

November 2017

canola DIGEST

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Canola Growers

Meet Your Customers

ELIZABETH BAE FROM SOUTH KOREA
IS A MOM WHO LOVES CANOLA OIL.
FIND OUT WHY ON PAGE 14.



INSIDE:

NAFTA then and now

UNPACKING THE PROCESS
TO ASSESS DOCKAGE

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SEE THE RESULTS

Regardless of what canola hybrid you choose, the 2018 InVigor® lineup is designed to provide you with multiple options to face the challenges that Western Canadian growers need to deal with.

Check out our full 2018 lineup

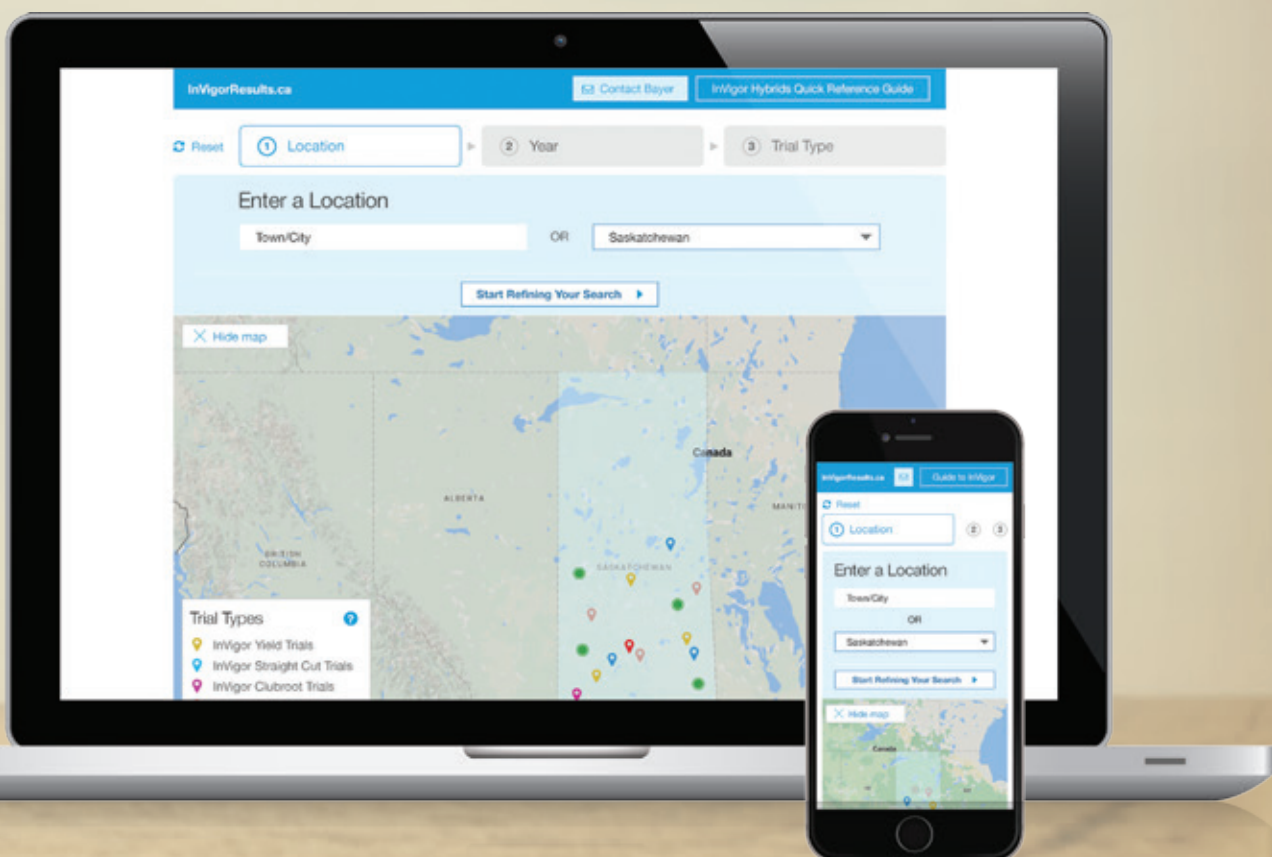
HYBRID	KEY FEATURES	YIELD	GROWING ZONES	STANDABILITY	AGRONOMIC TRAITS	ENHANCEMENT OPTIONS
 InVigor L255PC	<ul style="list-style-type: none"> • Pod Shatter Reduction & clubroot resistant* • Excellent standability • Top yield performer • Harvest flexibility • Medium height 	109% of the checks (InVigor 5440 and Pioneer® 45H29) in 2016 WCC/RRC trials	Mid- to long-growing zones in Canada	Very Strong	Pod Shatter Reduction Clubroot Resistance Blackleg resistance LibertyLink® system	<p>All InVigor hybrids will be offered with the following additional seed treatments:</p> <ul style="list-style-type: none"> • JumpStart® alone • DuPont™ Lumiderm® alone • The combination of JumpStart® & DuPont™ Lumiderm® <p>Please see your local retailer for deadline date to ensure supply of your treatment.</p>
InVigor L140P	<ul style="list-style-type: none"> • #1 grown Pod Shatter Reduction hybrid in Canada • Medium height • Good standability 	100% of the checks (InVigor 5440 & Pioneer® 45H29) in 2011/2012 WCC/RRC trials	All growing zones in Canada	Strong	Pod Shatter Reduction Blackleg resistance LibertyLink system	
InVigor L233P	<ul style="list-style-type: none"> • Excellent yield performance • Improved standability • Very early maturing • Pod Shatter Reduction 	108.8% of the checks (InVigor 5440 & Pioneer® 45H29) in 2014/2015 WCC/RRC trials	All growing zones in Canada	Strong	Pod Shatter Reduction Blackleg resistance LibertyLink system	
InVigor L252	<ul style="list-style-type: none"> • Most grown canola hybrid in Canada in 2016 & 2017 • Top yield performance • Enhanced standability • Medium height 	110% of the checks (InVigor 5440 & Pioneer® 45H29) in 2011/2012 WCC/RRC trials	All growing zones in Canada	Strong to Very Strong	Blackleg resistance LibertyLink system	
InVigor L230	<ul style="list-style-type: none"> • Early maturing • Very strong standability • Strong yield performance • Medium height 	103.9% of the checks (InVigor 5440 & Pioneer® 45H29) in 2014/2015 WCC/RRC trials	All growing zones in Canada	Strong to Very Strong	Blackleg resistance LibertyLink system	
InVigor L241C	<ul style="list-style-type: none"> • Clubroot resistance* • Mid maturity • Medium height • Strong yield performance • Improved standability 	102% of the checks (InVigor 5440 & Pioneer® 45H29) in 2012/2013 WCC/RRC trials	All growing zones with confirmed clubroot presence	Very Strong	Clubroot Resistance Blackleg resistance LibertyLink system	
 InVigor L157H	<ul style="list-style-type: none"> • 1 day earlier** than InVigor L156H • Strong lodging resistance • Security of a contract premium • Ask your Cargill representative or selected independent dealer for more information 	97% of the checks (InVigor 5440 and Pioneer® 45H29) in 2014/2015 WCC/RRC trials	All growing zones in Western Canada	Strong	Specialty Oil Blackleg resistance LibertyLink system	



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- Save and share trial data
- Performance of straight cutting versus swathing



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*To predominant clubroot pathotypes identified in Canada at the time of their registration. InVigor L255PC has the same genetic clubroot resistance as InVigor L135C and InVigor L241C. **Average maturity in days is based on Bayer internal trials.

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Canadian canola producers have comparatively high direct costs per tonne, but very low operating costs more than compensate for this.

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AGRI-TRADE – November 8-11
Red Deer, Alberta | agri-trade.com

SASKATCHEWAN OILSEED PRODUCER MEETINGS – November 13-16
Four locations in Saskatchewan
saskcanola.com

POWERING YOUR PROFITS TOUR –
November 14-23 | 12 locations in Alberta
albertacanola.com/pyp

MANITOBA FARM WOMEN'S CONFERENCE –
November 19-21 | Brandon, Manitoba
manitobafarmwomensconference.ca

CANADIAN WESTERN AGRIBITION GRAIN EXPO – November 21-22
Regina, Saskatchewan | agribition.com

AGRICULTURAL EXCELLENCE CONFERENCE –
November 21-23 | Ottawa, Ontario
fmc-gac.com/programs-services/agricultural-excellence-conference

GRAIN GRADING WORKSHOPS –
November 28, Rosetown, Saskatchewan
November 29, North Battleford, Saskatchewan
saskcanola.com

CANOLA WEEK – December 5-7
Saskatoon, Saskatchewan
Canola Meeting, Canola Innovation Day and Canola Discovery Forum in one.
canolacouncil.org/what-we-do/upcoming-events/

GRADE SCHOOL: GRAIN GRADING SEMINAR –
December 7 | Brandon, Manitoba
canolagrowers.com/events

HEDGING EDGE WORKSHOP –
December 13 & 14 | Red Deer, Alberta
albertacanola.com/hedgingedge

CROP PRODUCTION SHOW 2018 –
January 8-11
Saskatoon, Saskatchewan
cropproductiononline.com

SASKCANOLA AGM & LUNCHEON – January 8
Saskatoon, Saskatchewan | saskcanola.com

CROPSPHERE – January 9 & 10
Saskatoon, Saskatchewan | cropsphere.com

MANITOBA AGDAYS – January 16-18
Brandon, Manitoba
Canola Day at AgDays is January 16 | agdays.com

MANITOBA YOUNG FARMERS CONFERENCE –
January 25 & 26 | Winnipeg, Manitoba

FARMTECH CONFERENCE –
January 30-February 1 | Edmonton, Alberta
farmtechconference.com

ALBERTA CANOLA AGM –
January 30 | At FarmTech
albertacanola.com/agm

CROPCONNECT –
February 14 & 15 | Winnipeg, Manitoba
cropconnectconference.com



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Tastes change

Pork supply in Japan was 2.17 kg per person per year in 1961. (I know pork isn't canola, but stay with me.) Pork supply in Japan rose steadily over the next 50 years to 20.51 in 2011. The rapid adoption of pork into the diet was even more dramatic in China, going from 2.36 to 35.82 kg per person per year in the same period.

These numbers come from the Food and Agriculture Organization of the United Nations (FAO) online database of food production and supply stats. Go to fao.org and look for FAOSTAT. I had fun poking around for food trends in Canada's four major canola markets: U.S., China, Japan and Mexico.

Take milk. The U.S. drinks a lot of milk – with supply per person holding steady at around 250 kg per year from 1961 to 2011. The Chinese, by comparison, are not big milk drinkers, but after bumping along at two to three kg per person per year from 1961 to 1981, the number rose to 10.8 kg by 2001 and frothed to 31.52 by 2011. It was another dramatic change in tastes for the ancient nation.

Vegetable oil consumption is interesting, too. In China in 1961, which is as far back as FAO stats go, total veg oil supply per person was just over one kg per year. The top three oils used in China at that time were soybean, peanut and rapeseed, in that order. (FAO uses "rapeseed".) By 2011, the top three were soybean, palm and rapeseed. Rapeseed oil supply, which would include Canadian canola oil, was 1.65 kg per person per year and soy oil was 2.25. In 2013, the most recent data at the FAO site, rapeseed was at 1.49 and soy at 2.03.

In Japan in 1961, rapeseed oil shared top spot with soy. These were still the top two oils in Japan 50 years later, but rapeseed oil (including Canadian canola oil) was number one by a wide margin.

The situation is quite different in Mexico, whose veg oil market experienced complete upheaval over the past 50 years. In 1961, its two big vegetable oils were sesame and cottonseed. Fifty years later, those two are insignificant,

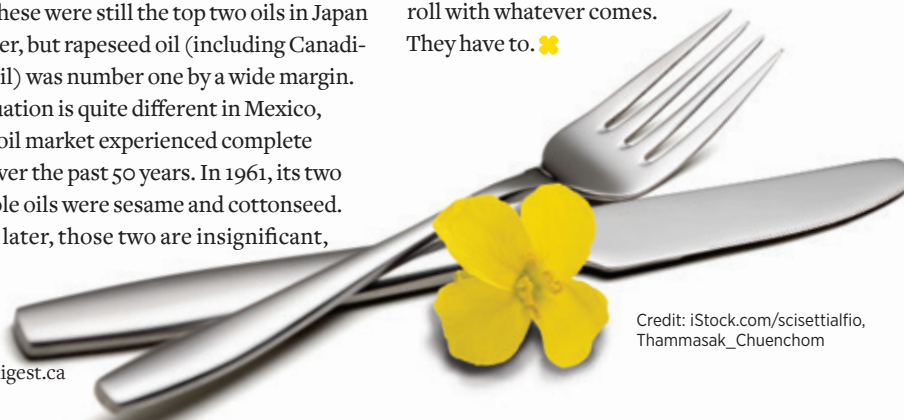
with soy, palm and rapeseed, in that order, supplying basically the whole market. Cottonseed fell off the food oil truck in the U.S., too. (Even though global cotton and cottonseed production increased in the U.S. and the world over that time.)

Taste has a lot to do with what people like to eat. So do food functionality and health benefits. Other big factors are price and supply. Supply challenges can come from the environment in production zones. Government regulations and policy approaches, such as trans fat rules, trade agreements and approval and acceptance of scientific advancements, such as genetic engineering, can also influence demand and therefore supply of a food. Each of these factors has influenced canola market development efforts over the years.

The lesson is that these "taste" drivers change over time. Where canola supply and demand go over the next 50 years will depend on so many factors, and a prediction, though easy enough to make, is likely to be wrong. Market access will continue to be an important effort for our Canadian canola industry. As will keeping up with demand forces and government food and trade policy in key markets. Specialty canola oils with 4.5 per cent saturated fat (it's currently around 7 per cent) and with fish-oil properties could present exciting opportunities.

On the farm, keys to success are attention to market signals and quality standards, and flexibility to adapt rotations to meet changing tastes. This is how Canadian farmers met increasing market demand for canola over the years, and I expect farmers will continue to roll with whatever comes.

They have to. ✿



Credit: iStock.com/scisetialfio,
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Alberta Canola Welcomes New Public Engagement Coordinator – Tanya Pidsadowski

As both a Registered Dietitian and a farmer herself, Tanya Pidsadowski's experience and education make her the ideal person to lead Alberta Canola's efforts in public engagement. This new role will see Tanya engage a diversity of audiences, educating and interacting about canola facts, the farmers who grow it, canola's unique place in agriculture, and the role it has in a healthy diet.

Pidsadowski has a B.Sc. in Foods and Nutrition from the University of Alberta, and began her career as a Registered Dietitian with Alberta Health. Relevant to agriculture, she has experience in the canola seed sector as a representative for Pioneer seeds whilst she and her husband ran the family farm near Westlock. While scouting

fields with her customers and hosting field tours, Tanya discovered her talents in promoting agriculture and the benefits of the crops farmers grow. For the last few years, she has been one of our valued contractors promoting canola to teachers, students and the general public at events such as Aggie Days and the Calgary Stampede.

Tanya's combination of experience on farm, in health care, and in the agricultural industry will serve her and Alberta's canola farmers well in this new role.

Tanya can be reached at:
tanya@albertacanola.com
Cell: 780.616.2091
Office: 780.454.0844

Hedging Edge Workshop

DECEMBER 13 & 14 | RED DEER

The Hedging Edge Commodity Marketing Course gives you two days of live instruction plus pre-course access to the HedgeLink library of video tutorials (13 modules) and the Elements of Charting videos (5 modules).

The course will cover the following topics using a combination of presentations and hands-on trading exercises:

- the basics of marketing
- futures market overview
- hedging basics
- future spreads
- options basics
- options strategies

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



JANUARY 30 - FEBRUARY 1 | EDMONTON

Attend Canada's premier crop production and farm management conference in Edmonton, Alberta from January 30 to February 1, 2018.

This year's keynote addresses include the Right Honourable Stephen Harper, former Prime Minister of Canada. Get all the details on sessions, speakers, and registration at farmtechconference.com.

ALBERTA CANOLA AGM:

Join Alberta Canola for our annual general meeting held during FarmTech on Tuesday, January 30 in the afternoon. You do not have to be registered for FarmTech to attend.

Powering Your Profits Tour 2017

Get the agronomy, marketing, and management information you need to boost your bottom line at one of our 12 events across Alberta.

Each event will feature a speaker and Q & A session addressing the proposed federal tax changes.



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Register early and be entered to win a three-day FarmTech pass! Find more information and the registration link at albertacanola.com/pyp.

Marketing and management speakers, such as:



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STRILCHUK**



**MIKE
JUBINVILLE**



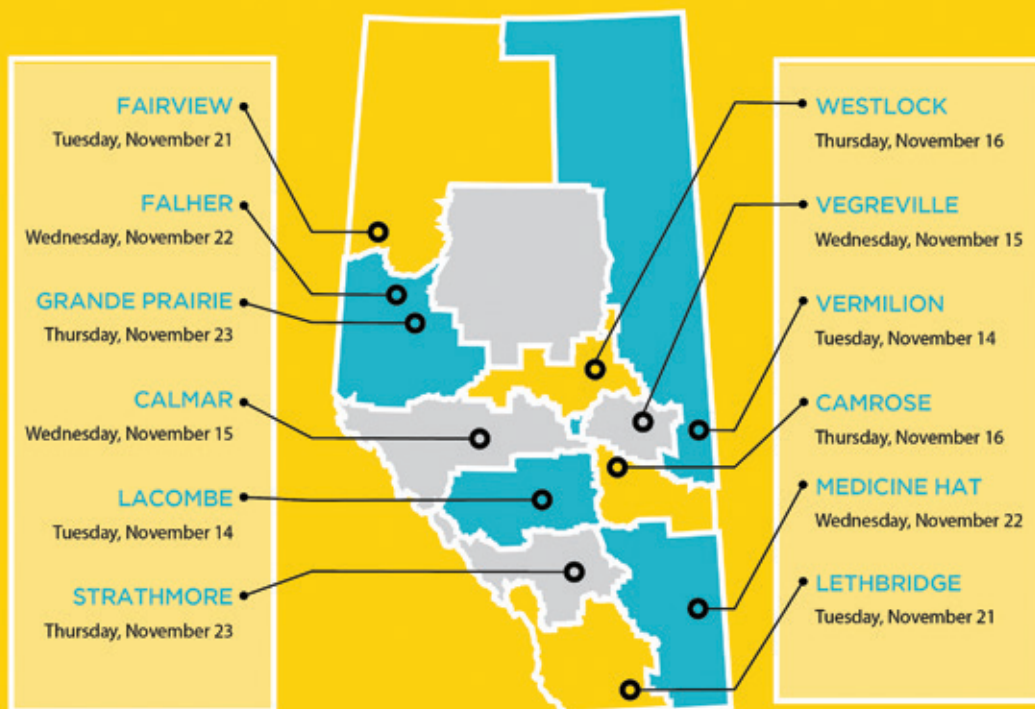
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SaskCanola Welcomes New Canola Promotion Manager

SaskCanola is eager to welcome a familiar face from the health and nutrition industry to our team. Lynn Weaver joined SaskCanola as the new Canola Promotion Manager, effective October 9, 2017.

"I could not be more excited to be working with the fantastic team at SaskCanola to educate and promote the use of canola oil to Canadians," says Weaver. "It is a great honour to represent the canola farmers of Saskatchewan who bring this product to life."

Lynn's impressive career has seen her succeed at various positions. Over the past two years, she served as retail dietitian for Loblaw Canada Inc.; responsible for advising customers on how to simplify nutrition and make healthy eating choices. Prior to this, she's worked as a home care dietitian, nutrition counsellor and medical marketing manager. She's also taken on many consulting jobs over the years, including working for SaskCanola as a canola oil advocate at the Royal Agricultural Winter Fair. Lynn holds a Bachelor of Science in Nutrition as well as a Registered Dietitian designation.

"We are very pleased that Lynn has accepted our offer to lead the canola promotion portfolio," says Janice Tranberg,



Lynn Weaver (left) with Tracy Broughton (right) working as canola oil advocates at the Royal Agricultural Winter Fair in 2015.

Executive Director of SaskCanola. "Lynn's wealth of experience in nutrition communications, marketing and promotion will be a great asset in helping us promote the value of canola and its products."

Policy Issues

Under the policy portfolio, SaskCanola works collaboratively with other organizations and government agencies to ensure a positive regulatory environment for Saskatchewan producers to operate in.

In order to manage policy issues, SaskCanola staff and board work closely with the two national canola organizations (Canadian Canola Growers Association and Canola Council of Canada) to advance federal policy issues for farmers and the broader canola industry. SaskCanola also communicates directly with the Saskatchewan Ministry of Agriculture on regional issues that fall under provincial jurisdiction.

To view SaskCanola's policy positions on issues affecting producers, please visit saskcanola.com/industry/issues.php.

Please contact Tracy Broughton, SaskCanola's Policy & Producer Relations Manager, for more information at tbroughton@saskcanola.com or 1-306-975-0732.

Save the Date

SASKATCHEWAN OILSEED PRODUCER MEETINGS

Moose Jaw – November 14
Swift Current – November 15
Rosetown – November 16
North Battleford – November 17

CANADIAN WESTERN AGRIBITION GRAIN EXPO

Regina – November 21 & 22
Evraz Place

GRAIN GRADING WORKSHOPS

Rosetown – November 28
North Battleford – November 29

CANOLA WEEK

Saskatoon – December 5-7
Hilton Garden Inn

SASKCANOLA AGM & LUNCHEON

Saskatoon – January 8, 2018
TCU Place

CROP PRODUCTION SHOW

Saskatoon – January 8-12, 2018
Prairieland Park

CROSPHERE

Saskatoon – January 9 & 10, 2018
TCU Place

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

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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 TCU Place in Saskatoon on Monday, January 8, 2018 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 with guest speaker, Greg Johnson. Greg is one of North America's top professional storm-chasers/tornado hunters.



Please visit saskcanola.com for more information closer to the date.



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January 9 and 10, 2018

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FEATURING SPEAKERS:

Dr. Brynn Winegard

Award winning professor and expert in business brain science and "neuroladership"

Howard Yana-Shapiro

Chief Agricultural Officer of Mars Inc. and Senior Fellow, Plant Sciences, University of California, Davis

Darrell Bricker

Canadian author, pollster, public speaker and political commentator. CEO of IPSOS Public Affairs

REGISTRATION:

Early registration:

\$150 - Available from November 1 to November 30, 2017

Regular registration:

\$200 - Available from December 1, 2017 to January 5, 2018

Registration at the door:

\$250

One-day registration:

\$150

For more information, visit:



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Global Vision offers young Canadians trade mission opportunities

Fiona Jochum had never heard of Global Vision before she saw their request for applicants in a 4-H newsletter in May. She soon found out the non-profit organization, founded in 1991, has trained over 30,000 young Canadians through their Junior Team Canada (JTC) trade mission program, travelling to over 30 countries on six continents promoting Canadian industry and culture.

She applied and was accepted as an ambassador for Global Vision's JTC trade mission to China from July 26 to August 15, 2017.

Of the 30 JTC ambassadors, Jochum was one of two Manitobans and the only agriculture representative.

Raised on the family farm near St. Francois Xavier, this self-described farm girl with a passion for music, graduated with a Diploma in Agriculture in 2014 and a Bachelor of Science in Agribusiness in 2016. Working full-time on the family farm this year, she is "exploring the possibility of farming as a full-time career."

Speaking to Jochum, her passion and enthusiasm is evident. While being the lone voice for Canadian agriculture on the mission made her nervous, she viewed it as an opportunity to learn and hone her advocating skills.

Visiting Shanghai, Hangzhou, Chengdu and Hong Kong, her team met with industry, government, community and youth leaders

Thirty delegates from Global Vision's Junior Team Canada traveled to China in August. Fiona Jochum is fourth from the left in the back row.



focusing in particular on growth potential in the Chinese marketplace. Highlights for Jochum were meetings with Chinese rapeseed processors who are interested in importing Canadian canola, a restaurant owner in Shanghai, a food tour operator who works with farmers in Chengdu, and Richard Choi from the Saskatchewan Trade and Investment Office.

But for Jochum, the most valuable experience was meeting with the China Youth Ambassadors (CYA), the JTC counterpart in Chengdu. Similar in age, the two teams found it easy to be open with questions and learn from each other.

This incredible hands-on opportunity increased her knowledge of the complexities and challenges of global trade along with the opportunities.

As a producer, she understands why it is crucial to adhere to regulations both here

and abroad so trade isn't jeopardized. The importance and need for supporting grower organizations and farm lobby groups was reinforced, knowing they ensure farmers voices are heard and work is done on their behalf to better the industry and improve trade ties around the world.

No matter who she spoke with, the importance of relationship-building first, business second was key.

Being part of JTC has bolstered her confidence. She believes stepping beyond the farm gate and becoming involved in the industry as a whole is just as important as growing and producing.

"Stay connected to our customers! Promote the Canadian brand. Jochum emphasizes, "Chinese consumers have the same questions and concerns about food production, quality and safety that we have in Canada."



20 years of CLC

Canola Learning Centre (CLC) is a free farm tour and learning experience aimed at educating urban students and their educators about canola and other Manitoba crops in a real farm setting using fun, entertaining and hands-on activities. Thanks to the partnership with Richardson's Kelburn Farm, the CLC has celebrated 20 years of successful programming.

Over the past 20 years there have been:

- 22,275 kids attend the farm.
- 2.23 million canola seeds have been crushed.
- That would make 7.5 litres of canola oil.
- With each kid pulling a canola plant to explore it, they have uprooted 1/2 an acre.

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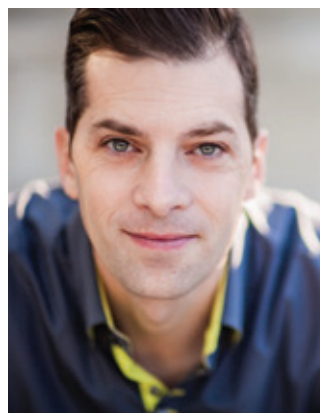
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CROPCONNECT CONFERENCE -

February 14 & 15, 2018 - Winnipeg

ANNUAL GENERAL MEETING -


February 15, 2018 - Winnipeg


CANOLAB - March 14, 2018 - Brandon

CANOLAB - March 15, 2018 - Dauphin

Details can be found on our website **CanolaGrowers.com** or follow us:

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These four moms from China, Mexico, South Korea and India are dedicated canola oil users. Find out why and how they use canola oil.



Credit: iStock.com/Juanmonino

MEET YOUR CUSTOMERS



Elizabeth Bae | South Korea

→ Why do you use canola oil?

I use canola oil for many health and culinary benefits such as high heat tolerance, light texture and neutral taste. Compared to other oils available in Korea, canola oil is the most versatile and cost-effective.

→ How do you use it?

I use canola oil for stir-fry dishes such as different types of Namool, a Korean traditional vegetable stir-fry. Also, during Korea's traditional holidays such as New Years and Thanksgiving, I use it a lot to make Jeon and vegetable and squid fries. To make Jeon and fried dishes, you need to make special dough and I used canola oil to make the dough smooth. It is also a good alternative for salad dressing.

→ What oil did you use for this purpose before you started using canola oil?

I used grape seed oil for stir-fries and fried dishes and olive oil for salads.

→ How did you find out about canola oil?

I don't remember exactly when, but there was a time when retail giants conducted a

huge promotion to introduce canola oil as a great oil for frying. (Maybe it was around the holiday season of Korean Thanksgiving). I was especially impressed by its high heat tolerance. As many Korean foods are stir-fried or cooked in high temperature, canola oil's high smoke point caught my eye, and I have been using canola oil since then.

→ How long have you been using canola oil?

At least 7-8 years.

→ Is there anything special you would like to share about canola oil?

Most Koreans aren't aware of the fact that canola oil can be used for baking. As I can cook with less saturated fat while keeping the same flavour quality, canola oil is my first choice when baking as well. I would like to recommend replacing solid fats like butter or lard with canola oil to people who want to bake healthier cakes, cookies, muffins or any other baking.



Nidhi Gupta | India

→ **Why do you use canola oil?**

Canola oil is healthy and very versatile. It enhances the flavours of the dishes that I cook. It also helps keep my family's heart health in check.

→ **How do you use it?**

I use it for everyday cooking, including Indian preparation of vegetables and lentils as well as for frying. I also use it to brush snacks in my air fryer.

→ **What oil did you use for this purpose before you started using canola oil?**

I used to use a combination of sunflower oil and rice bran oil.

→ **How did you find out about canola oil?**

I found out about canola oil through some recipes in the newspaper and the Canola India Facebook page.

→ **How long have you been using canola oil?**

I have been using canola for a year and a half now.

→ **Is there anything special you would like to share about canola oil?**

This oil has helped make my home-cooked food healthier without compromising on the traditional taste of Indian recipes.

This is how you write "**canola oil**" in Chinese characters:

芥花油



Credit: iStock.com/eskymaks

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Qiu Tian De Xie Zi (Zheng Shihui) | China

→ Why do you use canola oil?

Canola oil has deeply attracted my attention since I first used it in 2016. Canola oil is free of cholesterol and has the least saturated fat. I used to cook desserts with butter on the weekend, but my family never really liked them because they felt the taste was too greasy. Canola oil adds to the delicious nature of baked goods by giving them a moist, soft texture. Replacing solid fats like butter or lard with canola oil allows for a reduction in both total fat and saturated fat to keep us fit.

→ How do you use it?

My family can't live without canola oil three meals a day. As canola oil will enhance the natural flavours of food, I like to use it to fry eggs or mix salads in the morning, and also use it to stir fry vegetables, fry food or even fry steaks for lunch and dinner.

→ What oil did you use for this purpose before you started using canola oil?

As a northerner, we prefer heavier tastes and we love food with rich texture. We used to use peanut oil. As my father has gotten older,

he has started suffering from high blood pressure, diabetes and other diseases commonly found in elderly people. I was really concerned about him. Later, I chose canola oil after a recommendation from my friend. At first, my father didn't like the bland taste, but he later came to like it after his health gradually improved.

→ How did you find out about canola oil?

I always upload recipes on different cooking platforms, and I found that some big names in cooking often cooked with canola oil, so I got to know it. Besides this, I also got more information from canola oil's Weibo and WeChat account.

→ Is there anything special you would like to share about canola oil?

Chinese people prefer heavier tastes, which leads us to suffer from fatty livers, diabetes and other such diseases at a very young age. Canola oil is free of trans fat, low in saturated fat, high in monounsaturated fat, high in omega-3 fat and is also a good source of omega-6 fat. This is why I strongly recommend canola oil.



Credit: iStock.com/Geissmann



Elsa Lucila Quevedo | Mexico

→ Why do you use canola oil?

My husband has a hard time controlling cholesterol and he was warned by the doctor to look after the fats that we eat, so we began to use canola oil a few years ago for its healthy profile, to reduce the intake of saturated fats and as the source of good fats. I benefit from that too. I've been worried about eating healthy all my life and concerned about the health of my family. I've always been very careful with the amount of fats I eat. I cook with that conscience and canola oil now helps me to add flavour with fat without damaging our health.

→ What do you use it for?

Almost everything, but the most I use it for is frying and sautéing.

→ What oil did you use for this purpose before you started using canola oil?

Safflower oil. Now I know that it has more saturated fats and is not as good as canola for heating up.

→ How did you find out about canola oil?

My daughter introduced it to me and the cardiologist recommended it to my husband to help control saturated fats. My daughter told me about all the benefits for health. She explained to me the combination of fats and the convenience to use it in every dish.

→ How long have you been using canola oil?

Almost nine years now.

→ Is there anything special you would like to share about canola oil?

Only to say that for people like me, always looking after the family's health, it is great to have this option available for a daily ingredient. Every time I use it, I know I'm doing well. ✨



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Record canola acres are forecast to produce a record Canadian canola crop, edging closer to 20 million tonnes. Global demand for canola seed, oil and meal is taking all Canada can produce.

CANOLA MARKET SNAPSHOT 2017

BY JAY WHETTER

Statistics Canada, in its September 19 report, forecast 2017 Canadian canola production at 19.7 million tonnes. This is the highest on record, driven by record acres of 22.8 million. Yield estimates, which are based on mid-summer surveys, are lower, at 38.1 bu./ac. for the Canadian average. This compares to 43.1 in 2016 and 39.4 in 2015.

Will this production number rise to crack 20 million tonnes for the first time? It could when harvest concludes and StatCan has a more accurate reference point. In its September 2016 report, StatCan estimated the 2016-17 canola crop at 18.3 million tonnes (as reported in the November 2016 Canola Digest). That

was later revised to 19.6 million as harvest numbers trickled in. StatCan will release a revised crop production estimate on December 6, 2017.

SEED EXPORTS REACH 11 MILLION TONNES IN 2016-17

Canadian canola seed exports were 11 million tonnes for 2016-17. China is the top market for Canadian canola seed, buying just under 4.0 million tonnes in 2016-17. Japan is second at 2.2 million tonnes.

OIL AND MEAL

A strong domestic processing industry, with 14 facilities across Canada that will process



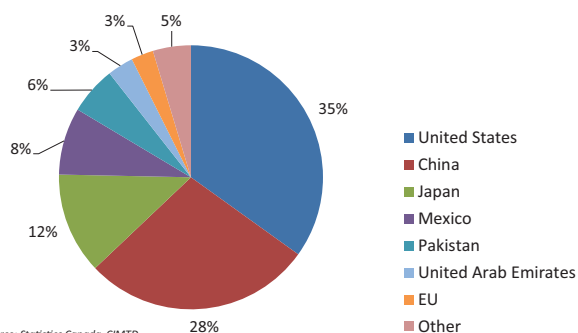
For more on key export markets for Canadian canola, go to canolacouncil.org/markets-stats/markets/

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

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (est'd)*
Harvested area (million acres)	21.7	20.2	20.6	20.6	20.0	22.8*
Production (million tonnes)	13.9	18.6	16.4	18.4	19.6	19.7*
Seed exports (million tonnes)	7.3	9.1	9.2	10.3	11.0	9.9*
Domestic processing (million tonnes of seed crushed)	6.7	7.0	7.4	8.3	9.2	9.0*

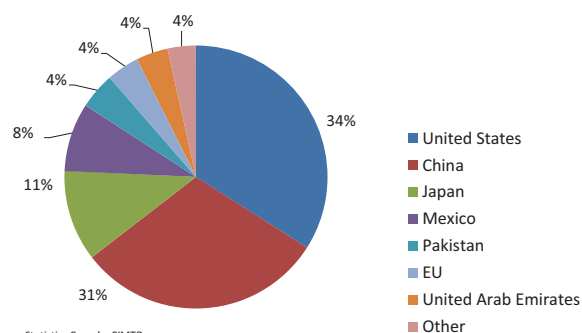
Source: Statistics Canada. *Based on September reports.

SHARE OF EXPORT VALUE - 2015-16 CROP YEAR



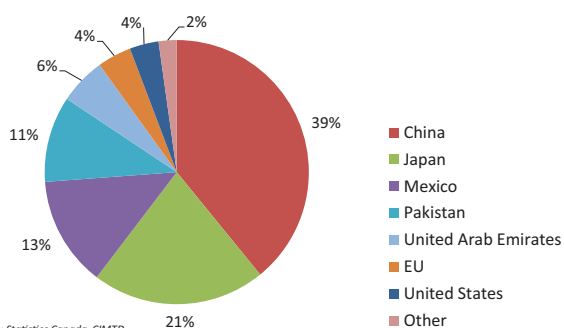
Source: Statistics Canada, CIMTD

SHARE OF EXPORT VALUE - 2016-17 CROP YEAR



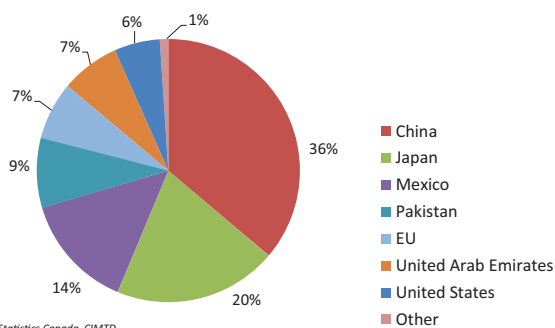
Source: Statistics Canada, CIMTD

SHARE OF SEED EXPORT VOLUME - 2015-16 CROP YEAR



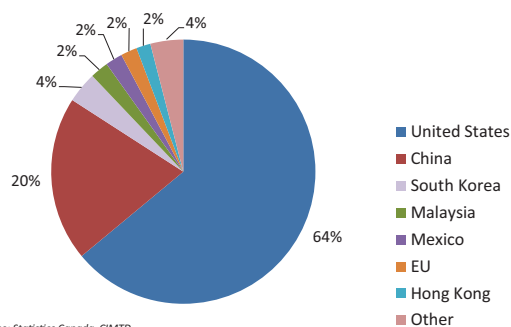
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SHARE OF SEED EXPORT VOLUME - 2016-17 CROP YEAR



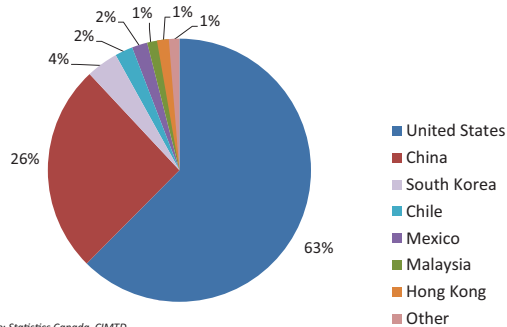
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SHARE OF OIL EXPORT VOLUME - 2015-16 CROP YEAR



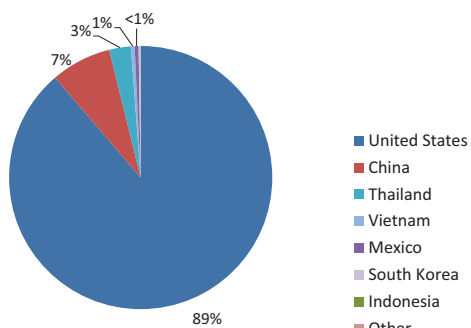
Source: Statistics Canada, CIMTD

SHARE OF OIL EXPORT VOLUME - 2016-17 CROP YEAR



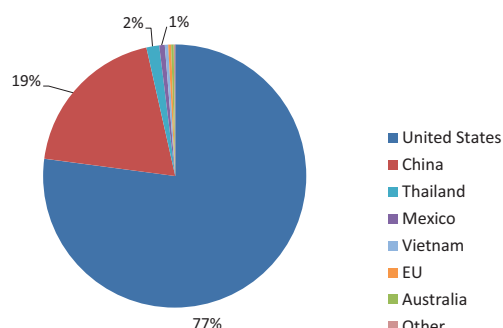
Source: Statistics Canada, CIMTD

SHARE OF MEAL EXPORT VOLUME - 2015-16 CROP YEAR



Source: Statistics Canada, CIMTD

SHARE OF MEAL EXPORT VOLUME - 2016-17 CROP YEAR



Source: Statistics Canada, CIMTD

canola, means Canada also has a large amount of oil and meal available for sale. In 2016-17, Canada exported 3.1 million tonnes of canola oil and 4.7 million tonnes of canola meal.

The U.S. is the biggest market for Canadian canola oil and meal. In 2016-17, it bought 62 per cent of Canadian canola oil exports and 77 of meal exports.

China was second in both categories, with a significant rise in meal purchases. The U.S. purchased 95 per cent of Canadian canola meal exports in 2014-15 and 89 per cent in 2015-16. That fell to 77 per cent in 2016-17, with China increasing its share to 19 per cent. (All of these numbers are shown in the pie graphs.)

GLOBAL OILSEED MARKET CONTINUES TO EXPAND

Soybean production in Canada will also achieve a record in 2017-18. StatCan, in its September estimate, put soybean production at 8.3 million tonnes, up 28.5 per cent from 2016. The rise in soybean and canola acres in Canada is part of a global trend toward more vegetable oil production and consumption.

USDA, in its September 2017 estimate, put global production for all major oilseeds at 578.6 million tonnes for 2017-18, up slightly from the year before and up 48 per cent from the 391.5 million tonnes produced a decade ago. This does not include palm, which provides a lot of oil to the market but is not technically an oilseed. Palm oil production increased 62 per cent over the past decade.

For comparison, the USDA September estimate has global wheat production at 744.8 million tonnes for 2017-18, up 22 per cent over the past decade, and global corn production at 1,032.6 million tonnes, up 30 per cent from a decade ago. In that time, world population rose by around 13 per cent. 🌻

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

Table 2. Global production and exports of major oilseed crops

	2013-14	2014-15	2015-16	2016-17	2017-18 (September forecast)
<i>Seed production (million tonnes)</i>					
canola/rapeseed	71.68	71.45	69.88	70.34	72.14
coconut	5.42	5.42	5.32	5.41	5.54
cottonseed	45.04	44.43	35.78	39.05	44.15
palm kernel	15.93	16.56	15.96	16.81	18.04
peanut	41.87	40.46	40.40	42.87	42.90
soybean	282.75	320.01	313.71	351.44	348.44
sunflower	41.54	39.25	40.30	46.60	47.40
<i>Seed exports (million tonnes)</i>					
canola/rapeseed	15.10	15.10	14.38	16.02	15.74
coconut	0.11	0.11	0.11	0.13	0.10
cottonseed	0.94	0.72	0.74	1.01	1.10
palm kernel	0.04	0.04	0.04	0.05	0.05
peanut	2.90	3.30	3.52	3.94	3.73
soybean	112.78	126.13	132.46	146.29	151.42
sunflower	1.96	1.66	2.00	2.48	2.14

Source: USDA <https://apps.fas.usda.gov/psdonline/circulars/oilseeds.pdf>

Table 3. Global production and exports of vegetable oil

	2013-14	2014-15	2015-16	2016-17	2017-18 (September forecast)
<i>Oil production (million tonnes)</i>					
canola/rapeseed	27.26	27.62	27.83	28.16	28.79
coconut	3.38	3.37	3.32	3.38	3.44
cottonseed	5.16	5.12	4.30	4.41	4.99
olive	3.20	2.40	3.12	2.55	3.05
palm kernel	7.07	7.31	6.98	7.32	7.81
palm	59.30	61.81	58.83	62.32	66.86
peanut	5.72	5.43	5.44	5.86	5.88
soybean	45.24	49.20	51.50	53.94	56.13
sunflower	15.45	14.92	15.37	17.82	18.16
<i>Oil exports (million tonnes)</i>					
canola/rapeseed	3.83	4.07	4.14	4.49	4.64
coconut	1.91	1.94	1.56	1.87	1.72
cottonseed	0.14	0.14	0.09	0.10	0.11
olive	0.84	1.00	0.90	0.84	0.92
palm kernel	2.88	3.23	3.02	2.90	3.06
palm	43.19	47.37	43.73	45.82	47.16
peanut	0.22	0.26	0.25	0.25	0.26
soybean	9.44	11.09	11.68	11.54	11.92
sunflower	7.78	7.38	8.11	9.93	9.44

Source: USDA <https://apps.fas.usda.gov/psdonline/circulars/oilseeds.pdf>

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NAFTA

THEN AND NOW

BY GAIL GRANGER

As the 1980s came to a close, canola was poised to become one of Canada's most important export commodities. Canola was earning new fans around the world, and yield-boosting biotech varieties were on the horizon.

A growing body of research was confirming the benefits of canola products, and the U.S. Food and Drug Administration had just given its "generally recognized as safe" (GRAS) designation to canola oil.

As these strengths gained steam, Canadian canola would be propelled forward by one more important advantage: the North American Free Trade Agreement (NAFTA).

When NAFTA was signed in 1994, the Canadian canola industry became part of the largest free-trade zone in the world. With a great product and nearly obstacle-free access to prospective customers all over North America, exports of canola would soon soar.

"After two decades, no trade agreement has been more important to our industry's growth and competitiveness," says Brian Innes, the Canola Council of Canada's vice president of government relations.

"Today Canadian canola is imported by many countries all over the world, but about 40 per cent of the canola grown in Canada is processed and consumed right here in the NAFTA trading zone."

With renegotiation talks now underway, many in the industry are wondering how these trading relationships could be affected by possible changes to NAFTA.

To appreciate what's at stake, here's a look back at how the agreement has helped all three countries prosper from canola, and a look ahead at improvements a modernized NAFTA could provide.

A MORE COMPETITIVE OILSEED

By eliminating tariffs, NAFTA made canola a more attractive source of oil and meal for the U.S. and Mexico at a very opportune time.

By the 1980s, some food and feed manufacturers south of the border had tried canola products and liked them, but switching to canola would require them to adjust their recipes, ration formulations and processes. By making canola more affordable and reliable, NAFTA provided the confidence and incentive users needed to make the leap.

Early pressure to eliminate tariffs came from what might seem an unlikely quarter – the first U.S. farmers to grow canola. Curtis Hennings, a farmer from Washington State, remembers how he and other early adopters lobbied for removal of the tariffs on all Canadian canola products entering the U.S.

"It was one of the first things we did after we established the U.S. Canola Association," Hennings says. "Our trade representative was a little surprised that a commodity organization was asking for tariffs to come off. But we knew that we would only succeed if canola gained broad acceptance in the U.S. food sector – and that meant it needed to become more competitively priced in this country."

CROSS-BORDER COOPERATION TO BUILD A STRONGER INDUSTRY

Similarly, the Canadian industry understood that the outlook for canola would be more positive on both sides of the border if Hennings and other U.S. growers got off to the right start. Expansion of production in the U.S. would help to further diversify and stabilize supply, which was another important way of making canola a more reliable choice for prospective oilseed buyers.

In this spirit, the Canola Council of Canada extended a helping hand across the border, providing agronomic advice and guiding the group through the formation of the U.S. Canola Association.

Thirty years later, Hennings can see how cross-border cooperation has paid off in many ways, both on his farm and in his surrounding community. Canola is routinely the top earner among the crops he grows on 8,400 acres near Ritzville, Washington, and the benefits are more than financial. Canola was the rotational crop Hennings needed to break a difficult grassy weed cycle and reduce his herbicide use. The crop's deep root system also loosens his compacted soil, to the extent that he rarely uses his deep ripper subsoiler.

And while canola production in the U.S. is still small relative to Canada, the U.S. has become an important part of the North American canola value chain. Today Washington State has its own processing plant, which often makes use of Canadian canola in addition to the local harvest. In Warden, a town of 2,000 about 45 minutes from Hennings' farm, the Viterra cold-press plant employs 38 people and contributes more than \$334 million to the state's economy. The plant is expected to expand as the state's biofuels industry grows.

The U.S. has also developed its own sources of canola seed for planting, including Hennings' own company, Spectrum Crop Development. In the early days, U.S. growers were completely dependent on Canada to supply spring canola seed, but now they can buy varieties adapted by local companies for local conditions.

Today Canadian growers sometimes use U.S.-grown canola seed. About 2,000 tonnes are exported from the U.S. to Canada every year.

A STRONGER, MORE INTEGRATED ECONOMY

Innes points to the Washington State experience as a real-life example of how NAFTA



CANOLA'S IMPACT ON NAFTA ECONOMIES

CANADA: \$26.7 billion/year

250,000 jobs

\$11.2 billion in wages

UNITED STATES: \$7.9 billion/year

16,000 jobs

\$786 million in wages

MEXICO: \$1.5 billion/year

7,100 jobs

\$92 million in wages

**All amounts expressed in Canadian dollars.*



Credit: iStock.com/alexis



More than 60 per cent of the oil and 80 per cent of the meal processed from Canadian canola is imported by our NAFTA partners. In the U.S. alone, the value of canola seed, oil and meal imports from Canada have grown from \$620 million to \$3.6 billion since the historic accord was signed.

has encouraged integration of North American supply chains for the benefit of all NAFTA partners.

In addition to eliminating tariffs, NAFTA has helped align regulations and streamline border clearances, clearing the way for ingredients to cross borders easily, sometimes several times, as they undergo the various stages of processing involved in making the final product.

"Now our countries don't just sell goods to each other, we produce goods together," Innes says. "Each country can grow what it grows best, and process wherever it makes the most sense."

In the canola industry, this model has been a significant source of jobs and economic activity in all three NAFTA countries. According to the Canola Council's latest studies, the total economic benefit of

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the canola industry in North America now totals CDN\$36 billion a year, and more than one-quarter of that impact is felt beyond Canada's borders.

In the U.S., the impact of canola on the national economy has more than tripled since 2006 to CDN\$7.9 billion a year. Almost half of this benefit is generated by the U.S. food manufacturing sector, where canola has become the second most popular oil because of its culinary attributes and heart-healthy qualities. Canola is also making a significant contribution to the U.S. dairy sector, where cows fed canola meal can produce an additional litre of milk per cow per day.

"There isn't enough canola produced in the U.S. to meet demand, so these parts of the U.S. economy rely on Canada for a stable supply," Innes said.

The same is true in Mexico, where canola is a highly-valued source of oil and meal but not well suited to local growing conditions. Mexico is consistently one of the top two consumers of Canadian canola seed, and these imports have tripled since NAFTA was created.

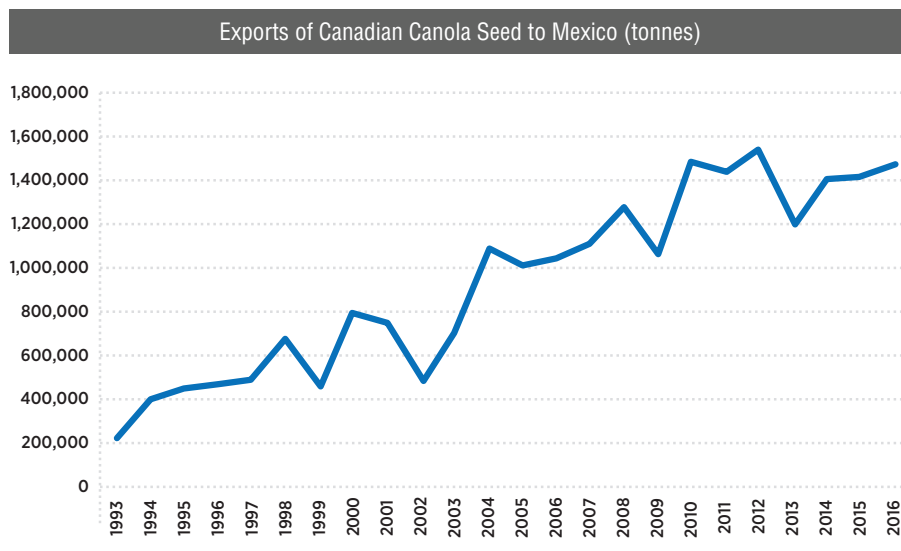
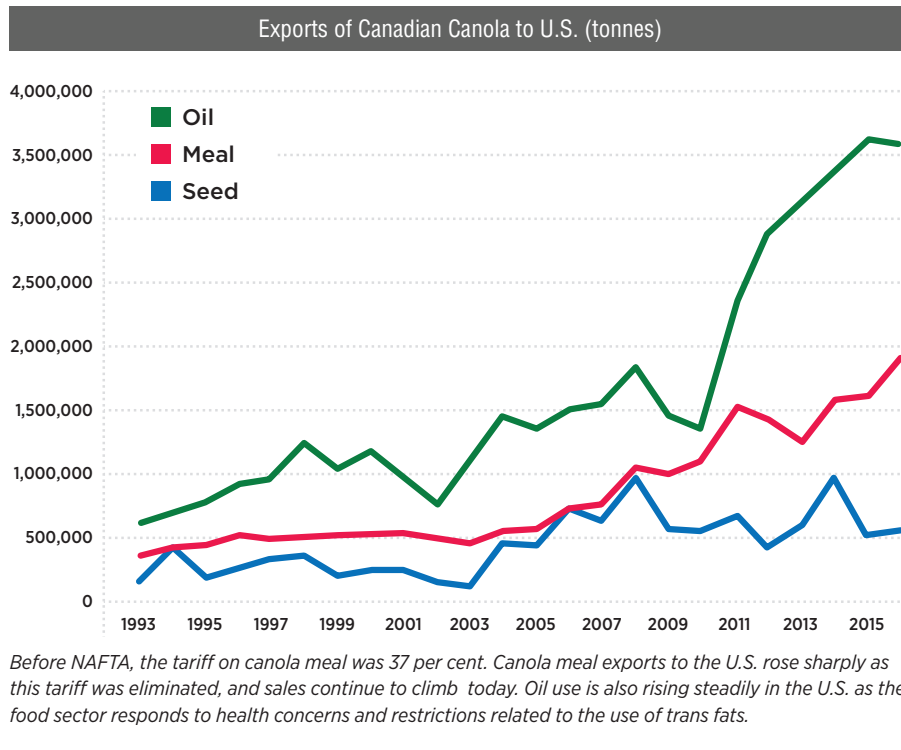
As Mexican companies process Canadian canola seed into oil and meal, more than CDN\$490 million of economic activity is generated every year. As these products are further processed into food, feed and other products, the total benefit to Mexico grows to CDN\$1.5 billion.

OPPORTUNITIES AHEAD: MODERNIZING NAFTA

With NAFTA under renegotiation, anti-trade sentiments voiced south of the border have been a source of concern in some industries. But Innes feels the canola industry has reason to be optimistic.

Innes says a fresh look at NAFTA can open the door to improving and modernizing some of the less-discussed aspects of this 23-year-old agreement, such as rules of origin.

For example, under the current rules, tariffs are applied when further-processed products like canola-based margarine and shortening cross the U.S. border. Canadian margarine exports are taxed 7.4 per cent at the border and shortening is taxed 8 per cent because these products contain palm oil – a necessary ingredient, but one that is not produced in North America. During the current NAFTA talks, the Canola Council of Canada (CCC) is encouraging negotiators to enable free trade in further processed products like margarine and shortening.



Rising imports of Canadian canola seed are fueling the growth of Mexico's value-added processing sector.

The CCC is also seeking better alignment of regulations for crop protection product approvals, maximum residue limits for pesticides, food and feed safety as well as policies that accommodate a low-level presence of biotech crops.

"Above all, we need policy makers to understand that NAFTA works for the agricultural economy," Innes says. "Buyers and sellers in all three NAFTA countries need access free of tariffs and non-tariff barriers."

In Ritzville, Washington, Curtis Hennings echoes Innes' sentiments.

"It's hugely important that NAFTA stay in place," Hennings says. "The trade between these three countries is huge, and on the agriculture side, it's been great for all of us." 🌻

—Gail Granger is a freelance writer based in Winnipeg.



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Field testing has started for next-generation specialty canola varieties with lower saturated fat content, long-chain omega-3 fatty acids and improved ProPound-branded meal.

FIELD PRODUCTION STARTS FOR NEXT-GEN SPECIALTY CANOLA

BY RICHARD KAMCHEN

Genetic advances in canola oil and meal have created traits that should broaden end-use demand as Western Canadian production climbs.

OMEGA-3

Cargill, in collaboration with BASF, has developed an omega-3-rich canola whose oil could give aquaculture farmers a more sustainable way to raise fish and ease harvest pressure on wild fish populations.

"This is a project that we've been working on now for seven years and are eagerly anticipating rollout in the coming years," says company vice-president of market development, Willie Loh.

Earlier pilot testing demonstrated how eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) oil from this specialty canola could completely replace fish oil in salmon feed rations without any impact on the fish, Loh says.

Cargill also sees the product potentially broadening access to EPA and DHA omega-3s in consumer diets, but Loh says fish is the largest target right now: "Human consumption is primarily a supplement market."

Cargill is also taking care to prevent any cross-contamination.

"What we don't want to do is have pollen potentially contaminate any other canola crop," says Loh. "We're going to keep this in the U.S. We don't want to contaminate the mainstream canola crop, and frankly we don't want the mainstream canola crop to contaminate our omega-3 oil."

As a genetically-engineered crop, omega-3 canola requires very responsible stewardship, and Cargill is ideally positioned to maintain a controlled system, he says.

"The advantages we have in Cargill are: one, we started the whole closed-loop production system with high-oleic canola, and two, we have managed identity-preserved production of multiple specialty trait crops for 20-plus years," Loh

says. "We will own the responsibility

of the supply chain, which is something we take seriously."

Another player in omega-3 canola is Nuseed. They, in collaboration with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Australia's Grains Research and Development Corporation (GRDC), developed canola seed with an oil profile that includes long-chain omega-3 fatty acids DHA, EPA and docosapentaenoic acid (DPA).

The DHA-rich omega-3 oil will be used as a critical ingredient in aquaculture feed and in human nutrition, with anticipated commercial availability in 2018 or 2019. With an excellent harvest of 3,000 acres of their omega-3 canola grown under the stewardship of the USDA notification process, Nuseed's pre-commercialization progress is on track, says Andy Thomas, Nuseed's general manager.

Thomas notes most people don't consume the amount of omega-3 recommended by the World Health Organisation. Nuseed reports only 17 per cent of the world population consumes recommended levels of omega-3, with consumption lowest in the most prosperous nations.

There's a long-term need for additional sources of omega-3 to meet nutrient requirements through fish or supplement



For more insight into the specialty oil market, search for the article "Why Jack in the Box uses canola oil" at canoladigest.ca.

consumption, says Thomas. Omega-3 fatty acids are essential to brain, eye and heart health, and inflammation management.

A seed-based solution to supply this market will take some pressure off wild fish stocks. One hectare of this canola can potentially provide the omega-3 oil yield equivalent to 10,000 kilograms of the forage fish important to maintaining a healthy ocean environment, Nuseed says.

Thomas expects the new trait to expand acres and calls it good for the ag industry and canola sector, with North American and Australian growers and markets benefitting.

“We would expect that it ends up being expansionary to the amount of canola being grown, and providing an additional source of sustainable omega-3 oil to the market,” he says, adding the product will be grown in a traceable closed-loop grain-handling and oil-processing system.

Dow AgroSciences has also done work in the omega-3 area, with a published study last year revealing its progress in EPA- and DHA-producing canola plants.

But with Dow Chemical and DuPont’s recent official merger to form DowDuPont, the company isn’t

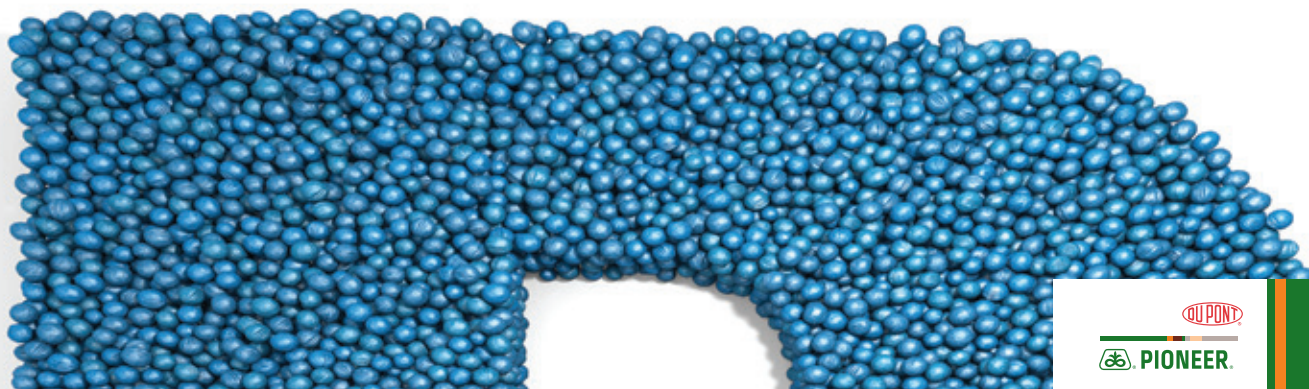
revealing much as it reformulates longer-term strategies around new traits.

LOWER SATURATES

This year marked the first in which Cargill saw its low-saturated, high-oleic canola produced in Canada.



Credit: iStock.com/Jasmina81



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Nuseed had 3,000 acres of its new omega-3 canola grown under stewardship of the USDA notification process in Washington state.



“It’s been almost a 10-year journey for us,” says Loh.

By the end of this season, Cargill will have a very good idea about how aggressively it can push out its low-saturated, high-oleic canola commercially, and where it can grow, he says.

“The expectation is that we will gradually increase our acreage and gradually displace what I think of as our first generation of high-oleic canolas,” Loh says. “Within five years, if you’re going to buy high-oleic canola from Cargill, it’s going to be lower in saturated fats.”

Cargill limited the saturated fat level to around 4.5 per cent – versus seven to 7.5 per cent in standard canola – with oleic levels limited to 70 per cent to satisfy its intended quick-serve restaurant market.

The food industry’s focus on reducing saturates continues to bode well for Dow AgroSciences’ healthier oils as well.

“We continue to grow our omega-9 canola oil platform,” says Dave Dzisiak, commercial leader of grains and oils with Dow AgroSciences.

He anticipates ongoing good demand and growth across the food industries and trends around healthy snacking, creating a need for healthier, high-stability oils.

Nutritional advantages of omega-9 oils have resulted in over



“ProPound gives canola an opportunity it never had before.”

—Dave Dzisiak

“Within five years, if you’re going to buy high-oleic canola from Cargill, it’s going to be lower in saturated fats.”

—Willie Loh



Credit: iStock.com/Geo-grafika

1.5 billion pounds of trans and saturated fats removed from North American diets, Dzisiak notes.

Food brands like Frito-Lay, Boston Pizza, KFC and Jack in the Box, among others, have already switched to omega-9 oils, the company says.

PROPOUND CANOLA GOES FIELD SCALE

This fall, Dow AgroSciences will be getting its first look at wider-scale field scale production of varieties containing its ProPound trait, says Dzisiak.

“From that, we’ll be starting to go into customer development activities,” he adds.

ProPound is an advanced canola meal aimed at displacing soybean meal in poultry and swine diets, and has been years in the making.

“It’s been 10, 12 years of research. It’s a complicated trait.”

Large and growing canola production in Canada and expanding crush levels has saturated the North American dairy market with canola meal, says Dzisiak. ProPound will allow for new markets to open beyond what’s been the traditional home for most canola meal.

“It gives canola an opportunity it never had before,” Dzisiak says. “It opens up a very large market – markets that are closer to home and easier to serve instead of having to send it to California.”

Feeding trials demonstrated ProPound’s ability to totally replace soybean meal in monogastric feed rations, he adds. Its higher protein levels – about 44 per cent, which is comparable to soybean meal and above conventional canola meal’s 37 per cent – and reduced fibre components make ProPound canola meal more digestible for poultry and swine.

ProPound gives producers a more cost-effective protein meal, providing the same performance in terms of animal growth, but at a lower cost, offering immediate savings by reducing swine and poultry feed rations for producers, Dzisiak says.

The company projects ProPound will see canola meal go from only a moderately-used ingredient in monogastric animal feeds to “very widely used at high inclusion levels.” And that’s how canola meal will become a true competitive substitute to soybean meal.

“In the course of the next number of years, we’ll begin to ramp up and expand that platform,” Dzisiak says, adding a big part of the process in determining the speed of its introduction will be the merger. ✿

—Richard Kamchen is a freelance agriculture writer based in Winnipeg.

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Dockage can significantly impact the value of canola deliveries. With a better understanding of dockage and the official assessment process, canola growers can be confident they're getting the best possible return.

UNPACKING THE PROCESS TO ASSESS DOCKAGE

BY JANELLE WHITLEY

Dockage is among farmers' top concerns when it's time to sell their canola. While not a grading factor, the level of dockage significantly impacts what farmers can earn from their crop.

At licensed elevators and processing plants, the dockage in every truckload is assessed to determine the net weight of canola in the delivery. The more dockage in the load, the less canola it contains.

The bottom line is this: In a 40-tonne load of canola, every one percentage point of dockage will reduce the net weight of the delivery by 0.4 tonnes. When canola is selling at \$500 per tonne, every one per cent of dockage will reduce the value of a 40-tonne truckload by \$200.

Similarly, dockage is an important concern of grain elevators and processors. Removing dockage and other foreign material from canola prior to processing is important to optimize oil extraction yields, maintain oil quality specifications such as colour and reduce wear on equipment.

Making sure dockage assessment is done properly is important for everyone in the canola value chain. Farmers have the right to watch this process when they deliver canola to licensed primary elevators. This right is set out in the *Canada Grain Regulations*.

The Canadian Grain Commission's *Official Grain Grading Guide* outlines the process licensed facilities should follow when assessing the dockage in each farm delivery, as well as approved cleaning equipment to use.

The bottom line:
In a 40-tonne load of canola, every one percentage point of dockage will reduce the net weight of the delivery by 0.4 tonnes. When canola is selling at \$500/tonne, every one per cent of dockage will reduce the value of a 40-tonne truckload by \$200.



Dockage basics

WHAT EXACTLY IS DOCKAGE?

Basically, it's material like stems and pods, straw, other grains, fine broken seed and weed seeds. The Canadian Grain Commission's *Official Grain Grading Guide* defines dockage as the material that must be removed using approved cleaning equipment before a grade can be assigned.

WHAT IS CONSPICUOUS ADMIXTURE?

Conspicuous admixture is material that can't be easily cleaned from canola because it's roughly the same size and shape as the seed. It might be weed seeds or foreign material such as sclerotia. It's conspicuous... meaning that it can be easily distinguished from canola by the naked eye.

Conspicuous admixture matters because there are specific tolerances for the amount of material that can be present within each grade of canola. In No. 1 Canola, the grade tolerance for conspicuous admixture is one per cent.

HOW CAN I ANTICIPATE THE DOCKAGE IN MY CANOLA?

The Canadian Grain Commission offers a free, unofficial assessment of dockage, grade and other quality attributes through the *Harvest Sample Program*. Samples are accepted through harvest until December 31, 2017. You can find out more at grainscanada.gc.ca.

5 steps to assess dockage

The most common steps included in the dockage assessment process are briefly described below:

1. Collecting the sample: The elevator operator takes a representative sample of canola from the truck and divides it into a smaller working sample. The working sample is weighed before it is cleaned.

2. Passing the sample over sieves: The working sample is passed over two sieves – one with round holes and one with slots. When the sample is sifted over the round-hole sieve, the canola drops through the holes and the large dockage material stays on top. When the sample is sifted over the slotted sieve, the canola stays on top and the smaller dockage drops through to the pan.

Choosing the correct sieve sizes is a key part of the dockage assessment process. When selecting sieves, the goal is to remove enough conspicuous admixture so that the grade tolerance can be met, while also minimizing the loss of reasonably sound canola. Choosing sieve sizes that will produce this result requires care and attention by the person doing the assessment.

3. Aspirating the sample: Once the sample has been sieved, more dockage is removed through aspiration using the Carter Day Dockage Tester.

4. Assessing conspicuous admixture: The aspirated sample is then assessed for conspicuous admixture – the material that can't be easily cleaned from canola because it's roughly the same size and shape as the seed. A small portion is divided from the cleaned sample from which the conspicuous material is hand-picked out, weighed and a percentage calculated.

5. Calculating the dockage and net weight of canola: The dockage removed by sieving, aspiration and hand picking is weighed and compared to the pre-cleaning weight of the working sample. This ultimately determines the total percentage of dockage and the final net weight of the canola delivery.

If you have concerns about the assessment done at the time of delivery to a licensed elevator, you can seek a binding assessment from the Canadian Grain Commission. This option is called "Subject to Inspector's Grade and Dockage."

WANT TO LEARN MORE?

Canadian Canola Growers Association (CCGA) has compiled a variety of grower resources focused on dockage,

including a two-part video series. These resources address the most common grower questions: Is small seed considered dockage? What about green or damaged seed? What can growers do to manage dockage?

To find the answers, visit ccga.ca. ✖

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

Canola performance – driving yields with smart input choices

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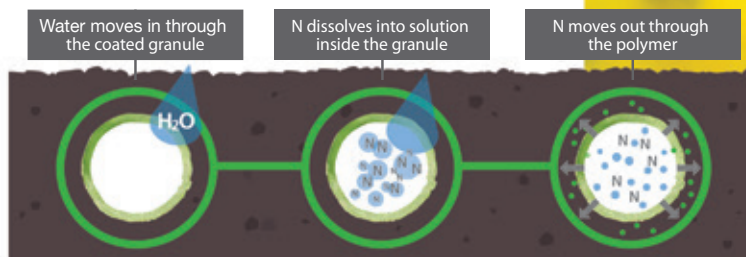
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Canola Performance Trials (CPTs) for 2017 included straight cut trials, more clubroot-resistant varieties and extra detail on environment and management for each trial site. Find the latest data at canolaperformancetrials.ca

CANOLA PERFORMANCE TRIALS: YOUR TOOL FOR SEED SELECTION



BY TARYN DICKSON

Canola Performance Trial field tours this past summer featured a large CPT sign with the line ‘Funded by growers for growers’ and logos for the three provincial canola grower organizations and the Canola Council of Canada. That’s because the 2017 CPT program is completely funded by Alberta Canola, SaskCanola and the Manitoba Canola Growers Association, along with contributions from the British Columbia Grain Producers Association. The Canola Council of Canada administers the program on their behalf. CPTs provide valuable, independent, third party canola variety performance data to every canola grower.

NEW TO THE CPT PROGRAM FOR 2017

- The addition of the new straight cut trials (in which variety entries are straight cut at 12 per cent moisture) were carried out at several small plot locations this year. This was added in response to the grower interest in straight cutting canola and varieties with pod shatter tolerance. Full details on the protocols are posted on the CPT website at canolaperformancetrials.ca/trial-protocol.



Download the CPT 2016 results booklet at canolaperformancetrials.ca

Drone image of small plots.

- Although clubroot-resistant (CR) varieties have been included in the trials before, extra attention was given to ensuring a sufficient number of CR varieties were included in 2017.
- CPT cooperating sites collected a number of crop management details, including stand establishment specifics, major weather events and fertility information based on target yields. A summarized version of this 2017 information will be posted at canolaperformancetrials.ca, once compiled.
- In addition to the 2017 CPT data results booklet that will be coming out after harvest, a new booklet called the Canola Variety Selection Guide: Featuring CPT Summary Data was produced and is available on the CPT website for download and online reference.

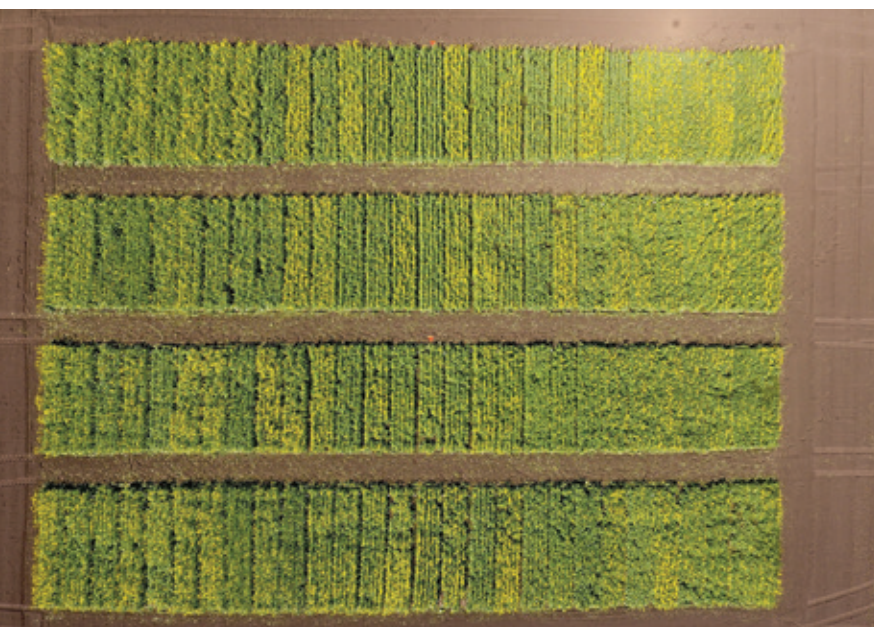
The Canola Variety Selection Guide is designed to assist growers with the variety selection process, with a step-by-step format using 2011 through 2016 small plot and field scale CPT results. Additional seed selection factors addressed (e.g. average growing degree day maps) can be handy reference information for a grower or agronomist when selecting a variety and for industry members to showcase when explaining the suitability of varieties.

To help growers determine which datasets are high-quality results, the Selection Guide includes a section on descriptive values (e.g. sample size and coefficient of variation) and what they mean. It also explains several characteristics that should be considered in order to look at a dataset more critically, such as experimental design, replication, site years and the number of site locations.

PROTOCOLS TO ENSURE QUALITY

The CPT program focuses on producing high-quality small plot and field scale data. It follows several quality assurance steps throughout and after the growing season, including:

- The CPT Technical Committee establishes the protocols, develops plot designs and reviews the dataset at the end of each year.





- The CPT Governance Committee, made up of the three provincial oilseed specialists and three Canadian Seed Trade Association representatives, provides direction on variety selection, sites and trials, budget, website, booklets and workshops.
- Drones were used again this year to take plot photos which will act as a reference when the Technical Committee reviews the site results after harvest.
- The multiple inspections at each of the small plot sites occurred again this year, as always, and various field scale inspections took place after herbicide applications.
- Similar to last year, both the CPT inspector and the farm cooperator will need to be in agreement that the field-scale trial data is valid and suitable for inclusion in the CPT publication in order to be utilized. Weigh wagons are required for yield measurements.

NEXT STEPS

The CPT program is exploring more options to provide value to its audience. Committees are investigating the impact of environmental factors and management practices on canola variety performances in order to provide growers with useful information on selecting and fertilizing canola varieties for increased yield, increased profitability, increased sustainability and reduced production risk.

Another potential option is to set up CPTs to identify stress tolerance and yield stability of commercially available canola varieties for Western Canadian growers. This could show which canola varieties perform well across a range of environmental conditions and which perform well under stress conditions.

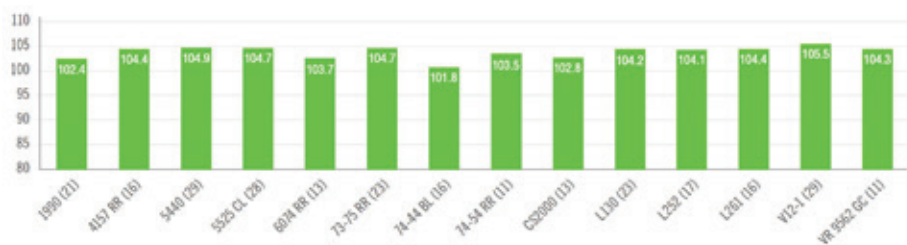
Finally, new statistical techniques could provide results on a wider range of topics, such as the 'Best Linear Unbiased Predictor (BLUP)' technique, which basically uses previous years' data to model predictions for next year's performance.

The CPT program is funded by canola growers for canola growers. Check out canolaperformancetrials.ca and see what more it can do for you! ✿

—Taryn Dickson is resource manager for the Canola Council of Canada's Crop Production and Innovation team.

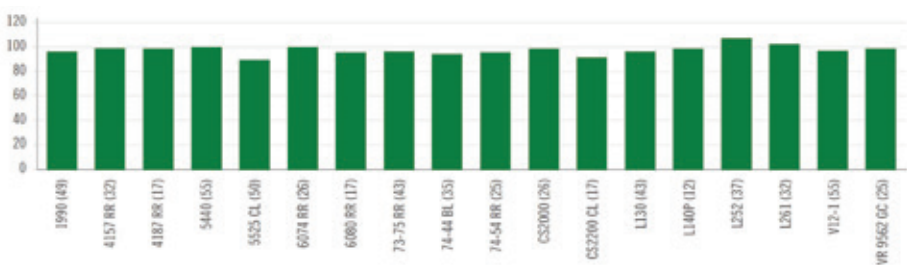
QUERIES DISPLAYED IN THE CPT BOOKLET INCLUDE...

Average DTM of varieties* (and number of sites) in small plot trials in the short SZ



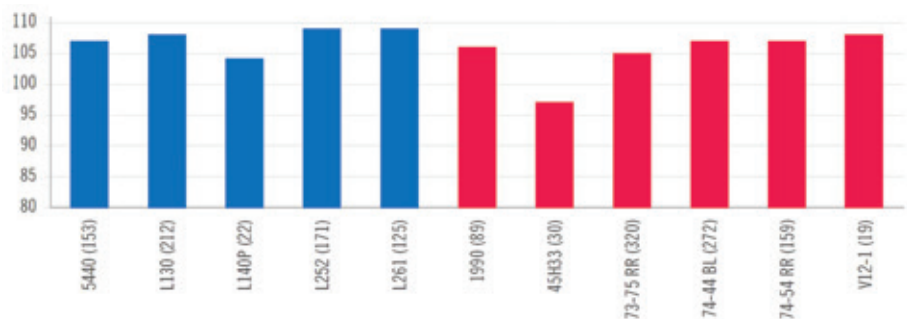
Average days to maturity of varieties (and number of sites) in small plot trials in the mid and short season zone.

Average yield (% of check) of varieties* (and number of sites) in small plot trials in Saskatchewan



Average yield (percentage of check) of varieties (and number of sites) in small plot trials in Manitoba, Saskatchewan, Alberta and British Columbia. This graph shows the Saskatchewan example.

Average yield (% of check) of LL (blue) and RR (red) varieties* (and number of sites) in field scale trials



Average yield (percentage of check) of Liberty Link (LL) and Roundup ready (RR) and Clearfield varieties (and number of sites) in small plot and field scale trials. This graph shows field scale trial data.

*The varieties listed in most of the above graphs include only those which had ≥ 10 sites and were either grown in two of the last three years of CPTs (2014-2016) or were in both 2016 and 2017 trials. No Clearfield data was included in the field scale graph because no Clearfield varieties were in field scale sites. In the mention of percentage of check, check refers to 5440 or an adjusted value for 5440.

Seed with genetic resistance to clubroot is an essential tool in clubroot management. This article explains clubroot resistance, when to use it and how to protect it.



WHAT DOES CLUBROOT RESISTANCE MEAN?

BY JAY WHETTER

Clubroot-resistant (CR) canola varieties are key tools used to delay clubroot establishment and manage clubroot disease on the farm. However, to prevent rapid genetic shifts in clubroot populations and subsequent loss of effective resistance, these CR varieties must be used in an integrated management approach, which includes practicing a diverse crop rotation with at least two years between canola crops, effectively managing weeds, sanitizing equipment and minimizing soil movement.

RESISTANT, INTERMEDIATE AND SUSCEPTIBLE

Through Western Canada Canola/Rapeseed Recommending Committee (WCC/RRC) protocols, varieties are compared to the susceptible check variety for clubroot infection and are assigned either resistant (R), intermediate (I) or susceptible (S) ratings.

As noted in Table 1, R varieties are not immune but they highly restrict the development of clubroot symptoms in fields with low to moderate disease pressure from resting spores in the soil. If a variety has no CR label, assume it is susceptible to clubroot.

“Even when growing a CR variety, growers have to check for clubroot to make sure the disease stays below expected levels. If it seems to be worse than it should be, the variety may not have resistance to the predominant pathotype in the field,” says Dan Orchard, Canola Council of Canada agronomy specialist for Central Alberta North.

NO VARIETIES R TO ALL PATHOTYPES

A base R label requires that the variety is resistant to the predominant clubroot strains or pathotypes in Western Canada. Additional ratings

can be appended to the base R label to describe resistance to specific uncommon or new pathotypes.

No CR varieties, including new ones with multiple resistance genes, are resistant to all of the clubroot pathotypes detected in Western Canada to date. As clubroot populations in infested fields become more diverse over time, and more CR resistance genes are bred into canola varieties, the usefulness of rotating CR varieties with different resistance will increase. Currently there are no tests commercially available for growers to distinguish or detect new virulent strains in their infested fields.

WHO SHOULD GROW CR VARIETIES?

Canola growers who have clubroot on the farm should definitely use clubroot-resistant (CR) varieties. If clubroot is found anywhere in the municipality, county or district, CR varieties will reduce the build of spores in a field if (when) clubroot moves onto your farm. If you don’t know whether clubroot is in your area, CR varieties can be a useful prevention tool. You can also submit soil and plant samples to a lab to be tested for the presence of clubroot DNA.

“The risk of using a CR too early and contributing to breaking of the resistance is small compared to the risk from not using a CR variety early and having the disease escalate quickly to very costly levels,” Orchard says.

Visit clubroot.ca to learn more about clubroot prevention, detection and management, including a list of labs that provide DNA analysis. ✖

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

Table 1. The clubroot resistance classification system			
	Resistant (R)	Intermediate (I)	Susceptible (S)
Classification	Less than 30% infection compared to susceptible checks in disease tests.	Between 30 and 50% infection compared to susceptible checks in disease tests.	More than 50% infection compared to a susceptible check.
What this means	(R) varieties are not immune, but highly restrict the development of clubroot symptoms in fields with low to moderate disease pressure from resting spores in the soil.	This (I) rating will mostly be used for adding rating labels to the base (R) label in multiple-resistance gene varieties to specify moderate resistance against certain new strains.	If there is no CR label on a variety, assume it is susceptible to clubroot. An (S) label could be added to a base (R) label to specify susceptibility to certain strains that aren't common.
What to expect	Under heavy pressure in severely infested fields, an (R) variety can show significant root galling, but may develop fewer and smaller galls than a susceptible variety. Under these heavy pressure situations and frequent use of CR varieties, clubroot populations rapidly evolve to strains that overcome the resistance.	Although intermediate resistance may restrict the development of clubroot symptoms for the corresponding strains, the spore concentration in the soil will be increased.	An extreme buildup of spores can occur very quickly when susceptible varieties are grown in short rotation on slightly infested fields.
Management tips	To delay this shift in clubroot strains and loss of CR variety efficacy, CR varieties should not be grown in short rotations in infested fields.	Varieties with additional (I) labels can provide marginally better disease protection on fields with presence of new corresponding strains, but should not be grown in fields where resistance to predominant strains has been widely defeated.	Susceptible varieties should not be grown in clubroot-infested fields, or those at risk of becoming infested soon.

Farmers prove that 6074 RR yields like InVigor®

With yields that lead the Genuity® Roundup Ready® segment, 6074 RR proved it could go head-to-head with the perceived yield leader, InVigor® hybrids. In 2016, the BrettYoung vs. InVigor Challenge Trials were launched – these are farmer-run, head-to-head trials across Western Canada that featured 6074 RR against the best InVigor hybrids. In those trials, 6074 RR yielded 102% of InVigor with an average 53.6 bushels per acre. And 2017 results are once again proving that 6074 RR can challenge InVigor yields.

“The results were very close but 6074 RR out-yielded the InVigor variety,” says Mike Bartley at Killarney, Manitoba. “In the past usually InVigor has been a bit better than Roundup Ready varieties, but 6074 RR can compete with InVigor.”

Bartley grew 80 acres of 6074 RR in the middle of a 530-acre field of InVigor L252 canola. His 6074 RR yield was 54.8 bushels per acre and L252 was 53.1 bushels per acre. He swathed both varieties and says that 6074 RR went through the combine easier and threshed easier.

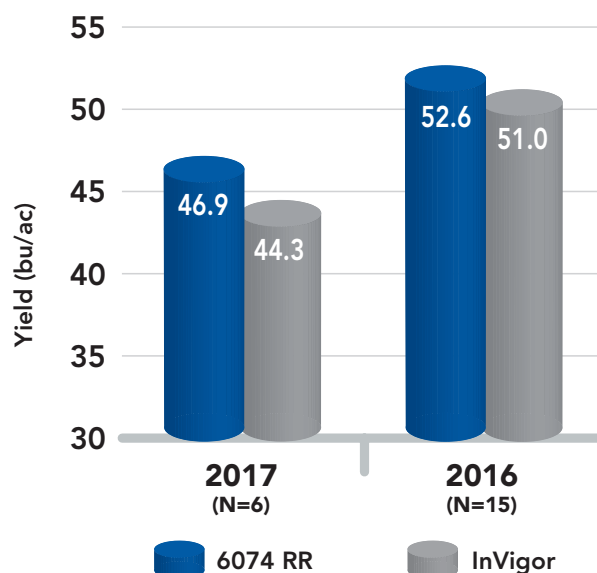
Farmer-run trials; 6074 RR out-yields InVigor

In 2017 so far, about a third of the Challenge Trials have been harvested and reported. 6074 RR has out-yielded InVigor varieties in five out of six challenges and equaled InVigor in the sixth. In a year of difficult growing conditions, 6074 RR is averaging 46.9 bushels per acre - 6% higher than the InVigor varieties.

“Only every so often a company identifies a variety that just stands out from the rest. 6074 RR is one of those varieties. We had a lot of experience in our own trials and saw that 6074 RR was a really consistent performer and was always in the top one or two hybrids. We know it performs just as well as InVigor varieties.”

- Eric Gregory, Marketing Lead with BrettYoung Seeds at Winnipeg, Manitoba

6074 RR vs InVigor Yields



Source: 2016: Farmer or retailer run trials in Manitoba and Saskatchewan.
2017: Farmer run trials in Manitoba and Saskatchewan.

DefendR Sclerotinia tolerance trait

BrettYoung introduced the DefendR™ trait platform as part of an active disease management strategy. 6074 RR carries the DefendR Sclerotinia tolerance trait and has improved Sclerotinia tolerance over susceptible checks

“6074 RR has Sclerotinia tolerance at levels that will reduce impacts of infection and reduce yield loss wherever disease pressure is present,” says Rene Mabon, Agronomic and Regulatory Services Manager with BrettYoung.

Mabon says the DefendR trait allows for greater flexibility in fungicide application timing if flowering is uneven and staggered. Additionally, the improved Sclerotinia tolerance can help reduce the impact of Sclerotinia in long-flower crops where the window of fungicide protection has lapsed.

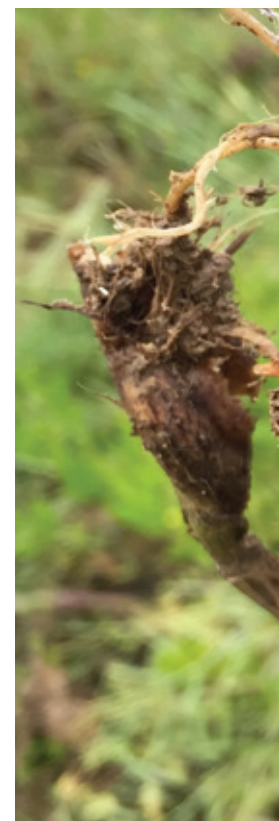
“If environmental conditions favor the disease, we recommend selecting varieties with the DefendR Sclerotinia tolerance trait as well as using a fungicide for a complete defense.” says Mabon.

For up-to-date results from the Challenge Trials, go to brettyoung.ca/6074

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Ian Epp assesses a producer's field for disease in the Anhui Province, China.



Canola and clubroot in China

Canola production and acres in China are quite similar to Canada's. And like Canada, China also has a challenge with clubroot.

BY JUSTINE CORNELSEN AND IAN EPP

China is Canada's No.1 importer of canola seed, but the country also produces 15 million tonnes of *Brassica napus* canola on upwards of 18.5 million acres. Production and acres are quite similar to Canada's 19.6 million tonnes on 20 million acres, based on 2016-17 figures. And like Canada, China also has a challenge with clubroot.

We went to China to attend the International Clubroot Workshop in Wuhan, hosted by the Huazhong Agricultural University. The workshop consisted of research updates and results from institutes all over the world along with clubroot field tours and Chinese agricultural tours. China was the ideal host country because they grow numerous host crops for the clubroot pathogen, *Plasmodiophora brassicae*. These crops include Chinese cabbage, turnips, radishes, broccoli, cauliflower, rapeseed and canola.

The disease was first found in the Hubei province in 2009, and since then has spread rapidly throughout the country. Chinese agricultural practices of intensive tillage, field flooding and draining for rice production, and movement of livestock contributed to this rapid spread.

HIGHLIGHTS FROM THE INTERNATIONAL CLUBROOT WORKSHOP

Messages from the workshop that will be of interest and relevance to Canadian farmers, extension staff and researchers are:

- Clubroot is an obligate parasite which means it cannot complete its lifecycle without exploiting a suitable host. For clubroot, this means a brassica species. Crop rotation with non-host crops and weed control to remove brassica weeds and volunteer canola will keep resting spores from completing their lifecycle.
- Like Canada, China is finding that increased cultivation of the same variety allows for the resistance to quickly become broken down. Breeding for resistance is considered one of the best methods to control the disease, but canola has limited variability in sources of resistance. Some strategies for continued success in resistant breeding is to use genes from distant species to help broaden resistance resources in canola and to look towards pyramiding current resistance genes.
- In China, clubroot resistance is controlled by one single dominant gene. They have been looking for new novel germplasms for clubroot resistance and genetic improvements for disease-resistant *Brassica napus*. By taking turnip, radish and Chinese cabbage resistance lines and backcrossing them, Chinese



*Top Right:
Selfie of Justine
Cornelsen and
Ian Epp.*

*Below:
A conference
tour included a
stop at clubroot
resistance
trials and soil
amendment
trials.*



breeders hope to have new genetic resources for practical use in *B.napus* clubroot-resistant cultivars.

- The dominant clubroot pathotypes in China are 4, 7 and 9. The main pathotypes in Canada are 3, 5 and 8.
- In Canada, some findings suggest that Mendel resistance has been almost completely overcome by the new strains of clubroot.
- The need for a standard clubroot severity rating scale and an updated differential set of clubroot pathotypes was expressed throughout the conference. Dr. Stephen Strelkov, clubroot researcher from the University of Alberta, and his team have been working towards creating a Canadian Clubroot Differential (CCD) set which will help characterize new clubroot pathogens.
- A mix of viable and non-viable resting spores can be found from topsoil to deeper in the soil profile. Resting spore concentrations do not decrease with depth. This could reduce the disease management benefit from top-soil amendments.
- Research shows a weak relationship between soil pH and clubroot disease incidence, but a pH of greater than 7.5 does seem to reduce clubroot. Further work on the treatment and termination of clubroot spores using fumigates is underway.

INTERESTING FACTS ABOUT CHINESE CANOLA PRODUCTION

In some areas of China, fields will produce winter varieties of canola for roughly eight months of the year, then they're flooded to produce rice for the other four months, and then go straight back into canola. Some of these areas have been able to withstand

7,000 years of intense farming while other areas within China and around the world have turned into deserts because of intensified agriculture.

The average farm size in China is 1.5 acres and the country has roughly 300 million farmers. To put that in perspective, Canada has about 43,000 canola growers.

CLOSING REMARKS

Although canola production practices in China and Canada have many differences, we both struggle with managing the spread of clubroot. Researchers in both countries would greatly benefit from shared resources to help further understand clubroot and incorporate new sources of resistance to manage the disease. This canola cooperation could also provide benefit beyond the battlegrounds of clubroot management. 🌻

—Justine Cornelsen and Ian Epp are agronomy specialists with the Canola Council of Canada.



Researchers go on camera to share results

The Canola Research Hub at canolaresearch.ca is a user-interactive database with practical tools that bring grower investment in agronomic research back to the farm. If you like to learn through videos, the Hub has two new video interviews to explain recent research on cabbage seedpod weevil management and fungicides to control blackleg.

BY BARBARA CHABIH

The Canola Research Hub video gallery contains interviews on a variety of topics. Users can hear directly from lead researchers, and navigate the timeline to the questions and answers most relevant to their needs. Two of the most recent additions are interviews with Hector Carcamo of Agriculture and Agri-Food Canada

Below: Hector Carcamo provides answers and recommendations on monitoring and managing the combination of cabbage seedpod weevil and lygus bugs in canola crops.



(AAFC) in Lethbridge and Gary Peng of AAFC Saskatoon, both under the category of Integrated Pest Management.

MANAGING CABBAGE SEEDPOD WEEVIL AND LYGUS BUG

Two rather important chronic pests of canola are cabbage seedpod weevil (CSPW), an exotic pest of particular concern to growers south of Highway 1 in Alberta and southwest Saskatchewan, and lygus bug, a native pest that attacks many Canadian crops. Although both insects arrive to canola fields at the bud to early flower stage, they have quite different life cycles and the timing for both damage to the crop and managing these pests differs as well.

Below: Hear from Dr. Gary Peng about mitigating blackleg disease in canola by watching the interview posted in the Canola Research Hub's video gallery at canolaresearch.ca



Carcamo led a four-year farm-scale study, 'Management of lygus bugs and seedpod weevil in canola at the farm level', to determine how spraying for CSPW at early flower influenced the abundance of lygus bugs at early pod stage when lygus are most destructive. This is a common question on the minds of many growers, particularly in Southern Alberta.

Results of this study showed that spraying for weevils at canola's early flower stage reduced the abundance of lygus at the pod stage in most fields. Over all fields and years, this also resulted in an average yield increase of approximately 1.5 bushels per acre compared to unsprayed fields. However, yield responses were highly variable and some unsprayed strips had similar or higher yields than those sprayed.

Seeding date clearly influenced the abundance of CSPW and lygus, but in different ways. Fields planted in early April or the first two weeks of May, which is optimum for canola yield, had a higher risk of CSPW damage but reduced damage from lygus. Late

planting resulted in an increased risk of lygus damage, but CSPW was never going to be an issue in these fields.

Economic thresholds of both pests were determined with recommendations at 25-40 in ten sweeps for CSPW, and one per sweep for lygus bugs. Growers often ask if there is a joint threshold for CSPW and lygus bugs that can be assessed at the flowering stage. Carcamo recommends waiting until you've achieved a uniform field at approximately 20 per cent flower, and managing these insects separately. This avoids unnecessary crop spraying, reducing input costs and preventing harm to beneficial insects.

MITIGATING THE RISK OF BLACKLEG

Blackleg, the most widespread fungal disease of canola in Western Canada, has the potential to greatly reduce both canola yield and farmers' profitability. With the increasing risk of blackleg in many regions, growers need current information on products and practices available to reduce the impact of this disease on their farms and to help minimize the breakdown of blackleg resistance in canola varieties. Growers are asking if a fungicide treatment is useful for control of blackleg and, if so, when it should be applied.

In 1990, canola varieties were introduced with blackleg resistance that relied heavily on two avirulence genes (*AvrLm3* and *AvrLm1*). Since then, the pathogen population has adapted and



Credit: iStock.com/Frankhuang

we are seeing an increase in resistance breakdown. Earlier studies have shown foliar fungicide treatment having little yield benefit, especially on these resistant cultivars (Kutcher et al, 2013). However, those results were inconclusive due to a limited test area in Central Saskatchewan and the low levels of disease presence in the years of study.

The objective of this four-year project, led by Gary Peng, was to assess the benefit of all fungicide products registered in Canada for control of blackleg on canola through multi-year, multi-site trial testing under varied environmental conditions and with high levels of disease.

Field plots established at Vegreville, AB, Scott and Mel-fort, SK and Brandon and Carman, MB tested a susceptible canola variety to represent the worst-case scenario of black-leg-resistance breakdown, and diseased canola residues from previous years were left in the plot area for pathogen inoculum. Fungicides were applied at the 2-4 leaf stage individually, in a split application at the 2-4 leaf and prior to bolting, and as a single application just prior to bolting. Unsprayed plots were used as a non-treated control. A resistant (R) cultivar and moderately resistant (MR) cultivar were also treated at the 2-4 leaf stage as additional checks.

Over all site years, all but two of these treatments reduced blackleg and increased seed yield in the susceptible variety. However, MR and R canola varieties did not significantly benefit from any fungicide application, producing more seed than the susceptible variety with or without a fungicide treatment.

The majority of canola cultivars currently grown in Western Canada have R ratings for blackleg and in most fields disease levels rarely reach a point where fungicide will provide any benefit. However, in isolated fields severely damaged by factors such as early hail or insect feeding at the cotyledon stage, strobilurin fungicide may be applied at the 2-4 leaf stage to offset a negative impact on canola yield. This treatment can also be effective in fields where blackleg levels are trending higher despite following best practices of blackleg resistance stewardship (e.g. changing cultivars and extending canola rotation intervals).

Peng discourages the use of fungicides where blackleg levels are low as the limited fungicide chemistry available to farmers makes it easy for the pathogen to develop resistance. Fungicide should be used to mitigate blackleg only when necessary and economically advantageous.

You can find summaries and reports for these two research projects and other completed and in-progress studies on the Hub (canolaresearch.ca). View the full videos with Carcamo and Peng under the Media section, as well as interviews with Neil Harker on factors influencing canola emergence, Julie Soroka on flea beetles, Kelly Turkington on sclerotinia petal testing, Digvir Jayas on bag storage for canola and Rob Gulden on pod drop and seed shatter. 🌻

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

FUNGICIDE BENEFITS SUSCEPTIBLE CANOLA VARIETIES

Effect of fungicide treatment on blackleg and grain yield of canola with varying levels of disease resistance over 17 site-years between 2011 and 2014.

Variety	Treatment	Blackleg Incidence (%)	Blackleg Severity (0-5)	Grain Yield (bu.ac.)
Westar (S)	Non-treated control	54.1	1.5	26.4
	Headline (2-4 leaf)	42.8*	0.9*	30.4*
	Quadris (2-4 leaf)	41.8*	0.8*	30.2*
	Tilt (2-4 leaf)	57.0	1.5	27.1
	Quilt (2-4 leaf)	47.2	1.1*	30.5
	Headline (rosette)	49.4	1.3	28.1
	Tilt + Headline**	46.8*	1.2*	29.4*
	Headline** + Tilt	41.6*	0.9*	30.5*
43E01 (MR)	Non-treated control	53.2	1.3	37.3
	Headline (2-4 leaf)	40.3*	0.8*	37.5
45H29 (R)	Non-treated control	44.1	0.9	49.3
	Headline (2-4 leaf)	35.9*	0.6*	50.2

*Means are significantly different from the non-treated control of the same cultivar ($P < 0.05$, Dunnett's Test).

**Split applications at the 2-4 leaf and prior to bolting stages, respectively.



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 will continue to expand.



Fertility Planning

Use these steps to establish your farm's unique fertility plan for 2018. Once your plan is set, work with agronomic advisors and input suppliers to ensure you have the resources available when *you* need them.

BY WARREN WARD

1. REVIEW 2017 YIELD TARGETS

If you achieved your yield targets, that's great! What if you didn't? Or what if you had higher yields than planned? Some areas of the Prairies experienced drought in 2017, and as a result the fertilizer applied this spring was not utilized. Farmers will want to account for this additional fertility in the bank (the soil bank) when fertilizing for next year's crop. On the flip side, saturated fields may have experienced denitrification losses or even leaching of nutrients below the rooting zone. Other producers may have exceeded their yield expectations, but in doing so have drawn down soil fertility reserves and subsoil moisture levels to grow this crop, depleting these resources for future crops.

Do not let one year, which may have been an extreme anomaly, affect your long-term goals. If you missed your yield target, fertility rates may not have been the reason. Fertility is important, but it is only one piece of the agronomic puzzle.

2. SOIL SAMPLE THIS FALL

Soil testing is the only way to properly determine residual levels of nutrients. This is the best basis to decide the fertilizer rates needed to achieve next year's yield target. Keep in mind that each field may have utilized applied nutrients differently in a variable year such as 2017.

Sampling every field can be difficult to justify, but this may be a year where it makes sense to increase the proportion of fields sampled. It may also give you an indication where your fertilizer went in 2017 – if it didn't contribute to yield. Mobile nutrients may have leached, nitrogen may

have volatilized, and other nutrient levels may be higher than you expect. To get the best picture possible, sample fields intensively and preferably to depths of 24" (including separate samples for 0-6", 6-12", and 12-24"). The best time to fall soil sample is when biological activity slows down – or as close to freeze-up as possible. This will best represent the situation in the spring. November may still offer opportunities to take samples.

3. BALANCE YOUR FERTILITY PLAN

We often focus on nitrogen as the main driver of yield in our canola crops, but all the nitrogen in the world will not achieve your yield target if other nutrients are lacking. Canola will respond to fertilizer applications as long as the soil is unable to supply the adequate amount of required nutrients.

Keep in mind nutrients such as nitrogen, phosphorus, potassium and sulphur are required in much higher amounts than other nutrients. This is why we want to ensure that these nutrients are not limiting before looking at adding micronutrients, which are only required in very small (micro) amounts. Plan to fertilize based on your soil test results with the expectation of an adequate return on investment for your fertilizer expenditures.

4. EVALUATE YOUR PURCHASING STRATEGY AND APPLICATION TIMING

With fall soil test results in hand, you can tailor fertilizer purchasing decisions, make fall applications or take time through the winter to plan for improved logistics and profitability for next year.

Logistics of fertilizer applications often overrule proper agronomic practices. In these situations, you may be sacrificing more than you are gaining without realizing it. Always consider the **4R** approach: the **right nutrient source**, at the **right rate**, in the **right place**, at the **right time**. If you have to make trade-offs, strive to balance efficiencies with best management practices. For instance, if your best application time doesn't match that of the crop, consider what product would be best suited to minimize the effects. For more background information, reference the Fertility Management section at canolaencyclopedia.ca.

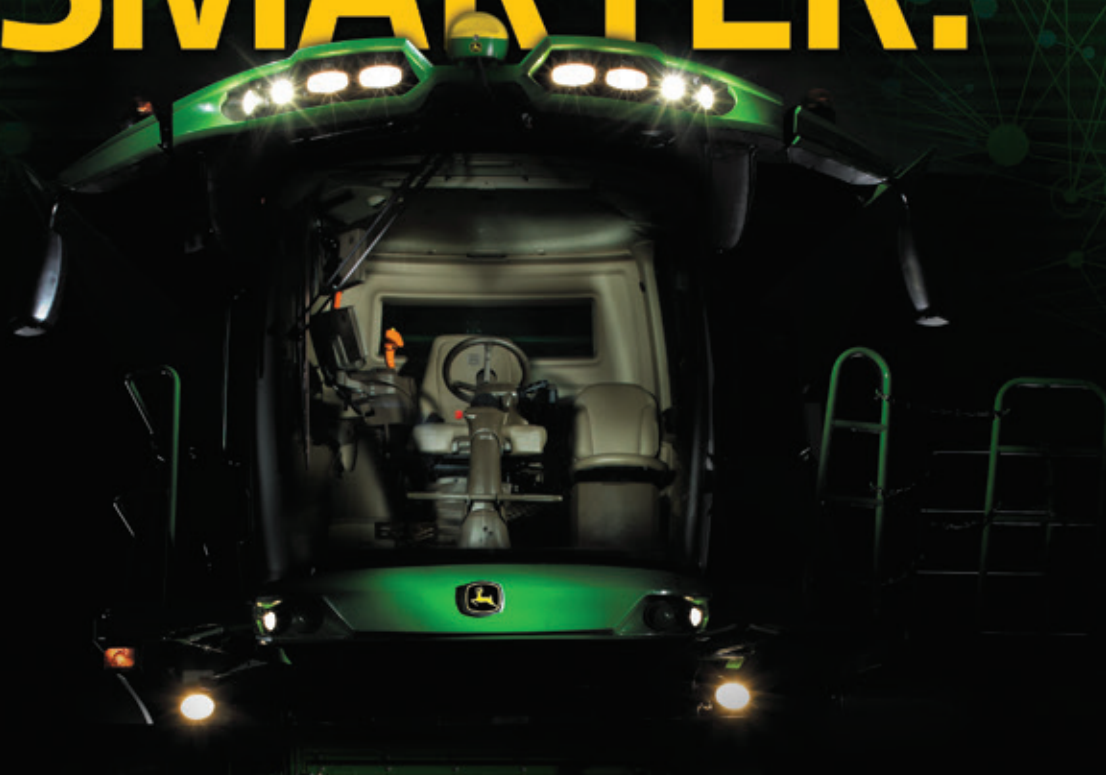
5. MAKE CHANGES TO IMPROVE YOUR FERTILITY PLAN

Changes could be equipment upgrades, maintenance to optimize equipment performance, evaluation of new products or maybe an aggressive yield target. Start small and evaluate the changes you want to implement before adopting the change on the entire farm. Conduct on-farm trials if you wish to implement a new product or higher fertility rate, and consult with your local Canola Council of Canada agronomist for tips and trial protocols. To find your agronomist, go to canolawatch.org/contact-us/.

Remember, the option that fits *your* plan the best is not necessarily the option that fits best for your retailer or neighbour. Planning now with your agronomic advisors and input suppliers will ensure you have the resources available when *you* need them. ✖

—Warren Ward is the Canola Council of Canada agronomy specialist for Southeast Saskatchewan. Email him at wardw@canolacouncil.org.

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And to get the most grain out of every acre with the best quality, add the Combine Advisor™ package. With it, the combine is constantly making automated adjustments, delivering exactly what you asked it to. And you'll see the results, too. The ActiveVision™ Cameras show you free grain vs. foreign material, right on your display.

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CELEBRATING
150 YEARS



JOHN DEERE

JohnDeere.ca/Combines

Canadian canola production is very competitive in an international comparison. Since canola acreage has gone up significantly in recent years, it can be assumed that the highest seed costs in the world have not hurt the overall profitability of the crop.

ARE CANADIAN CANOLA GROWERS THE MOST PROFITABLE?

BY JOERG ZIMMERMANN AND YELTO ZIMMER

Are Canadian canola farmers as profitable as canola and rapeseed farmers in Australia, Eastern Europe and Western Europe? An initiative from *agri benchmark* can tell us. The not-for profit organization jointly managed by the Johann Heinrich von Thuenen Institute in Germany and Global Networks compares practices and results for so-called “typical farms” in about 50 countries. (See the sidebar for more on the organization.)

The core strength of *agri benchmark* is its grassroots connection to agriculture in partner countries through an extensive network of locally anchored scientists, extension specialists, consultants and of course farmers who provide first-hand insights about the farming situation and about strategic developments in the region.

In Canada, *agri benchmark* maintains six typical farms – two in Ontario, two in Manitoba and two in Saskatchewan. With a recently established partnership between Farm Management Canada and *agri benchmark*, this will extend to Alberta and Quebec.

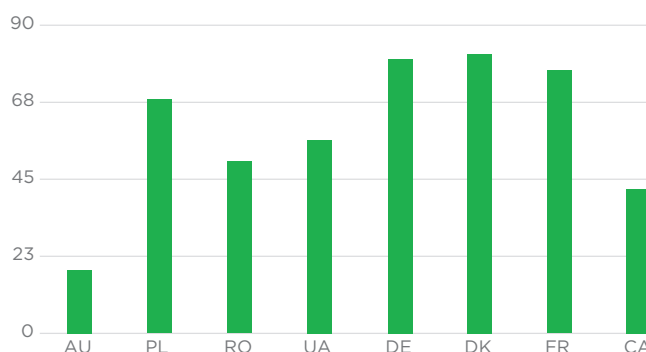
For this analysis, typical canola/rapeseed growing farms from Canada, Poland, Romania, Ukraine, Germany, Denmark, France and Australia were chosen. While all the farms in Eastern Europe and Western Europe grow winter rapeseed, the Australian and Canadian farms grow spring canola.

Since the farm data displayed in the subsequent graphs comprise a selection of individual farms, the range of data is indicated. Even though we use country codes, we do not claim that the data is representative for the entire country, but rather to represent data from typical farms in the *agri benchmark* database.

OUTCOMES

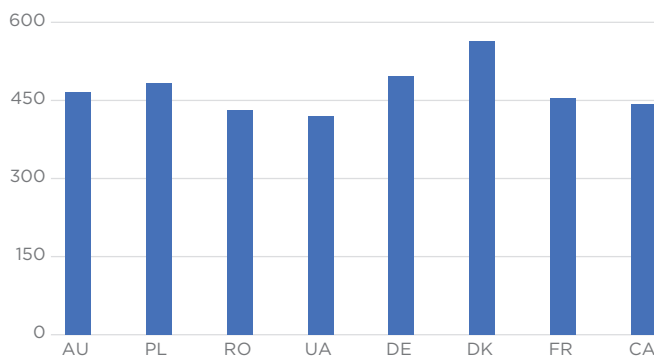
Yield. Canadian canola yields are below most of the farms in the sample. Australian farms also had very low yields, due to low precipitation. In Europe, long-time precipitation averages range from 550 to 750 mm per year, and they grow long-season winter varieties. These factors help to explain the much higher yields in Europe than in Canada and Australia. Average yields of the farms are shown in Figure 1.

Figure 1. Average rapeseed yields, 2012-2015, in bu./ac.



Farmgate canola price. Canadian farms, with an average farmgate price of US\$442 per tonne, were not able to realize prices quite as high as the farms in other countries. Farmgate prices were US\$560 in Denmark, for example. However, Eastern European farms in Romania and Ukraine realized even lower prices, at US\$431 and US\$418 respectively. Figure 2 shows the average farmgate prices of the *agri benchmark* typical farms.

Figure 2. Average rapeseed prices, 2012-2015, in US\$ per tonne.





Credit: iStock.com/oooyoo

AU - Australia
PL - Poland
RO - Romania
UA - Ukraine
DE - Germany
DK - Denmark
FR - France
CA - Canada

Figure 3: Average seed and herbicide costs, 2012-2015, in US\$ per acre.

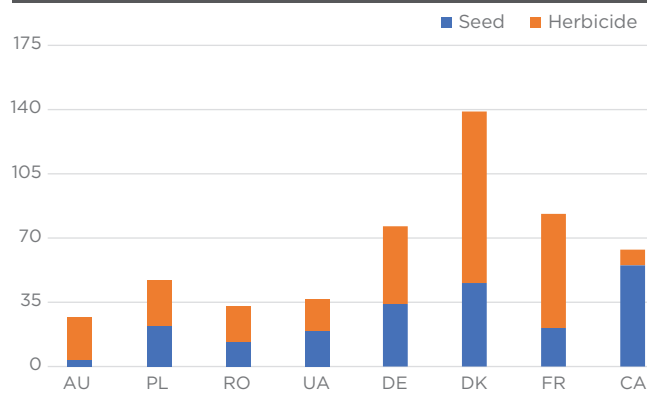


Figure 4: Average fertilizer efficiency, 2012-2015, in kg nutrient per tonne of product.

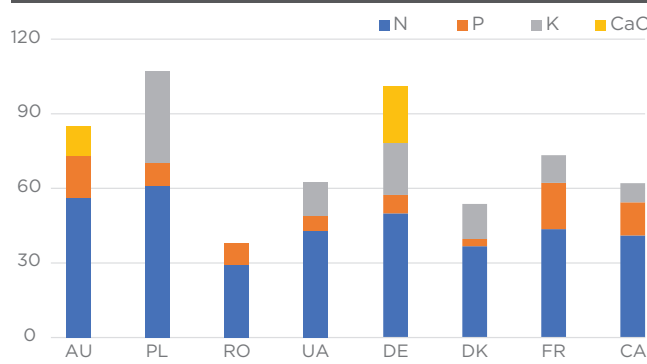


Figure 5: Direct cost structure, 2012-2015, per cent of total direct cost.

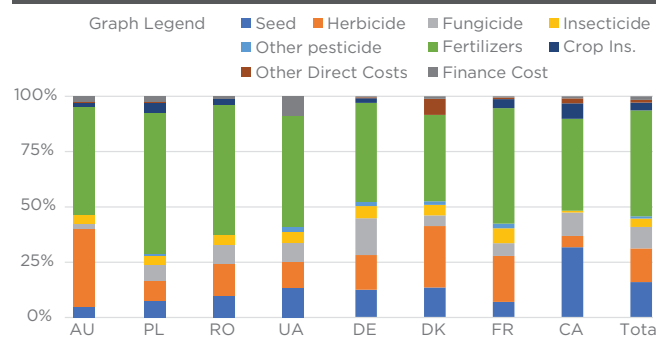
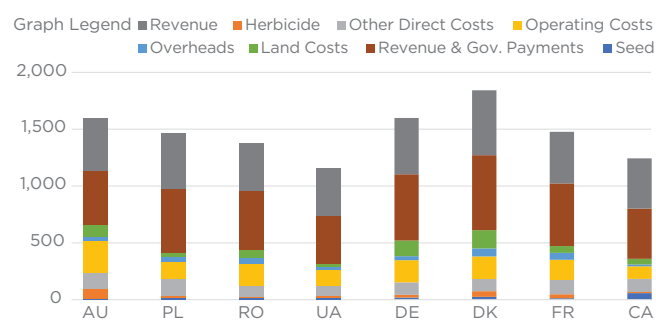


Figure 6: Revenues, government payments and total cost, 2012-2015, US\$ per tonne.



Figures Source: agri benchmark, 2017

The price discount in Canada is most likely the result of fewer end users in close proximity of the farms. Therefore Canadian canola requires increased transport costs to reach export markets, which comes off the farm gate price.

Seed and herbicide costs. Canadian farmers are clearly paying more for seeds than the rest of the world, but considerably less for herbicides. (See Figure 3.) This is likely due in part to the genetically-engineered (GE) herbicide-resistance systems that account for most of the market. In Canada, 95 per cent of canola is GE herbicide resistant. In Australia, the share is at around 15 per cent, but growing rapidly. Due to consumer and subsequent political concerns, GE rapeseed is not in use in European countries.

The seed-to-herbicide ratio in the Canadian farms is about 6.2:1, while it is closer to 1:1 in the Eastern European farms, 1:2 in the Western European farms and 1:7 in Australia. For the Canadian farms, a clear shift in the structure of direct cost from herbicides to seeds can be observed.

Fertilizer. A deeper look at the fertilizer efficiency shows that the Canadian farms are efficiently converting nutrients into final commodity (see Figure 4). Since the average nitrogen withdrawal per tonne of canola is about 35 kg of Nitrogen (N), Figure 4 allows the suggestion that the Romanian farm is probably depleting the soil over the long run.

Operating and land costs. All the above so far suggests that Canadian farms are not competitive – lower yields, lower prices and higher direct costs. Figure 6 shows the total costs in relation to the revenues, which include government payments. Although the Canadian farms have high direct costs, they make up this disadvantage with lower operating and land costs and show good profitability – overall slightly lower than the lowest-cost producers in Ukraine. With higher operating and land costs, producers in the European Union would break even or produce at a loss if it wasn't for government payments. Observed farms in Australia produced at a loss, mainly due to very low yields.

CONCLUSION

Despite significantly higher seed costs, Canadian canola production is very competitive in an international comparison. One reason is much lower herbicide cost. And since the canola acreage has gone up significantly in recent years, it can be assumed that the highest seed costs in the world have not hurt the overall profitability of the crop. The economic and agronomic benefits from having access to herbicide-resistant varieties likely resulted in the ability of growers to increase the share of canola in their rotations and therefore increase overall profitability of the rotations.

However, not everything should be attributed to GE herbicide-resistant (HR) technology. The fact that hybrid varieties (higher yields, drought resistant, etc.) were introduced in combination with the HR technology may have also affected profitability and the increase in canola acres.

As stated above, the Canadian canola producers have comparably high direct costs per tonne, but very low operating costs overcompensate for this. The area to improve in is, therefore, the direct costs. Besides fertilizer, which cannot be reduced without sacrificing yield, seed is the second biggest direct cost position. Focusing on reducing seed costs without agronomic sacrifice by employing more precise seeding technologies allows Canadian producers to reduce their direct costs per tonne of canola even further and therefore become even more competitive.

FURTHER RESEARCH

Since the vast majority of canola in Canada is GE, it is hard to find relevant data to isolate the effects of the technology within Canada. However, the adoption of GE canola in Australia is still taking place and more data should be available to



The economic and agronomic benefits from having access to herbicide-resistant varieties likely resulted in the ability of growers to increase the share of canola in their rotations and therefore increase overall profitability of the rotations.



compare conventional and HR production systems. The hypothesis that HR canola allows for a higher share in the rotations due to easier weed management could be tested further.

Greenhouse gas emissions (GHG) from crop production is becoming an increasingly important issue for decision makers around the world. Therefore, analyzing the efficiency of nitrogen use (as the single most important source of GHG emissions in canola production) should be of interest to the Canadian canola industry. ✿

—Joerg Zimmermann and Yelto Zimmer are with agri benchmark. Zimmermann, who is based in Manitoba, coordinates the Canadian agri benchmark network. He encourages readers to send him potential research topics that might be of interest and relevance for the agricultural sector in Canada. His email is joz@globalagadvisors.com.



What is agri benchmark?

agri benchmark is a not-for-profit organization jointly managed by the Johann Heinrich von Thünen Institute, an institution of the German Ministry of Food and Agriculture, and Global Networks gGmbH.

The key idea of *agri benchmark* is to combine farm production system data with local specific expertise of producers and advisors on a global scale. Data collection is based on an internationally-recognized and harmonized method, the so-called “typical farms” which are basically case studies, currently performed in about 50 countries covering production hot spots for the major cash crops. Physical data for all major farming processes such as equipment required, amount of seed, fertilizers and chemicals used and yields achieved are recorded together with economic data such as input and output prices. Respective farm

data is validated in so-called “focus groups” which consist of regional advisors and growers who run farms similar to the stylized typical farm. Combined with economic data, this approach allows for an “apples-to-apples” comparison across borders. The core strength of *agri benchmark* is its grassroots connection to agriculture in partner countries through an extensive network of locally anchored scientists, extension specialists, consultants and, of course, farmers who provide first-hand insights about the farming situation and about strategic developments in the region. For further information please visit the *agri benchmark* website agribenchmark.org.

In Canada, *agri benchmark* has established and is maintaining six typical farms – two in Ontario, two in Manitoba and two in Saskatchewan. Within a recently established partnership between Farm Management Canada and *agri benchmark* the number of typical farms in Canada is currently

extended to Alberta and Quebec. Additional typical farms in other major cash-crop regions will be established in future.

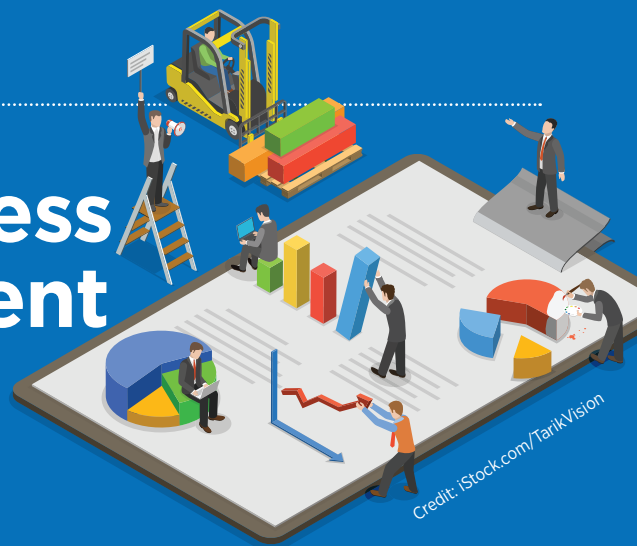
With the increased footprint of *agri benchmark* in Canada, we would like to encourage the readers of this article to reach out to us with potential research topics that might be of interest and relevance for the agricultural sector in Canada. Please contact the coordinator of the Canadian *agri benchmark* network, Joerg Zimmermann (joz@globalagadvisors.com) for more information.



7 strategies for success in today's environment

One strategy is to identify those jobs or results that have to go well to assure the success of the operation. Look for levers that have the biggest impact on your bottom line and pull them.

BY JAY WHETTER



When commodity prices rise, land and input costs often follow. But when commodity prices fall, as market cycles predict they always will, land and input costs don't always come down as far or as fast. This can create a profitability squeeze. At Crop Connect in Winnipeg earlier this year, Brent Gloy, an economist with Agricultural Economic Insights, provided several strategic steps to work through this situation.

1. SET PROFIT AND CASH-FLOW TARGETS

One of the first things to do is to set realistic profit and cash-flow targets, Gloy argues. "Establishing these targets helps you think through different crop rotations as well as price levels needed to achieve your financial goals," he says. He also encourages candid and open discussion about targets and goals with spouses and partners.

2. DETERMINE WHAT HAS TO GO WELL

Everyone has a limited amount of time, so direct your attention to the things that matter the most, Gloy says. Start by asking yourself a few questions: What drives yield on your operation? What cost categories got away on you over the past few years? What budget categories deserve the most attention? Look over the financials to determine which factors are most important to meeting the profit and cash-flow targets set in Step 1. Basically, look for those levers that have the biggest impact on your bottom line and pull them.

3. SEIZE MARKETING OPPORTUNITIES

"Don't be lulled to sleep by low or slow-moving prices," Gloy says. Use price fluctuations throughout the year to your advantage. Discuss a plan with your partners and make sure everyone understands each other's comfort level with different outcomes. For example, is a price that covers variable costs good enough if the market outlook suggests a price that covers variable *and* fixed costs is not likely in the near term? Or does the operation take advantage of on-farm storage and hold on? How does the plan meet cash-flow needs?

4. START WORKING ON FIXED-COST STRUCTURE

Fixed costs such as land and machinery represent 50 to 60 per cent of the total costs on many grain farms. "As grain prices come down, farmers need to have fixed costs under control," Gloy says. Spreading costs over more bushels is one solution but requires higher yields without an equal increase in costs of production. Find ways to reduce

machinery or land costs per bushel or per acre. "This is not easy, but start thinking about how different alternatives might lower your fixed costs," he says. Could you share equipment with a neighbour? Does your crop rotation increase machinery costs? Can custom work reduce machinery costs per acre?

5. REVISIT YOUR TIME MANAGEMENT

What jobs contribute the most to farm profitability? Gloy suggest you allocate more time to those that have the largest impact. "If two jobs need to be done at once, which one should you do and which could be assigned to someone else – perhaps even a custom operator?" Gloy asks. He recommends you create a "stop doing" list for work-related jobs or activities that increase time stress but don't add much to profitability.

6. UNDERSTAND HOW CURRENCY IMPACTS THE BUSINESS

The Canadian dollar's position relative to the U.S. dollar and currencies in other major markets and competing countries can influence the local commodity prices, Canadian export competitiveness and the cost of inputs. A low Canadian dollar can make Canadian exports more attractive, but it can also increase the cost of machinery and other inputs imported from the U.S. and elsewhere. Currency values can fluctuate widely and can change quickly. Keep an eye on these changes and understand how they impact your profitability, Gloy says.

7. EVALUATE OPPORTUNITIES CAREFULLY

Opportunities will come along to buy or rent land, take on a good new employee or invest off the farm. Not all opportunities are good and not all are bad. Gloy asks, "Do you have a systematic approach to evaluate different opportunities?" To prepare to act on good opportunities, he recommends you identify the top three investment priorities that align with the farm's strategic plan and set a target price that meets your financial goals. Another valuable exercise is to set a systematic approach for crop-input decisions. "Take time in the off season to work through in-crop scenarios, prepping yourself to take action when particular scenarios unfold," Gloy says. "It helps to talk through ideas with people who will provide honest feedback." 🌻

Find out more about Brent Gloy's company at ageconomists.com.

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



Challenges to success

In response to this issue's article, "7 strategies for success in today's environment," we asked four farmers about their biggest challenges to success and their strategies to overcome them.

BY JAY WHETTER



JONATHON DEAR
HEPBURN, SASKATCHEWAN

Jonathon Dear says rising levels of blackleg and now clubroot in Saskatchewan just add more justification for his four-year and sometimes five-year rotations.

"We've been working toward that goal for about five years now and on fields with

this longer rotation, it does seem to be proving beneficial for disease prevention," he says.

Dear is a pedigreed seed grower, so clean fields and rotations are part of the business. He grows wheat, oats, peas and now soybeans for seed. He also grows lentils and canola.

Dear does his own scouting. He attends events such as canolaPA-LOOZA to help train his eye. "I feel like I have a pretty good handle on what's going on," he says. The fact he takes time to do his own scouting is a clear indicator of its importance to him, given that another challenge in agriculture, he says, is finding good labour.

Dear employs a few smaller farmers from the area who split time between his farm and their own. He also has trainees from Europe cycling through on a regular basis. "We have developed a pretty good network with the trainees program," he says.

"But it is really hard to find someone who wants to work full time on a farm who isn't already farming themselves," he says. "As farms get bigger, they will need more of these full-time staff and the labour issue will just get more challenging."



GORDON MOELLENBECK
ENGLEFELD, SASKATCHEWAN

One challenge for Gordon Moellenbeck is to maintain profitability in the face of advanced threats from weeds and diseases – clubroot, for example. "We have been pushing canola rotations, but we don't want to lose canola," he says. With crops such as

soybeans (which Moellenbeck has been growing for three years,) and grazing corn, he has been able to go back to a four-year rotation.

This is good news for both weeds and diseases. "With soybeans, we can apply glyphosate in-crop at up to one litre per application twice per season. This really cleans up a lot of land," he says.

And with significant cases of clubroot found in Saskatchewan this year, it means Saskatchewan canola growers have to be diligent about biosecurity, he says. "With something as simple as a custom harvester, we now have to ask where he and his equipment have travelled."

Livestock producers have figured out the importance of farm biosecurity to keep diseases out of herds and flocks, he says. Crop producers now need to do the same. “We need to get into our heads that preventing the spread of clubroot is just something we do, like putting on a welding helmet and protective clothing when welding.”

Another challenge is marketing. “This has the biggest impact on profitability,” he



“We need to get into our heads that preventing the spread of clubroot is just something we do, like putting on a welding helmet and protective clothing when welding.”

—Gordon Moellenbeck

says. “It starts with knowing what you have in the bin. How much is No.1 or No.3? What is the dockage? It’s hard to market when you don’t really know what you’re selling.”

A couple years ago, the Moellenbecks had canola of all different grades due to timing issues and variable crop stages within fields. “We had fields range from sample to No.2 and a wide range in between,” he says. “We were up front with what we had and shopped it all around. We were able to sell it all at one grade for a good price.”

“We have so much money to be gained or not gained by selling too soon, not knowing what you have in the bin, and not being willing to shop it around a little bit,” he says. “If you’re not making money off your grain, someone else will be.”



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FARMER PANEL



**MARLENE AND GRAHAM CASKEY
OYEN, ALBERTA**

Distance to market is a significant business challenge for Marlene and Graham Caskey, who farm just west of the Alberta-Saskatchewan border 300 km from the nearest airport. This distance adds to the cost of transportation, limits the immediate availability of parts and can make it difficult to attract qualified farm labour.

The closest elevator to the Caskey farm is 16 km away. It sits at the end of the only rail line in the region and has no immediate competition. This has led the Caskeys to look farther afield to sell their grain. “We now market to six different grain companies, including two in Saskatchewan, and most of them are two hours and two rivers away,” Marlene says.

The rivers are nothing minor. Deep valleys, narrow bridges and big trucks can make hauling grain over rivers a significant challenge.

Crossing the provincial border is another issue. “We need inter-provincial running rights, which we chose not to pursue,” Graham says. “So we hire custom haulers to deliver our grain.”

The Caskeys have a good local equipment dealer, but not all parts are on hand. For that reason, getting machinery going again can take longer in more remote areas.

“When delivery, parts and other services vacate the immediate area, competition goes down, which means higher input costs and lower selling prices,” Marlene says.

Then there’s the issue of qualified help. “Labour is probably the biggest challenge for a modern farm. The ideal person will have a Class 1 driver’s licence, GPS and other tech skills and mechanical aptitude,” she says. “They also need to accept they’ll be working hard for short periods throughout the year, dictated by weather and crop timing.”

The remote location (no movie theatre, limited restaurants, few peers) makes finding and keeping qualified staff that much harder.

But the Caskeys agree, farmers simply have to figure out how to stay profitable amid these challenges because the challenges are not going away. The largest farms don’t exist beside cities anymore, Marlene says, but these largest farms need the most labour, haul the longest distances and run the biggest parts-hungry equipment fleets.

“Labour is probably the biggest challenge for a modern farm. The ideal person will have a Class 1 driver’s licence, GPS and other tech skills and mechanical aptitude. They also need to accept they’ll be working hard for short periods throughout the year, dictated by weather and crop timing.”

—Marlene Caskey



**ANDREAS AND ROBYN SCHEURER
DUGALD, MANITOBA**

The biggest hurdles Andreas Scheurer faces are drainage (most years), the big jump in equipment and land costs, and now the proposed tax changes for small businesses in Canada.

“Our area east of Winnipeg, like many other municipalities in Manitoba, has almost completely abandoned municipal ditch maintenance and improvements,” Scheurer says. He’d like to see his municipality use the Red River Floodway for a drainage outlet. “The Floodway is only a few miles away and sits empty during the growing season when we could use it most.”

A bigger challenge is cost of production. “These have sky-rocketed in recent years with equipment and land values going through the roof,” he says. “We were fortunate to jump on some land opportunities before prices got out of control. We are starting to look into ways of making our land more productive, like variable-rate fertilizer and possibly tile drainage, versus buying more and more land.”

On top of that, tax issues are mounting. Scheurer says their land taxes doubled last year while residential taxes in some areas actually dropped. And now the federal Liberal government has proposed tax reforms that will directly affect farms.

“This is a major problem for me. Our farm is in the succession process and these changes may make it near impossible to transition the farm to the next generation without crippling the operation,” he says. “We can’t just increase the amount of crop we produce to offset these costs. To do so requires massive capital investment in land and equipment which we would no longer have the cash flow to pay for. It threatens the idea of family farms.” ☘

“We are starting to look into ways of making our land more productive, like variable-rate fertilizer and possibly tile drainage, versus buying more and more land.”

—Andreas Scheurer

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



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