability to his operation.

Presentations at an event like CropConnect, which Manitoba Canola Growers Association co-hosts, are just one reason to attend. The networking opportunities make attendance worthwhile, Keating says. "Social media is a great aid to networking," he says, "but sometimes there's no better way to learn from someone than sitting down and having a coffee or beer with them."



**DOYLE WIEBE
LANGHAM, SASK.**

Doyle Wiebe got better-than-expected yields this fall on canola fields seeded into fababean stubble. He knows the value of pulses in his canola-cereals rotation, but he has struggled in the past to get the results he wants from peas and lentils.

"We have sandy soil, so cutting low to get peas and lentils is hard on my harvest equipment," Wiebe says, "and I have a bias toward crops that leave enough stubble to hold snow." Due to unsatisfactory results in the area from peas and lentils, he went many years without growing any pulses at all.

"I was looking for an opportunity to grow pulses again," Wiebe says, so when his farming partner, who had done some trials with fababeans, suggested they give that crop a try, he went for it.

"I'm still learning how to grow the crop better," Wiebe says, which gave him another good reason to attend CropSphere in Saskatoon.

The SaskCanola director had a few canola-related duties at the January multi-crop event – so he would have attended regardless – but he found a moment to take in a fababean talk by Sherrilyn Phelps, agronomy and seed program manager with SaskPulse. "I'm a conference junky," he says. "I still prefer in-person presentations."

Conferences like CropSphere also give Wiebe a chance to interact with other farmers around coffee and lunch tables. From these conversations he learns new tips and "takes away things that help affirm my thoughts on certain practices."

Langham has become a bedroom community to Saskatoon, and Wiebe says it doesn't have a farmer-focused coffeeshop like you might find in towns further from major centres. CropSphere is like Wiebe's giant coffeeshop. ☘

—Jay Whetter is the editor of Canola Digest.



Make this salad your own by substituting ingredients to taste! This recipe makes one serving, but it's based off of a 2:1:1 canola oil to acid and emulsifier ratio.



Herbicide resistance prevention

For this new series, Canola Council of Canada agronomy specialists take a particular agronomy challenge and provide solutions, with consideration for risks and costs. In this case, **Ian Epp** looks at integrated weed management as a way to combat herbicide resistance.

1. THE CHALLENGE

Herbicide-resistant weeds have become an all too familiar problem across Western Canada. Whether Group-1 or -2 resistant wild oats, Group-2 resistant cleavers or Group-9 resistant kochia, they present an increasing challenge. For successful weed management, farmers now have to stay on top of current resistance issues and take measures to avoid the selection of more herbicide-resistant weeds. It is a daunting task.

2. THE RISKS

From a herbicide resistance standpoint, Western Canada has been fortunate. We have yet to deal with a resistance issue that fundamentally changes crop production. That is not the case in Australia, where chaff carts have become the norm as a last resort to deal with annual ryegrass, or in the Southern U.S., where glyphosate-resistant palmer amaranth has to be hand weeded out of cotton fields. That being said, without changing our current approach to weed management, we continue to select for herbicide-resistant weeds. Wild oat, green foxtail and cleavers are ranked among the most likely weeds to next develop glyphosate resistance in Western Canada. The loss of glyphosate to manage any of those key species in addition to our current resistance problems would directly result in large yield and quality losses. This would also threaten the

sustainability of no-till or minimum-tillage systems, which rely on glyphosate.

3. THE SOLUTION

Integrated weed management (IWM) adds extra steps to weed management, but it is essential to put these tools to use now while glyphosate and other herbicide options are still effective.

4. IWM OPTIONS

Incorporate a few of these steps to improve weed control, diversify the attack and increase crop competitiveness:

Tank mix different effective modes of action.

- Use vigorous seed and seed shallow.
- Increase seeding rates.
- Decrease row spacing for earlier canopy closure.
- Grow taller varieties.
- Band nitrogen close to the crop.
- Use winter annual crops and perennials in rotation. (Short-term alfalfa can reduce wild oat and green foxtail populations by up to 80 per cent.)
- Change seeding dates on a field. (Early seeding of a competitive crop like barley can give you a jump on weeds.)
- Use strategic tillage.
- Try alternate cropping strategies such as cover crops and intercropping to extend ground cover through more of the season.

5. COSTS AND ROI

The return on investment (ROI) for IWM can be difficult to measure, at least in the short term. In the long term, ROI will be positive if selection pressure and ultimately the development of additional herbicide-resistant weeds is delayed or stopped.

Incorporating IWM into farm practices can have additional agronomic benefits as part of a larger pest management program, such as additional nitrogen from incorporating a short-term alfalfa stand or reduced insect or disease pressure from diverse rotations.

The costs of IWM vary depending on the methods used and need to be evaluated case by case. Differences in seed costs may make increasing seeding rates in cereals more cost effective than in canola, while changing seeding dates on a field has very little added cost. Some of the costs of IWM are in the time and energy spent on planning and implementing long-term weed management strategies. It takes some vision to see the benefit of IWM. Is the vision of hand weeding or pulling a chaff cart behind the combine motivation enough? ✖

—Ian Epp is the Canola Council of Canada agronomy specialist for Northwest Saskatchewan.

Glyphosate-resistant kochia is found in all three Prairie provinces. Wild oat, green foxtail and cleavers are ranked among the most likely weeds to next develop glyphosate resistance in Western Canada.

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