CANOLA digest

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MARCH 2014 OUTLOOK

Market outlook • Panel on profitability • Scouting from the sky

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Canada has an opportunity to supply the world with 26 million tonnes of canola by 2025, based on demand trends for healthy oil. The Canola Council of Canada has a new strategic plan to seize this opportunity. Page 6.

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THE EDITOR'S DESK

Jay Whetter

YOUR GOAL

Goals have to be bold. They must present a good chance of achievement, but they must also have a risk of failure. A bold goal creates excitement and motivation for the business. Bruce Croxon from CBC's Dragon's Den spoke at CropSphere in Saskatoon in January. He said that, of all the entrepreneurs he has observed, the most successful ones set goals.

The Canola Council of Canada's goal to produce and market 26 million tonnes of canola sustainably by 2025 has generated a lot of buzz, and inspired important conversations.

Here's the bottom line: Both global demand for vegetable oil and global interest in healthier oils are increasing. Based on these two trends, Canada will have an opportunity to supply 26 million tonnes of canola into the global market by 2025. This is one of the biggest opportunities in Canadian agriculture.

The CCC's 2025 strategic plan embraces this opportunity. We know there are challenges. The goal targets an average canola yield of 52 bu./ac., up from 40 bu./ac. in 2013 and around 34 bu./ac. for the past five years. That is huge. The goal is a signal that grain transportation logistics need to improve beyond the challenges of today. The hope is that we – innovative, intelligent and generally positive Canadians – can spend the next 11 years finding solutions.

The best approach is to make this big bold goal your own. We do not want to prescribe a rotation for you. But we do want to help you manage your choices with the best information available. If, for example, a rotation of canola, wheat, peas and barley is your solution to sustainability and long-term profitability, then by all means keep it rolling. But set a goal to look for effective techniques to increase production and return on inputs investment. Those solutions are out there, and the CCC Crop Production and Innovation team will spend the next decade digging them up for you.

If your area simply cannot produce 52 bu./ac. canola, adjust the goal to suit your conditions. Perhaps aim for a one bu./ac. increase – with a corresponding increase in profit margin – each year for the next 10 years. If you farm in a strong canola growing region, your goal might be to produce 70 or 80 bu./ac. at a higher profit per bushel.

Perhaps you (or your son or daughter) are a whiz at problem-solving and can innovate ways to achieve a steady and predictable flow of canola seed, oil and meal to port. Perhaps your goal is to get involved in local boards and work toward advancement in research, market development and agronomy.

You are a Canadian canola grower, working in an industry that is built on Canadian innovation and vision. The strategic plan to produce and deliver 26 million tonnes of canola seed, meal and oil by 2025 is an extension of that vision. How will you take that goal and make it your own?

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By Patti Miller

CANADIAN CANOLA... KEEP IT COMING

After working with the Canola Council of Canada Board of Directors to establish new targets for the industry, CCC President Patti Miller reflects on the new plan and why it is necessary at this point in time.

What an incredible time to be part of the canola industry. I joined the Canola Council of Canada (CCC) about two years ago, at a time when the industry was beginning to look at new goals that would serve the entire value chain – growers, seed developers, processors and exporters.

That was a year when we really saw the value of setting goals as a value chain and having a plan in place to achieve them. Five years earlier, the 2015 plan had been introduced, and while it was greeted with excitement, it was also met with some scepticism. But those targets spurred on investment in research, processing capacity and infrastructure, in market development and market access. We did our homework and we dreamed big. And we reached our goals.

By 2011, we had surpassed our target of selling 15 million tonnes of canola by 2015, and we came within a hair's breadth of producing a 15 million tonne crop. In 2013, we surged past our production target. As the Board of Directors prepared to set new targets, they began by building on what had worked well for the industry in the past. Then they looked to the possibilities for the future, focusing on what we are learning from science and using the best available insights into what the world will need in the years ahead.

It was clear that demand for healthy oil around the world would keep growing, and would grow significantly. An independent report commissioned by the CCC predicted that world demand for vegetable oil will grow from 150 million tonnes in 2015 to 250 million by 2025. The Food and Agriculture Organization of the United Nations also predicted major growth in the world population's need for protein.

So the question for the Board became: How do we make sure our industry will secure its rightful share of that opportunity? How do we ensure our customers understand canola's true worth so the entire value chain remains profitable?

The answer is "Keep it Coming 2025" – the canola industry's plan to generate more profit for the farmer from every acre grown, while building canola's value in key markets.

Terry Youzwa, a Saskatchewan grower and chairman of the CCC Board of Directors, put it best when he launched "Keep it Coming" at a January event in Winnipeg. "World markets are telling us they want the products we can provide. They're telling us to keep it coming. If we don't rise to the occasion, our competitors will."

PRIORITY 1: SUSTAINABLE AND RELIABLE SUPPLY

The plan sets out three priorities. The first is sustainable and reliable supply to meet growing world demand. I stress the word sustainable. Canadian canola has an excellent reputation for meeting sustainability standards in important markets like Europe and the U.S., and that's an advantage we want to maintain. So our first priority is to sustainably and profitably increase annual canola production to meet global demand for 26 million tonnes of Canadian canola

Targets	2011 & 2012 avg.	2013	2025
Exported Seed	8.11 MMT	8.5 MMT (2012-13 Crop Year)	12 MMT
Domestic Processing	6.87 MMT	7.5 MMT (2012-13 Crop Year)	14 MMT
Acres	20.2 Million	19.8 Million	22 Million
Yield	31.2 bu./ac.	40 bu./ac.	52 bu./ac.
Production	14.24 MMT	18 MMT	26 MMT
Oil Quality	*13% High Oleic and Specialty Oil Acres 7% Saturated Fat	*15.5% High Oleic and Specialty Oil Acres 7% Saturated Fat	High oleic and specialty oil attracts 1/3 of canola acres Global leadership position in oil saturated fat content Maintain global competitiveness in oil content
Meal Quality			Increase protein availability by target species
Trade Environment			Tariff free and non-tariff barrier free access to top markets

*Estimated

This is not about adding substantially more acres of canola. It's about using science and innovation to get more from the acres we sow.

by increasing yield to an average of 52 bushels per acre.

This is not about adding substantially more acres of canola. It's about using science and innovation to get more from the acres we sow. When the CCC Board of Directors established this priority they were recognizing that canola growers are some of the earliest adopters of the latest agronomy. They understood that our industry has always pursued the best practices to support early crop establishment, fertility management and pest management.

Today the average canola yield is 40 bushels per acre, so we are seeking an additional 12 bushels over about 12 years. We know canola has the genetic potential to achieve that yield – in fact many growers are already there. What the CCC intends to do is harness the full capacity of industry agronomists, advisors and scientists so that all growers can make the most of genetic potential and advances in agronomics. We are planning an ambitious long-term program to target growers with the right research and information at the right time in order to respond to each producer's unique circumstances.

And we don't want to simply produce more canola. We also want to continually improve the quality. We will focus on the quality characteristics of seed, oil and meal to meet new and existing customer requirements.

There is some real potential in this area. We can see it in the growing demand for specialty and high oleic oil, for example.

PRIORITY 2: DIFFERENTIATING VALUE

The second priority is to meet global demand for 26 million tonnes by differentiating and demonstrating the quality characteristics of seed, oil and meal to meet new and existing customer requirements at a competitive price. What that means is that the CCC and industry will take a more targeted approach based on solid analysis of what we need to do in each market, or potential market, to meet specific customer needs.

The demand is clearly there. Our analysis shows that the growing middle class in some key markets is looking for healthy solutions and will see the value of canola oil. That spells opportunity.

World demand for protein is also growing, and science is telling us that canola's protein profile is a winner in animal feed mixes. The global dairy and aquaculture industries are among the many markets that already recognize the value of canola meal, and there are more markets to come.

PRIORITY 3: STABLE AND OPEN TRADE

Gaining and maintaining access to markets takes work. And that brings us to the third priority. We will work to help create a competitive, stable and open trade environment that consistently allows the industry to attain the maximum value for canola and its products free of tariff and non-tariff trade barriers.

The good news is that we see a global willingness to resolve market access issues. Our approach here is to build on the foundation the CCC has established over several years. Through our constant outreach efforts, the government of Canada understands our industry and is a strong supporter. Canola levy dollars helped to leverage millions in federal investments to support our market access efforts. For example, since China's border closed to canola seed over blackleg concerns, we have been able to expand our access into China.

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CANOLA MARKET OUTLOOK

By Marlene Boersch

Continued growth in global vegetable oil demand is overshadowed this year and likely next year by faster growth in global oilseed supply. This weighs on canola and all oilseed price outlooks for 2014-15.

Canada had excellent crops this year, reaping a record 96.5 million tonnes of grains, oilseeds and special crops. The total tonnage produced this year is an impressive 26 percent larger than last year's crop of 76.7 million tonnes. With canola production at around 18 million tonnes, it was one of the big agriculture success stories this year, smashing the Canola Council of Canada's production target of 15 million tonnes by 2015.

While the 2013 canola production numbers seem overwhelming, this does not necessarily mean that canola prices must be low. Canola prices primarily follow soybean and soybean component values, which in turn are heavily determined by world soybean balance sheets and the resulting vegetable oil prices. Simply stated, trade in soybeans represents about 86 percent of total oilseed trade, while trade in canola/rapeseed represents about 10 percent of total oilseed trade. Hence soybean crops count more in pricing.

This year, canola has been favourably priced all crop year relative to soybeans, and as a result enjoys excellent demand in export and domestic crush markets. However, soybean values have been falling. Additionally, Canadian domestic grower prices are being severely affected by a transportation and handling system that is unable to deal effectively with the size of the overall crop. This allows Canadian exporters and crushers to increase basis levels and make high margins to the extent they have transportation available to them.

LOTS OF OILSEEDS

Examining the underlying soybean oil prices in 2013 gives the following general background on canola export prices: First, vegetable oil prices this season have been influenced by an overall improvement in major world oilseed production by 32 million tonnes (seven percent) from 474 million tonnes in 2011-12 to 506 million in 2013-14, according to United States Department of Agriculture (USDA) numbers. Carry-out stocks are forecast at 85 million tonnes in 2013-14, up from 70 million in 2011-12.

Second, commodity futures have reflected these changes, and under the pressure of a good U.S. soybean harvest, Chicago soybean oil futures fell by 21 percent over the fall period. Specifically, the relative value of oil in the U.S. soybean price has fallen from 48 percent in spring 2012 to only 27 percent today, with the relative value of meal in the U.S. soybean price accounting for the balance. This means we are crushing for meal not for oil. In this environment, canola, with its higher oil content, will struggle to provide value in comparison to beans.

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The 2014 soybean harvest in South America is expected to boost oilseed availability from South America. Brazil's agriculture minister noted in early January that "continued good weather could push crop up over 95 million tonnes." We expect both Brazil and Argentina to produce record 2013-14 soybean crops, given that a soybean/corn price ratio approaching 4:1 in some locations encourages record soybean acreage.

Looking forward to 2014-15, the expected 25% increase in carryout stocks mentioned above is important. The larger supply of oilseeds achieved in 2013-14 will increase the vegetable oil stock-use ratio to 16 percent, up from 13 percent, which is a significant change. It means the global vegetable market is relatively well supplied, although U.S. stocks are still at multi-year lows.

The next issue for the market is acreage projections for 2014-15. Current prices are signaling U.S. farmers to plant record soybean acres this spring. An initial projection puts U.S. soybean acreage at a record-high 80 million acres, up 4.6 percent over 2013-14.

POSITIVES ON THE DEMAND SIDE

Even with increased global oilseed supplies, we see some positives on the demand side of the equation.

Overall vegetable oil demand continues to increase. China has been "the" important demand changer for oilseed crops over the past seven years. The country imported 63.4 million tonnes of soybeans in 2013, another increase of 8.6 percent over the previous year. China now dominates the expanding import market, while the proportional role of traditional importers such as the EU, Mexico and Japan is being reduced. China currently accounts for about 60 percent of globally traded soybeans.

Some traders contend that the pace of growth is starting to slow somewhat, but there is still a lot of expansion activity for oilseed crushing and animal feed requirements. The demand forecast for Chinese soybean imports for 2014 is at 69 million tonnes, an increase of 8.8 percent over last year.

Biodiesel demand is expected to improve from 2013. While demand in the EU could fall, Indonesia has recently introduced a B10 mandate (10 percent biodiesel in diesel gasoline) and Malaysia is contemplating a B7 program. We note that these mandates may not get actualized under current market conditions, but if realized, could use up an additional three million tonnes of vegetable oil in their programs.

U.S. biodiesel production is also growing, albeit from a fairly small base. We expect this trend to continue. The key to biodiesel demand going forward is to move beyond mandated inclusion rates and into non-mandated demand, which is a function of cheaper agriculture commodities against high-priced crude.

Palm oil discount to soybean oil is expected to remain tight. This means that palm oil will lose demand against other affordable oils that may provide health and other advantages over palm.

PRICE RISK FACTORS FOR 2014-15

Even with increased demand, supply still exceeded demand in 2013-14, setting up two major price risk factors for 2014-15. Assuming normal growing conditions

Major Oilseeds: World Supply and Distribution (Commodity View)

Production (million tonnes)					
Crop	2009-10	2010-11	2011-12	2012-13	2013-14 (to Jan)
Oilseed Canola/Rapeseed	61.06	60.58	61.48	63.02	70.07
Oilseed Copra	5.71	5.88	5.57	5.79	5.82
Oilseed Cottonseed	39.51	44.30	47.78	46.06	44.51
Oilseed Palm Kernel	12.43	12.91	13.79	14.85	15.47
Oilseed Peanut	35.92	39.52	37.87	39.93	39.47
Oilseed Soybean	260.40	263.92	239.15	268.27	286.83
Oilseed Sunflowerseed	32.14	33.63	40.64	36.40	43.68
TOTAL	**447.16**	**460.73**	**446.28**	**474.32**	**505.85**

Ending Stocks (million tonnes)					
Crop	2009-10	2010-11	2011-12	2012-13	2013-14 (to Jan)
Oilseed Canola/Rapeseed	8.86	7.20	5.17	3.16	5.55
Oilseed Copra	0.35	0.29	0.31	0.23	0.22
Oilseed Cottonseed	0.91	1.37	1.96	1.43	1.33
Oilseed Palm Kernel	0.19	0.22	0.16	0.25	0.30
Oilseed Peanut	1.46	2.12	1.31	2.02	1.86
Oilseed Soybean	62.20	71.80	55.15	60.55	72.34
Oilseed Sunflowerseed	2.76	2.64	2.29	1.96	3.52
TOTAL	**76.72**	**85.64**	**66.34**	**69.6**	**85.11**

Source: USDA, January 10, 2014

for now, if (a) Latin American plantings expand strongly as we currently expect and (b) Northern hemisphere producers plant a large soybean acreage in the spring, then stocks could increase further by the end of the 2014-15 market year. This would create further downside risk to prices. In other words, the big picture still says that record South American production alone, especially when combined with strong North American acres, will likely result in potential for sharply lower prices next crop year and into 2016.

WHAT THIS MEANS FOR CANOLA

Like soybeans, the increase in Canadian canola usage and demand for both export and domestic crush markets has been phenomenal. While international canola prices more or less follow soybean component prices (soybean oil and meal), canola has been favourably priced to soybeans all crop year. Therefore we expect a combined export-domestic crush usage in excess of 15.2 million tonnes for 2013-14, with about 8.2 million in export potential and around seven million earmarked for crush. Even five years ago, the combined usage for export and crush number was at 10 million tonnes.

Moreover, if Canada had unrestricted access to rail capacity, we believe that this years' export potential for Canadian canola could be up to nine million tonnes at the current price ratio of canola to soybeans — thanks to increased demand by China. As it is, given the severe transportation capacity restrictions this year relative to the record, it will not be possible to maximize exports.

Export companies are already incurring demurrage, cancelation costs, vessel detention costs, and contract cancellations because railways cannot deliver on the current sales pace. Worse for growers, line companies are ever widening the basis because growers are looking for bids to move their large crops, and companies are forced to take on the risk on grain they know they will not ship for quite some time. In other words, for the Canadian farmer the result of (and cure for) inadequate Canadian rail and fobbing capacity is wider terminal-to-country margins.

By the way, transportation and fobbing capacity is not just a Canadian issue, but a Brazilian one too. Vessel waiting times in Brazil have been recorded at over 100 days last crop year. A record Brazilian crop will doubtlessly result in a reoccurrence of these problems this year.

Longer term, the export and resulting basis issues cannot be solved without Canada and the industry, including farmers, addressing first of all overall rail capacity and competition, and by aligning Canada's longer term export ambitions and efforts of all commodities with transportation capacities and handling targets. ●

Marlene Boersch is with Mercantile Consulting Venture Inc., in Winnipeg. She wrote this outlook January 8, 2014.

BIODIESEL OUTLOOK

By Richard Kamchen

Biodiesel use has room to grow in Canada but may have reached a wall in the U.S. and EU. However, the new trade deal with Europe could increase opportunities for Canadian canola oil sales into that biodiesel market. Meanwhile, as emerging markets introduce their own biodiesel mandates, it will improve the long-term outlook for all high-oil crops, including canola.

Near-term growth in the biodiesel market for canola oil will likely come from Canada. Manitoba and Alberta will review their biodiesel mandates in 2014, and the Canola Biodiesel Working Group will advocate for incremental increases.

"It is realistic to envision incremental growth in the provincial mandates in the coming years," says Steve Pratte, policy analyst with the Canadian Canola Growers Association. "Minnesota, a cold weather state, has a 10 percent blend requirement, so a three, four or five percent blend in the Prairies is not necessarily a radical or indefensible position."

All three Prairie provinces have two percent inclusion rates, while B.C. has a mandate to include four percent biodiesel in diesel fuel. Ontario also has a draft regulation that, as it currently reads, would see a two percent mandate beginning April 1, 2014 and increasing to four percent on January 1, 2016.

The working group, which includes membership from Canadian Canola Growers Association (CCGA), the Canola Council of Canada and the provincial canola grower organizations, is focused on ways to grow the domestic market.

While increased mandates are an important step, the working group is also looking to change the feedstock rules. The problem for Canada's canola industry is that the Canadian mandates generally don't have carbon intensity parameters, which means domestic biodiesel producers can import palm oil to meet regulations. Canadian canola's biodiesel market share has consequently shrunk because of the importation of cheaper palm.

"So as a canola industry, we're looking to regain market share with canola," says Pratte. "The sliding prices of the last little while make canola more favourable to compete because it has better GHG reduction properties than some of the other feedstocks, like palm or soy oil."

While palm is cheaper, it only reduces carbon intensity by seven percent, whereas canola, although more expensive, cuts it by 94 percent. That's important in B.C., where the four percent volume mandate also comes with a low carbon fuel standard.

CCGA would like to see all provincial mandates met by domestic biodiesel production using canola oil. Up until very recently, Canada needed to import biodiesel from the U.S. and elsewhere to meet its obligations. Currently, the market demand created by the existing Western Canadian provincial biodiesel mandates is approximately 350 million litres per year, and with all four western plants operating at full capacity, approximately 365 million litres of biodiesel could be produced.

"What we've been working on is establishing, through the provincial mandates, a moderate domestic demand for the canola biodiesel, which could ideally be manufactured here in Western Canada," Pratte says. "It just makes sense – another domestic outlet and spinoff for regional development."

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BIODIESEL OUTLOOK
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U.S. AND EU AT THE WALL

Sales of canola oil for biodiesel production in the U.S. and EU are worth around $500 million per year and an immediate increase in growth is not expected.

An increase in fuel efficient vehicles in Europe and the U.S. is one factor reducing overall demand for fuel in general, which also slows demand for biofuels, says James Fry, chairman of the U.K. based agribusiness consultancy firm LMC International. "In the U.S., the demand for gasoline, for diesel, didn't grow as fast as the EPA [Environmental Protection Agency] had expected, because they failed to allow for the effects of more fuel efficient vehicles," Fry says.

As a result of lower gasoline demand, ethanol expansion has slowed in the U.S. That, and resistance to blending more than 10 percent ethanol in gasoline, has resulted in the industry hitting a so-called "blend wall" for ethanol. Car manufacturers won't allow their engine warranties to be valid for over 10 percent ethanol gasoline and gasoline stations want simplicity, not a proliferation of different ethanol pumps. This has created a great hurdle to satisfying rising blending mandates.

"So the EPA blinked…They have recommended to the U.S. administration that instead of the mandates going on rising as they are meant to do under the Renewable Fuels Standard Law, they have recommended basically they stand still," says Fry. "It's all being driven by ethanol. Biodiesel sort of tags along."

Increasing the mandate for ethanol by only miniscule amounts means they're not proposing to increase the biodiesel mandate either, he adds.

Canola and feedstock demand in the EU's biodiesel industry has been stymied by a broader mandate for renewable fuel feedstock. In 2010, the Europeans began providing incentives to encourage the use of waste oil feedstocks like used cooking oil and fats such as tallow and grease instead of canola.

Using a double credit, one litre of biodiesel from non-crop feedstock sources could count as two litres of biodiesel under the EU renewable fuels mandate. "So the physical volume of biodiesel that is being used in Europe has actually been going down for two, maybe three years," says Fry.

"It's all being driven by ethanol. Biodiesel sort of tags along."

– James Fry on the U.S. biofuels market

He adds the enthusiasm for biofuels in general in the EU has waned in the last three years, partly as a result of the food-versus-fuel debate. The change of mood is already evident in Spain, where the biodiesel mandate was cut from over seven percent in 2012 to just over four percent in 2013. Whereas the EU once considered mandating 10 percent of gasoline or diesel coming from biofuels by 2020, ministers are now looking for significantly lower targets for first generation biofuels – those made from vegetable oils.

THE POSITIVES

"It is fair to state that the mood has changed in the EU, and proposed reductions are on the table, but the EU has been unable to make a decision," Pratte notes.

He adds that the new Canada-Europe Comprehensive Economic and Trade Agreement (CETA) will be positive for exports of Canadian canola oil to Europe. CETA eliminates tariffs on canola oil and ensures duty-free access for canola and canola products to Europe, a market worth approximately $90 million on average, with potential for up to $90 million in additional exports with tariff elimination.

Future growth in biodiesel production and use over the next five years is likely to come from emerging markets, such as Brazil and Indonesia, says Fry. That growth is bound to be fueled by local production, like palm in southeast Asia and soybeans in South America. While this does not present a sales opportunity for canola directly, it will remove more vegetable oil from the market, thus influencing overall demand and underpinning all prices. ●

Richard Kamchen is a freelance writer based in Winnipeg.

THE BEST CANOLA SEEDING CANADIAN CANOLA… KEEP IT COMING
from page 7

CCC Board chairman Terry Youzwa says the world will need 26 million tonnes of Canadian canola by 2025, given the growth trends of vegetable oil use globally.

We also have been deeply involved with federal officials in various global trade negotiations. For instance, we reached a great milestone with the conclusion of the Comprehensive Economic Trade Agreement with the European Union.

One point I'd like to underline in our new plan is the importance of science. The canola industry partners with government to heavily invest in scientific research and innovation. Science around the health benefits of canola oil and the energy profile of canola meal drives market growth. Science drives our market access efforts. And science drives the innovation in agronomy.

A STAKE IN THE GROUND

The launch of Keep it Coming 2025 definitely raised some eyebrows both inside and outside of our industry. I think that's a good thing.

What the canola industry has done is put a stake in the ground to declare where we are headed. We are an industry that generates $19.3 billion in economic activity every year, and nearly a quarter of a million jobs. We have a responsibility to lead thoughtfully, and collaboratively. Now our message is out there. We are sending a clear signal about what needs to happen to handle substantial growth potential in our industry.

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Canadian Canola…Keep it Coming. ●

Patti Miller is president of the Canola Council of Canada.

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DIAGNOSTIC DILEMMAS

By Jay Whetter

The 4 Rs of fertilizer can often make or break a canola field. The 4 Rs are: right rate, right place, right time and right product. These diagnostic dilemmas are all about fertilizer management and how a misfire on just one R can throw profit off target.

Wrong blend. Too much fertilizer in the seed row. Not enough sulphur. Or the wrong type of sulphur. When Canola Council of Canada (CCC) agronomy specialists have diagnostic challenges that ultimately connect back to a crop nutrition issue, it most often stems from one of these problems. Here are two examples.

ELEMENTAL, MY DEAR WATSON

A grower called in June. He had just sprayed a canola crop, and the stand was unusually thin and a lot of plants were sickly. He wanted to know how to rescue the crop. The CCC agronomist went to the field and saw the stark difference between this problem field and other fields in the area. Other fields looked good. This one looked terrible.

The agronomist went through all the necessary questions regarding rotation, disease history, frost records, herbicide treatments, seed treatments, seeding practices and the 4 Rs of fertilizer. The damage could possibly be lingering effects of Group 2 carryover or some in-crop herbicide miscue, but the grower had not used Group 2 on that field for a number of years, and his weed control was fairly straightforward.

The grower revealed a few potential problem areas with his seeding practice – including seeding what seemed to be much too fast for the seeding tool and the crop conditions. That could explain the thin stand, and what the agronomist noticed to be a fairly wide range of crop staging from plant to plant.

But this didn't explain the obvious signs of stress in a number of patches throughout the field. Top leaves had yellowing and even some purpling around the edges. They were also narrow and cupped, and seemed to be a lighter colour. A couple of knolls with poor soil texture showed really poor establishment and had the most obviously discoloured plants. The agronomist was starting to get the picture.

"Tell me again about your sulphur situation?" he asked the grower. The grower explained that his soil tests showed decent levels overall, but that he applied 20 lb./ac. across the field because he knew that canola needed a lot of sulphur and that sulphur levels, while perhaps adequate in an aggregate sample, tended to be highly variable across a field. "Excellent," the agronomist said, "but if these symptoms are tied to low sulphur levels, the first 10 lb./ac. of actual sulphur from ammonium sulphate should have made most symptoms disappear."

The agronomist then asked about the fertilizer source. "I put elemental sulphur into my fertilizer blend and applied it with my other fertilizer at the time of seeding," the grower said.

Canola plants with a sulphur deficiency tend to be pale coloured, with yellowing and even purpling of the leaves. Newer leaves are often stunted and cupped, while lower leaves may look healthy. Sulphur deficiency often does not show up this early in the season unless very severe.

Therein lies the problem. Elemental sulphur, if it is to provide any benefit, must be applied in the fall ahead of canola so it has a chance of breaking down and becoming available when the crop needs it. In other words: right product, perhaps, but wrong time. Ammonium sulphate applied at around 20 lb./ac. of actual sulphur at the time of seeding and in a band with the nitrogen satisfies the 4 Rs for sulphur.

continued on page 18

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CANADIAN CANOLA GROWERS ASSOCIATION

The cash advance program administered by CCGA is made available to Canadian farmers through Agriculture and Agri-Food Canada's Advance Payments Program.

continued from page 16

This canola crop was starved for sulphur. An immediate top dress with ammonium sulphate (dry) or ammonium thiosulphate (liquid) would perk up the plants and salvage some of the yield potential. some of the yield potential.

THE P IN PROFIT

Application mistakes are great learning tools, but it's always better if we can learn from someone else's mistakes, rather than our own. In this case, the grower made a mistake but didn't notice until he was partway done seeding a field. He took corrective measures, but didn't bother to go back over the seeded acres to correct the problem. He just kept seeding.

So in this case, it wasn't a dilemma that prompted the grower to make a call last July. Rather, he was excited to show people how his mistake totally changed the way he manages his seed-placed fertilizer blend.

Phosphorus deficiencies don't always exhibit strong symptoms, which is why University of Saskatchewan crop nutrition specialist Jeff Schoenau calls it "hidden hunger." But phosphorus deficiencies can occur and are probably getting more common with the combination of higher yield (more removal) and insufficient fertilizer rates (safe seed-placed rates versus a maintenance program that applies some P with the banded blend to match removal rates).

So what happened in this case? The field was to receive a blend of 12.5-20-0-10 at 75 lb./ac. in the seed row, but the retailer delivered 20-0-0-10 in error. Neither of these blends are what the CCC would recommend for seed placement with canola (but keep reading to see why we included these details). The grower also put down 140 lb./ac. of 46-0-0 as a mid-row band.

Rather than use the wrong delivered blend for his seed-placed fertilizer, the grower used 11-52-0 that he had on hand until the ordered blend showed up. He then switched to the "correct" blend when the fertilizer dealer was able to get it out to them. Both went on at 75 lb./ac.

The side of the field that had the seed-placed 11-52-0 looked fantastic. The side with a seed-placed blend that included sulphate and overall higher rates of nitrogen had 30 percent fewer plants per square foot, uneven emergence and smaller plants.

The grower called a few weeks after emergence to invite the retail agronomist out to the field. The side of the field that had the seed-placed 11-52-0 looked fantastic. The side of the field with the "correct" blend that included sulphate, much less phosphate and slightly more nitrogen had 30 percent fewer fewer plants per square foot, uneven emergence and smaller plants.

A few Rs are at work here. Right place is one. Nitrogen and sulphur fertilizer are safer outside the seed row. Right rate is the other. After talking to the grower about historical fertilizer rates on the field, it seems the hidden hunger of phosphate deficiency was a strong likelihood. Ideally, canola growers will consider maintenance rates of phosphate fertilizer, which match removal rates from previous crops. However, that rate often exceeds what is considered the safest seed-placed rate of 20 lb./ac. of phosphate (40 lb./ac. of monoammonium phosphate), although in moist conditions growers can often get away with double that rate. ●

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

TRY THE CANOLA DIAGNOSTIC TOOL

The online Canola Diagnostic Tool at **www.canoladiagnostictool.ca** walks you through a series of questions to get to the bottom of a problem. The tool then provides a list of potential causes, along with photos, descriptions and links to the Canola Encyclopedia to help users make the right management decision. ●

THE 4 RS OF FERTILIZER

Fertilizer use efficiency will be a key pillar in the Canola Council of Canada's (CCC's) agronomy message as the industry strives to meet the target of 26 million tonnes of canola production and sales from basically the same acres we have now.

Fertilizer management decisions that will increase efficiency stem from the 4 Rs. The 4 Rs are:

Right time: This can vary by product. At or before seeding is often more efficient than fall application or in-crop top up, but growers have to also consider fertilizer costs and logistics of applying all that fertilizer at the same time as seeding.

Right rate: Are phosphorus rates based on minimum crop needs, or long-term maintenances? Do your cereals exhibit potassium deficiencies, and is now time to consider K for canola? Does your canola have enough sulphur? Is it time to re-evaluate nitrogen rates given higher yield potential of new hybrids? These are some considerations as growers strive for higher profits.

Right place: The only fertilizer that has a benefit when it comes to seed placement is phosphate. All other nutrients should go in a band away from the seed row.

Right product: Elemental sulphur is not the right product for spring application. Controlled release nitrogen is not the right product for a top dress. ●

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PANEL ON PROFITABILITY

By Jay Whetter

These six growers, directors with provincial canola organizations, were asked about potential threats to long-term canola profitability, and what they are doing to preserve profitability on their own farms.

GREG SEARS

Sexsmith, Alberta

Greg Sears takes a big picture approach when asked about long-term canola profitability. "Our primary need, as an industry, is to maintain and expand markets so we can access premium prices and be more insulated from oilseed market swings," he says. "We need to have our canola "market ready," which means growing only registered varieties and being sensitive to pre-harvest intervals for crop protection products."

"We can't fly under the radar anymore," says Sears. With communication the way it is, anything growers say or do can be photographed and tweeted and be all around the world in no time. "A tweet from Grande Prairie could be picked up in Hong Kong," he adds.

Sears encourages growers to be positive about their product and the industry. "Be able to explain what you do as a canola grower to the lady in the seat next to you on a plane," he says.

He also says long-term profitability depends on growers being good stewards of the environment and the land. "The general public expects food to be produced in a safe and sustainable manner," he says. "If growers follow product labels and maintain good stewardship practices voluntarily, it may prevent or delay costly and onerous practices from being imposed on us through regulation."

Sears is on several environment committees as part of his role as director with Alberta Canola Producers Commission, and he says one potential issue is the rise in agriculture plastics – like grain storage bags. "They need to be disposed of properly, and ideally reduced or recycled," he says. "We don't want a family from Calgary going on a Sunday drive and seeing a mess of plastic in a field."

"If growers follow product labels and maintain good stewardship practices voluntarily, it may prevent or delay costly and onerous practices from being imposed on us through regulation."

– Greg Sears

FRANCK GROENEWEG

Edgeley, Saskatchewan

The fact that a tight canola rotation has been profitable in the short term is probably the biggest threat to canola profitability in the long term, says Franck Groeneweg.

"Canola on canola may work, but just because we can do it, doesn't mean we should do it and that there isn't an alternative that could be better," he says.

Lately, he has been growing canola on a 2.5-year rotation, on average, and he plans to stretch that back out to three years by inserting flax or peas or fababeans between cereals and canola.

Groeneweg sees clubroot and weeds as specific threats that can be managed throughout the rotation. "With clubroot, it's not just management with this year's canola crop, but also management of host weeds in all crops, and limiting the movement of soil in all crops," he says.

As for weeds, he says good weed control in crops ahead of canola provides a big boost to profitability. "My best canola crops have come off fields with perfect

Greg Sears

Franck Groeneweg

Stan Jeeves

weed control, however I have to be extremely mindful to avoid chemical resistance – especially with wild oats – by rotating herbicide modes of action."

Finally, Groeneweg says the logistics of moving such big crops to market, and not always being able to deliver when needed for cash flow, could challenge profitability. "Canola profits are influenced by marketing decisions more than anything else," he says. A marketing plan that includes some forward selling, deferred delivery contracts that will guarantee delivery opportunities, and an incremental approach to pricing will likely put a grower on the upper end of average, he says. It also helps to anticipate when more growers are likely to sell their canola, and then try to do the opposite, he adds.

STAN JEEVES
Wolseley, Saskatchewan

Stan Jeeves says runaway land prices and piling on of equipment debt could be a major threat to profitability given the recent drop in grain prices. Prices are cyclical and always have been, he says. "When we get caught up in the hype that $10 canola is here to stay and then bid land prices up, up and away, we bid away all our profit potential when prices fall," he says.

Jeeves has remained diversified with cattle and crops, and he says the legumes he grows to feed his cattle should help with his long-term profitability on a whole-farm basis. "I have alfalfa and sweet clover in the rotation, which build up soil nitrogen and reduce fertilizer costs," he says. "These legumes allow me to maintain yields without escalating fertilizer inputs."

"I have alfalfa and sweet clover in the rotation, which build up soil nitrogen and reduce fertilizer costs. These legumes allow me to maintain yields without escalating fertilizer inputs."

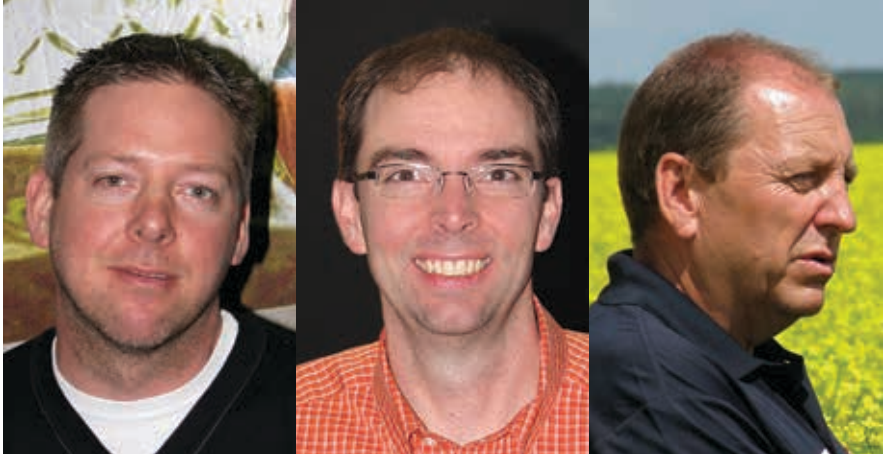
– Stan Jeeves

CLAYTON HARDER
Rosser, Manitoba

Per acre cost of production for canola is on par with corn in eastern Manitoba, Harder says. This is a risk given that soybean costs are much lower and, in the past few years, soybean profits have been higher in his region. A big factor in this cost difference is fertilizer.

"Farmers will jump on anything the industry can offer that will improve fertilizer use efficiency," he says. He's looking for the next big breakthrough, but one improvement Harder sees is to apply fertilizer in the spring instead of the fall. "You're spending "x" dollars on fertilizer either way, but by applying at the right time you lose less of it, which converts into higher yield and profit," he says.

continued on page 22



Clayton Harder *Renn Breitkreuz* *Terry Phillips*

Harder actually sees good synergy from soybeans and canola in his rotation. He often plants soybeans ahead of canola. "Canola likes the black ground you get after growing beans," he says. The one risk is sclerotinia, which strikes both crops. "I would be hesitant to follow with canola if there was lots of sclerotinia in the beans."

Improved sclerotinia stem rot risk forecasting would also help with profitability. The past couple years Harder has sprayed fungicide on only some canola fields, and the yield was the same for sprayed versus unsprayed fields. Ideally, he would like to know the return is there before spraying.

RENN BREITKREUZ

Onoway, Alberta

"The biggest threat to canola profitability in our area is the emergence and spread of clubroot," Breitkreuz says. This will most likely lead to some re-evaluation of rotation, he says, especially in counties that stipulate a rotation on fields with clubroot.

"We will be growing clubroot-resistant varieties and we will be using whatever else the scientific and seed community can provide us with to maintain genetic resistance," he says. He'd like to see genetic resistance classified and advertised so growers can rotate between different clubroot resistance sources.

Breitkreuz adds that with prices and margins down for canola in 2014 compared to previous years, "we will have to sharpen our pencils" and reapply return-on-investment analysis to decision-making. "On our farm, we were too complacent as a result of high prices," he says. "We have to go back to good basic agronomy." For him, the best return on investment comes from stand establishment, weed management and nitrogen fertilizer.

TERRY PHILLIPS

New Liskeard, Ontario

Swede midge hammered canola yields so bad in the Temiskaming area, which is the largest pocket of canola production in Ontario, that many long-time canola growers may not grow the crop at all in 2014. "I spent $450 per acre on my canola in 2013, and the crop yielded only 0.36 tonnes (15 bushels) per acre," Phillips says.

Costs are normally $350 to $400, but he sprayed twice for flea beetles and twice for swede midge, increasing his costs by close to $100 per acre. Flea beetles chewed the crop down twice before it got established, which set it back by a few weeks. This pushed maturity back into the key time for swede midge egg laying. So Phillips sprayed Coragen twice in an attempt to curtail the swede midge damage. It may have helped somewhat but did not preserve profitability. "What we need is a seed treatment that is effective on striped flea beetles so our crop isn't delayed, and a systemic insecticide that will control swede midge larvae feeding inside flower buds," he says.

His soybeans also yielded below the 10-year average but were profitable. For this reason, most canola acres in his area will be seeded to soybeans in 2014.

What amazes Phillips is how quickly swede midge escalated into a serious problem. Three years ago it was just a trace issue that caused very little yield loss. Two years ago, swede midge hit a few crops fairly hard. But in 2013, it wiped out yields all across the region.

Phillips says three years ago the thinking was adults could only travel on to two metres in a season, so the pest should stay localized. But after a year of study, it was determined that adults could travel a kilometre, and that canola fields beside fields that were in canola the year before were at risk.

In response to the damage in 2013, Phillips says some growers used mouldboard plows in the fall to bury the pupae. Those who plan to stick with canola in 2014 will also seed earlier and follow other steps to ensure rapid emergence. Severe winter temperatures may reduce winter survival, however Phillips says it could be three years before the midge population is reduced enough to give him the confidence to grow much canola again. ●

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

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SCOUTING FROM THE SKY

By Bruce Barker

Remote imagery can help managers of geographically diverse farms scout fields and keep on top of emerging issues. But nothing beats feet on the ground when it comes to properly diagnosing problems that need immediate attention.

The saying goes that "a picture is worth a thousand words." For farmers, the saying could be modified to "a picture saves a thousand steps in a field." For large farmers or small, using remote sensing images from satellites, airplanes or drones can provide valuable insights to field and crop management, help cover more acres in-season, and provide post-harvest zone analysis.

"We do a lot of work in Russia and eastern Europe where the need is mostly basic agronomy rather than variable rate technology. Their biggest challenge is that they have 200,000 to 500,000 acre farms spread over large geographies and they can't scout the fields quickly, so the managers don't really have a good handle on what is going on in fields 400 kilometres away," says Kolby Nichol with Farmers Edge in Winnipeg, Manitoba. "Remote sensing helps fill in those gaps in information for the managers so they can get agronomists out to the field to help make decisions."

Nichol offers an example from a farm in Russia where a new CEO from Britain had just taken over. He was frustrated with the lack of information he was getting, so he thought he would go out and check the fields on his own. After two weeks of driving, the CEO was starting to get an understanding of crop performance, but his confidence was still low because of the relatively small amount of field information he was able to collect.

Farmers Edge worked with the CEO to set up a remote sensing program using satellite imagery to provide in-season assessment of crops. By using the satellite imagery, Farmers Edge was able to identify in-season production issues, and the CEO was able to get an agronomist out to the field to assess the problem and take action.

Farmers Edge has used remote sensed imagery since 2005 as a fundamental component of their precision agronomy, variable rate fertility and variable rate fungicide programs. Nichol says, during that time, they have come to understand that all farms can benefit from the use of historic, remote sensed satellite imagery for crop planning purposes. However, the best use for "real-time" or "in-season" imagery is using it to make better decisions about the growing crop when information is difficult to get through traditional methods.

"If you're the type of guy who likes lots of information and wants to improve your management ability, then remote sensing programs can work for you."

– Warren Bills

"Using imagery in-season for crop scouting purposes shows tremendous rewards for managers of larger farms who find themselves struggling to stay informed about their crops' health, pest problems and yield potential," says Nichol.

Another company providing remote sensing agronomic services is Agri-Trend. It uses historic satellite imagery to develop field management zones. Their PowerZone program utilizes up to 30 years of satellite imagery to highlight different field production zones.

"Using the information, when we go to the field we know where we should scout for production problems like lodging potential, compaction, and disease pressure," says Warren Bills with Agri-Trend, headquartered in Red Deer, Alberta. "Based on historic imagery, we can look at areas of lower production potential and use those as early warning signs of where disease might develop first because the crop is under stress."

REMOTE SENSING TECHNOLOGY

Remote imagery can be obtained through three main sources. Satellite imagery is the most commonly available and usually the lowest cost per acre to obtain. Landsat satellite imagery has a resolution of about 30 metres, which makes it good for a macro viewpoint

of fields to help develop management zones. Other satellite providers have more detailed resolution, including SPOT at 12- to 20-metre resolution and Rapid Eye with down to five-metre resolution. For more detail than that, you have to join the military.

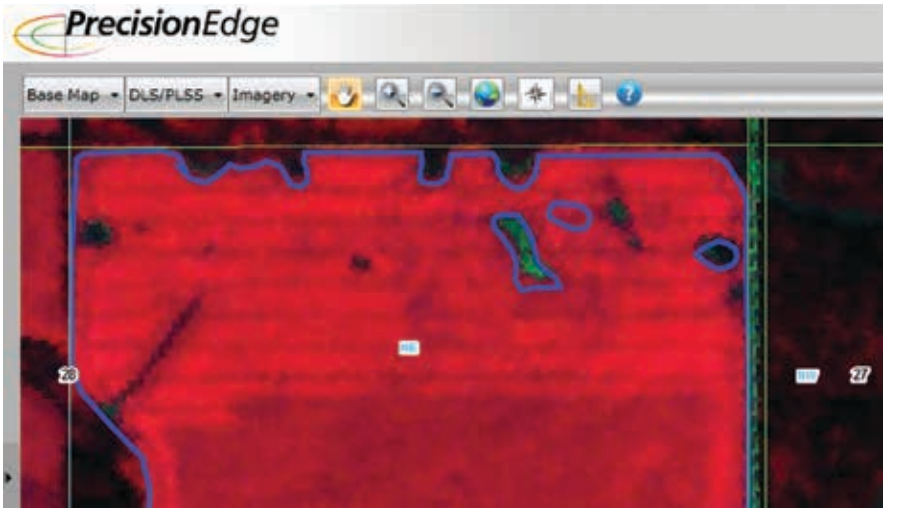
"Your goals basically determine what type of resolution you need. Currently, five metre resolution is more than adequate for most applications in agriculture, especially since the majority of application equipment is greater than 50 feet (25 metres) wide," Nichol says. "It's nice to have better resolution imagery, however the practical application at this point is very minimal, which means it's usually not worth the additional costs."

One issue with satellite imagery is that the satellites fly on a regular schedule, and that may not accommodate when in-season scouting needs to occur. For that reason, satellite imagery is used less for in-season scouting and more for taking a big picture view of fields that can be analyzed after the growing season. Clouds, darkness and shadows may affect the images as well.

A second option for obtaining images is to hire an aerial imaging company to fly airplanes on-demand to take the images when you need them. This can help with in-season scouting or to set up in-season applications such as variable rate fungicides. Aerial imagery typically costs more per acre than satellite.

"For fungicide applications, you want an image at the cabbage leaf stage so you can see the growth potential of different areas of the field. Using historical information and combining it with in-season imagery, we can see which areas of the field could use a fungicide application. We stick to label rates, and base the fungicide application on yield potential. High yield potential areas are sprayed, and lower ones aren't," says Nichols. "We'll use Rapid Eye or SPOT so we can key in certain times when we want the images."

A third option for obtaining images is using unmanned aerial vehicles (UAV) or drones. These small, remote controlled drones can be flown over individual fields to provide another way of scouting fields. Agri-Trend has five drones in the network, and deploys them when satellite and aerial imagery aren't available or cost-effective.



This is a Normalized Difference Vegetative Index (NDVI) image of a canola field in central Alberta. It was taken by satellite July 30, 2012, two weeks after a fungicide application. The sprayer ran out after spraying the north part of the field, and the line is clearly visible.

The type of imagery collected with digital remote sensing includes the three bands of red, blue and green colors in the visible spectrum. Infrared wavelengths not visible to the human eye can also be captured, and are usually represented in shades of red. Visible and infrared imagery can be combined to produce an index called the Normalized Difference Vegetative Index (NDVI), which can be used to provide indications of plant vigour and plant stress. NDVI images are most commonly used for in-season scouting to show differences in plant growth in a field.

WHO USES THIS SERVICE?

In addition to Agri-Trend's PowerZone program, they also use remote imagery for their In-season Crop Monitoring Program, where they help farmers and agronomists keep track of their crops at certain critical stages of the growing season.

"Mostly, we use remote images in-season for disease pressure and using that information to develop variable rate fungicide application in canola," says Bills. "We have used it for variable rate wild oat control, where we can look at in-crop applications to patches rather than spraying the entire field."

Bills also sees a demand for the use of remote sensing to help assess sprayer drift issues or pesticide product complaints.

Nichols adds that remote imagery can be used for diagnosis of other problems such as sprayer overlaps, and fertilizer misapplication. Combining imagery with field scouting and yield mapping helps agronomists and farmers pinpoint better ways of managing a field.

"Identifying problems in the field is half the battle. Being able to answer why a field didn't yield the way it should have helps with production and profitability next year," says Nichols.

At a cost of $2 to $4 per acre, using remote sensing/consulting programs may not be for everyone. Certainly, larger farmers who have difficulty covering all their acres in-season can benefit from in-season imagery, but Bills says deciding who can benefit depends more on farmer philosophy than farm size.

"Whether you can benefit from this type of program depends less on the size of the farm than the management style of the farmer. If you're the type of guy who likes lots of information and wants to improve your management ability, then remote sensing programs can work for you," explains Bills.

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

PHOTO: Farmers Edge

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BUILDING A SWEET RELATIONSHIP

By Gail Granger

It's good to have bees in the 'hood — particularly when you're growing canola. The industry is working with honey producers to ensure both commodities continue to thrive.

"Bees are good for canola, and canola is good for bees." That's the mantra Curtis Rempel repeats whenever he discusses the unique relationship between the canola and honey industries, both so important to the western Canadian economy.

His slogan sums up a basic truth: The well-being of bees and canola is strongly linked – perhaps even in ways we have yet to discover. To ensure the success of one industry, we need to protect the welfare of the other.

That's why Rempel, the Canola Council of Canada's (CCC's) vice president of Crop Production and Innovation, has been leading the team of CCC agronomists in an effort to strengthen communication and cooperation between canola growers and commercial beekeepers. In partnership with the Canadian Honey Council, they're spreading the word about how to protect pollinators and create optimum conditions for the success of both industries.

The Canadian government has helped out by providing funding from Agriculture and Agri-Food Canada through the Agricultural Flexibility Fund (AgriFlexibility) under Canada's Economic Action Plan.

"We have a great message: Canola is a great food source for bees, and bees make canola fields more productive," he says. It's a message that should be heard by all Canadians, Rempel added. "There are a lot of misconceptions out there about how crop production practices affect pollinators, but the truth is that bees and canola thrive when they are in close proximity."

Canada's honeybee statistics back him up. The number of hives in Canada is currently at near-record levels, and about 70 per cent of them are located in the western provinces, where canola acreage abounds. Many honey producers seek out canola fields – and canola growers welcome them – because of the mutual benefits.

"It's clear that canola and bees co-exist very well," Rempel said. "Hive health in western Canada is very good. We don't see the concerns that have been observed in other parts of the world."

TIPS FOR PROTECTING POLLINATORS

- Use thresholds and principles of IPM to increase profitability while reducing pesticide use.
- Avoid spraying flowering canola.
- Avoid spraying insecticide from morning to early afternoon when bee activity peaks in canola.
- Spray insecticide after 8 p.m., when most bees are back in the hive.
- Minimize drift. Monitor wind, leave a buffer area (50m) from beehives, and use drift reducing nozzles.
- Maintain dialogue with beekeepers. Know where beehives are and safe times to apply products. The beekeeper may be able to move bees or cover the hives during spraying.
- Choose products with low potential hazard to bees. ●

Greg Sekulic, a CCC agronomist, has been working with canola producers to understand the value of beneficial insects (including bees) to canola crops, and to implement best management practices to promote these insect populations. It's important that canola growers keep bees in mind when planning pest management activities. Sekulic says that growers can greatly reduce exposure by avoiding insecticide spray applications when canola is in flower. If spraying is unavoidable, it should be done after 8 p.m., when most bees are back in the hive.

"Ultimately, the best way to protect bees is good communication," Sekulic says. "Growers should get to know the honey producers in their area, and let them know when and where they plan to spray. Armed with this information, beekeepers can move or cover their hives to reduce the exposure."

A new online tool called DriftWatch may soon be available to help improve communication between canola growers and honey producers. Currently in use in several U.S. states, this mapping application identifies hive locations and provides tips to control spray drift. Industry and government partners are joining forces to test DriftWatch in Saskatchewan, with an eye to making the tool available on a national level.

In the meantime, the CCC has been reaching out to growers, beekeepers and regulators to increase their knowledge and understanding. The team has also completed a video series in which canola and honey producers share their perspectives.

"Growers and honey producers responded very positively to the information sessions last winter," Rempel said. "They see that it's in everyone's best interests to work together. ●

Gail Granger is the acting director of communications with the Canola Council of Canada.

IMPACT ABROAD

By Samara Hutton

Canola has a $19.3 billion impact on the Canadian economy. Our canola also has huge benefits abroad. Recent studies have quantified the economic impact of imported Canadian canola seed, oil and meal within the U.S., China and Mexico.

It pays to know your markets. In 2013, the Canola Council of Canada commissioned an independent analysis of Canadian-grown canola's impact on the economies of the U.S., Mexico and China. We wanted to learn how imported Canadian canola wove through these economies, and to quantify its increasingly positive impact on local industry, jobs and wages.

$4.8 BILLION IMPACT IN THE U.S.

Canadian-grown canola now generates an average of $4.8 billion in annual economic activity in the U.S., including $769 million from the core value chain.

The core value chain refers to the port, crushing, refining, biodiesel production, and transportation sectors that generate economic impacts through the processing and movement of canola products once they enter the country. Additional downstream impacts include canola meal benefits through its use in the livestock industry, and the economic impacts of using canola oil in food products.

About 16,290 jobs and $584 million in wages are generated in the U.S. each year as Canadian canola products make their way through the U.S. economy.

From 2006 to 2012, the total economic impact of the canola value chain nearly tripled in the U.S., job and wage impacts more than doubled, and benefits to the U.S. livestock industry grew four-fold.

More than 60 percent of the economic impact is rooted in the food manufacturing sector, and nearly a quarter of the economic impact is due to protein cost savings and increased productivity in the U.S. livestock sector. The biggest livestock sector impact is felt in the dairy industry, where meal from Canadian-grown canola is increasing dairy yields by one litre per cow per day. Biodiesel production is a growing generator of jobs and wages.

States enjoying the greatest benefits from canola are California, home to the largest portion of the nation's dairy herd and a sizable portion of food manufacturing, and Iowa, where many blending and bottling operations are located. North Dakota is home to most of the U.S. canola crushing capacity.

$3.6 BILLION IMPACT IN CHINA

Canadian-grown canola now generates an average of $3.6 billion in annual economic activity in China, including $963 million from the core value chain.

About 16,150 jobs and $61 million in wages are generated in China each year as Canadian-grown canola is processed, transported, fed to livestock and used in food manufacturing.

From 2007 to 2012, the total economic impact of the canola value chain in China grew six-fold, employment supported by the sector quadrupled, and total wages reliant on the sector multiplied ten times.

At ports, most of the total economic impact is created by seed imports, rather than oil or meal. Impacts generated by the transportation sector vary by

Canola's Economic Impact on the U.S.	2006	2007	2008	2008-09	2009-10	2010-11	2011-12	Yearly avg. 2009-10 to 2011-12
Core value chain only	$809 million	$1.11 billion	$2.88 billion	$633 million	$508 million	$866 million	$932 million	$769 million
Including downstream end-users	$1.81 billion	$2.98 billion	$3.98 billion	$4.15 billion	$5.58 billion	$3.42 billion	$5.27 billion	$4.76 billion

NOTE: All estimates include direct, indirect and induced impacts, expressed in U.S. dollars.

Canola's Economic Impact on China	2007	2008	2009	2010	2011	2012	Yearly avg. 2010 to 2012
Core value chain only	$178 million	$655 million	$1.02 billion	$894 million	$651 million	$1.35 billion	$963 million
Including downstream end-users	$0.768 billion	$1.91 billion	$3.53 billion	$3.29billion	$2.60 billion	$4.96 billion	$3.62 billion

NOTE: All estimates include direct, indirect and induced impacts, expressed in U.S. dollars.

product, as most distribution of canola oil is by rail and barge, while canola meal is transported by truck.

In the livestock sector, most of the economic benefit is due to cost savings when canola meal is used in China's huge aquaculture industry. Aquatic feed accounts for 70 percent of the Canadian canola meal consumed in China. China's growing dairy industry, which consumes about five percent of canola meal produced from Canadian-grown canola, also draws economic benefits through increased milk production.

Five of China's 22 provinces account for almost 70 percent of the total economic impact in China. Guangdong is the largest canola seed importer, and captures 25 percent of the total economic impact of canola on the Chinese economy. Canadian canola helps stimulate the food end-use sector, crushing, refining and port activities. With the largest aquaculture industry in China, Guangdong also benefits from its large imports of canola meal. Guangxi, the province with the second largest economic impact, is also a large seed importer and aquaculture producer. Anhui, Hunan and Sichuan have large populations and consume most of the oil produced from Canadian-grown canola.

$1.7 BILLION IMPACT IN MEXICO

Canadian-grown canola now generates an average of $1.7 billion in annual economic activity in Mexico, including $593 million from the core value chain.

About 8,300 jobs and nearly $110 million in wages are supported in Mexico each year as Canadian grown canola seed is transported and processed into high-quality cooking oil, food products and meal for animal feed.

In addition to the economic benefits, canola oil can help Mexico combat heart disease and diabetes, which are among the leading drivers of rising health care costs.

Most canola arrives in Mexico through coastal ports in the form of unprocessed seed. About a third of the economic

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

CARP ON COLD HARDINESS, INSECTS AND BLACKLEG

By Donna Fleury

Canola crop production is a priority for the grower-funded Canola Agronomic Research Program. This article highlights studies into cold hardiness, insect management strategy, and spraying for blackleg.

Two canola varieties were frozen for over an hour, two days before this photograph was taken. The one on the right is still green and much healthier, indicating a genetic improvement over the sensitive variety on the left.

The Canola Agronomic Research Program (CARP) is funded by growers from Alberta, Saskatchewan and Manitoba to support projects designed to improve canola production and grower profitability. Here are highlights from three recent studies on the search for cold hardiness genes, spinoff benefits of an insecticide application for cabbage seedpod weevil, and when it might pay to spray fungicide for blackleg.

C-C-COLD HARDINESS

Early-seeded canola crops tend to produce higher yield and quality. However, low temperatures early in the season can hamper rapid and uniform establishment and may cause significant productivity losses from early frost, delayed maturity, or other factors. Researchers are identifying molecular markers for cold response that will be used in future plant breeding efforts to transfer cold hardiness into commercial canola lines.

Ludovic Capo-Chichi, researcher with Alberta Innovates – Technology Futures in Vegreville, Alberta, is leading a three-year study to determine the extent of genetic variation in spring canola seedling emergence response to low temperatures, and to identify molecular markers for cold tolerance. Researchers investigated over 600 lines from a world-wide collection of canola, including *Brassica rapa*, *B. napus*, *B. juncea* and *B. oleracea*.

"Evaluating varieties from around the world allowed us to take advantage of the whole diversity of Brassica species so we can find the true gene or markers that link to the cold tolerance trait," Capo-Chichi says.

They evaluated canola seedlings at the cotyledon stage for response to freezing shock at -5°C for various periods of time. The combination of freezing temperatures and varying exposure time enabled them to identify important differences between lines responses to applied cold stress. Frost injury was scored based on visual assessment and measurement of chlorophyll fluorescence. They tested germination and emergence at low temperatures to determine if there was any genetic variation between lines.

Researchers have successfully ranked all lines for seed germination and seedling performance at low temperatures using seed produced under greenhouse and field conditions. The study found that under low temperature stresses, the time till the first seedling emerged and to 50 percent emergence is much longer in *B. napus* and *B. rapa* than in *B. juncea*. Overall, *B. juncea* appears to be more tolerant to low temperatures than *B. napus* and *B. rapa*.

"This project will continue through 2014, but so far we have found some very promising results," says Capo-Chichi. "We have successfully selected the extreme lines with high and low tolerance and have made progress in screening the lines for molecular markers." These lines were sent to Isobel Parkin at Agriculture and Agri-Food Canada in Saskatoon for genetic analysis.

PHOTO: L. Capo-Chichi, Alberta Innovates

Cabbage seedpod weevil.

Researchers found that when fungicide is used to manage blackleg, the application should be made at the early plant growth stage to have a chance at providing an economic benefit. Spraying when lesions are at the stage shown above is probably too late.

"Once the molecular markers associated with cold tolerance are finalized, we plan to take the research to the next step and work on transferring this cold hardiness into commercial lines," Capo-Chichi says.

TWO BUGS WITH ONE STONE

Cabbage seedpod weevil has become a chronic problem for canola growers in areas south of Highway 1 in Alberta and southwest Saskatchewan. Some growers have both cabbage seedpod weevils and lygus bugs in their canola fields and they want to know if spraying for weevils at early flowering might also help control lygus at the pod stage. Research results suggest that, yes lygus numbers at the pod stage can be reduced in most farms by spraying at early flower. But if weevils have not reached threshold levels at early flower, the results show no yield benefit from spraying at that time to manage other potential future pests – such as lygus.

Héctor Cárcamo, research scientist with Agriculture and Agri-Food Canada (AAFC) in Lethbridge, Alberta, led a four-year farm-scale study started in 2010 to determine how spraying insecticide for weevil at early flower impacts the abundance of lygus bugs at early pod stage in commercial farms. He also measured the impact on canola yield.

"We wanted to validate earlier results from small plots and cages in commercial fields under typical grower management," explains Cárcamo. "The dynamics of insects are different at the farm scale and there is a large amount of variability in farm fields. Having a four-year study at the farm scale, particularly for insect research, is important to help account for that variability."

Researchers studied 77 canola fields over the four years, sampling insect data at specific GPS locations in several quadrants in both sprayed and unsprayed check areas. They also recorded combine yield data from GPS-linked files when it was available.

"The results show that in most of the fields sprayed at early flower, the number of lygus was lower at the early pod stage," says Cárcamo. "In a small number of fields – about 10 to 20 percent – growers still had to spray for lygus at early pod. We're not sure why, but it is likely that lygus may have arrived too late or the crop may have been late seeded. However, higher number of lygus later in the season did not always translate to a yield loss."

The study supports this current recommendation: If cabbage seedpod weevil is at the threshold level of two to three weevils per sweep, then spraying at early flower is recommended. However, if weevils are below threshold, then growers should not make an insecticide application just for the potential control of other insects, such as lygus, that tend to cause damage later in the season. Natural enemies or wet weather could reduce their numbers before they threaten crop yield. Spraying only when necessary also reduces the risk of insects developing resistance to insecticides.

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PHOTOS: (top) Lloyd Dosdall, University of Alberta; (bottom) Holly Derksen and Anastasia Kubinec, MAFRD

CARP ON COLD HARDINESS, INSECTS AND BLACKLEG
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BLACKLEG: SPRAY DECISION TIPS

Blackleg of canola has been increasing across the Prairies in recent years, largely due to shorter crop rotations and pathogen populations that are able to overcome resistance in current cultivars. Results from a recent research project show that fungicide applications may be a second or third line of defense only when cultivar resistance breaks down and other management options have been exhausted.

Gary Peng, research scientist with AAFC in Saskatoon, Saskatchewan, led a three-year field study across five locations in the dark brown and black soil zones of the Prairies. The study compared the efficacy of fungicides registered for blackleg, optimized the timing of application, and determined the benefit of a fungicide treatment to canola yield under varying levels of cultivar resistance.

In the study, the susceptible (S) cultivar Westar was compared to resistant (R) Pioneer 45H29 and moderately resistant (MR) 43E01. Fungicide treatments were applied to the S cultivar at an early growth stage (2 to 4 leaf), a late stage (just before bolting) or both, using several products – Headline, Quadris, Quilt and Tilt – at recommended rates and carrier volumes. The R and MR cultivars were treated with Headline only at the 2 to 4 leaf stage.

"The results show that, unless growers are in a high risk situation, a fungicide application will probably not pay," says Peng. "Although Headline reduced blackleg development on both R and MR cultivars, the treatment did not result in a significant yield increase relative to the untreated controls. For the S cultivar, an early application of a fungicide (except for Tilt) reduced the disease substantially relative to the untreated control, however yield increases were not consistently significant, especially when disease pressure was low."

Researchers also found that when a fungicide had to be used, the application should be made at the early plant growth stage – 2 to 4 leaf, for example. Early infection allows a longer period for disease development, which leads to greater impact on crop and yield.

Peng emphasizes that the decision to spray should be based on a risk assessment, including disease trend, cultivar resistance, crop and cultivar rotation, and weather conditions after seeding. Since there is currently only one effective mode of action (strobilurin) for blackleg control, judicious use of this option also helps reduce the risk of fungicide resistance developing in the pathogen population. ●

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

IMPACT ABROAD

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impact is generated from the core value chain as the seed is crushed, the oil is refined and the resulting products are transported to domestic customers. When used in animal feed, downstream economic benefits are generated as the high-protein meal provides cost savings and boosts productivity. The greatest impact by far is generated by downstream food uses, as the oil is used in the manufacture of other food products.

Jalisco state is where nearly 50 percent of all canola seed imported into Mexico is crushed. The state also has a large food manufacturing industry and livestock sector. Mexico state is home to 30 to 40 percent of the country's canola crush and food manufacturing capability. Veracruz also has a crushing facility, and its port receives 40 percent of Canadian canola seed entering Mexico.

These three economic studies were prepared as part of the Canola Market Access Plan (CMAP), with funding from Agriculture and Agri-Food Canada's Agricultural Flexibility Fund (AgriFlexibility) as part of Canada's Economic Action Plan. This type of analysis is important in demonstrating to government and industry stakeholders in export markets the economic benefits gained when canola products are further processed, transported, and utilized within a market.

The reports were developed by LMC international, a leading agri-business research firm. LMC used best practices to estimate the total impacts rippling through the economy of Canadian-grown canola and its end products. ●

Samara Hutton is the market access program manager with the Canola Council of Canada.

Canola's Economic Impact on Mexico	2006	2007	2008	2008-09	2009-10	2010-11	2011-12	Yearly avg. 2009-10 to 2011-12
Core value chain only	$380 million	$423 million	$744 million	$599 million	$441 million	$610 million	$727 million	$593 million
Including downstream end-users	$1.22 billion	$1.01 billion	$1.06 billion	$2.08 billion	$1.75 billion	$1.27 billion	$2.06 billion	$1.69 billion

NOTE: All estimates include direct, indirect and induced impacts, expressed in U.S. dollars.

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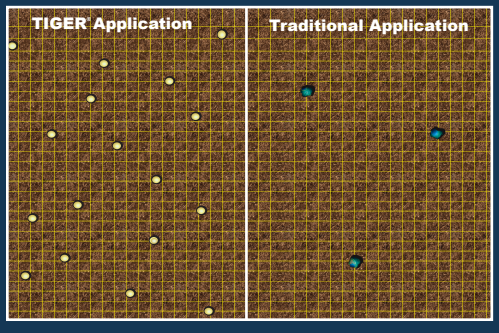

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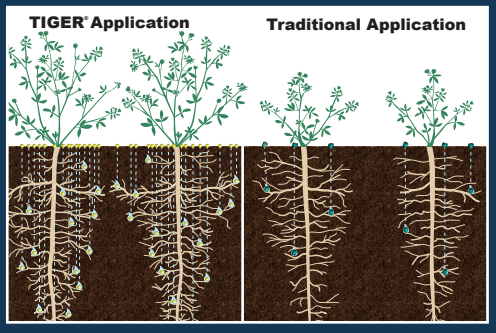

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ALBERTA Canola PRODUCERS COMMISSION

ABreport

ALBERTA CANOLA PRODUCERS COMMISSION DIRECTORS FOR 2014

The Alberta Canola Producers Commission's 24th Annual General Meeting was held during the FarmTech 2014 Conference in Edmonton on January 28, 2014. Director nominations were held in October, with four directors being acclaimed. Stuart Holmen from Paradise Valley is the new representative for Region 10. Returning to the Board of Directors to serve their second of two terms are: Kelly McIntyre from Fairview in Region 1, Daryl Tuck from Vegreville in Region 4, and Terry Young from Lacombe in Region 7.

Following the ACPC Annual General Meeting, Colin Felstad of Dapp was re-elected to serve as chairman of the ACPC for the coming year. Lee Markert of Vulcan will again serve as the board vice-chair and chair of the Governance and Finance Committee.

Daryl Tuck of Vegreville will chair the Agronomic Research Committee, Marlene Caskey of Oyen will chair the Market Development Committee, and Jack Moser of Killam will chair the Grower Relations & Extension Committee. A complete list of committee members can be found at: canola.ab.ca.

ACPC 2014 Board of Directors. Back row (l-r): Jack Moser (Region 11), Daryl Tuck (Region 4), Stuart Holmen (Region 10), Renn Breitkreuz (Region 6), Colin Felstad (Chairman - Region 5), Raymond Blanchette (Region 3). Front row (l-r): Elaine Bellamy (Region 8), Greg Sears (Region 2), Lee Markert (Vice Chairman- Region 9), Kelly McIntyre (Region 1), Terry Young (Region 7), Marlene Caskey (Region 12).

Todd Hames from Marwayne retired from the ACPC board.

A FOND FAREWELL TO TODD HAMES

Todd Hames of Marwayne retired from the ACPC Board of Directors at the conclusion of the Annual General Meeting after serving his maximum two terms as director for Region 10. Todd also represented ACPC on the Canadian Canola Growers Association where most recently he served as chair of the national organization that represents canola growers. As ACPC's grower representative, Todd was also chair of the FarmTech Conference planning committee for the 2013 and 2014 conferences.

"On behalf of Alberta's canola growers, I extend my sincere thanks to Todd for his dedication and commitment to the canola industry and the producers he represented so professionally," said ACPC Chairman Colin Felstad. "Todd committed a great deal of time and energy to the organizations he represented on behalf of the ACPC. His optimistic and pragmatic presence will be missed." ●

TAX CREDITS FOR CANOLA GROWERS IN ALBERTA

Canola growers in Alberta who do not request a refund of their checkoff from the Alberta Canola Producers Commission (ACPC) qualify for a tax credit for the 2013 tax year.

The Scientific Research and Experimental Development (SR&ED) tax credit allows canola growers to claim a tax credit for the portion of the checkoff paid that was used to fund qualifying research.

For complete details visit **canola.ab.ca/research** or contact the ACPC office at 1-800-551-6652. ●

MERLE GOOD RECEIVES THE FARMTECH AWARD

Farm business management expert Merle Good was the recipient of the FarmTech Award for 2014.

Each year the FarmTech planning committee recognizes one individual who over their career has made an outstanding contribution to agriculture in Alberta.

PHOTO: Earl Greenhough

Merle recently retired from Alberta Agriculture after 27 years of service. Throughout his career Merle has worked closely with farmers and industry to provide expert advice in many farm management topics including business structures, financing business arrangements, succession planning, and most importantly, agricultural tax policy and options for farm businesses.

Merle now works as a private consultant, where he continues working with farmers to improve their long-term profitability. ●

SaskCanola

SKreport

REPORT TO GROWERS

Catherine Folkersen
SaskCanola

March is Nutrition Month! What a great month for canola. It fits into a healthy lifestyle and is promoted by health professionals as a fantastic choice for maintaining a healthy cardiovascular system. Good job canola growers!

As plans for seeding are made, the bins that are still full of grains and oilseeds will likely be weighing on many farmers' minds. The huge harvest of 2013 has created discussion at every farm meeting this winter. All of the groups in the chain from production to manufacturing have heard the wake-up call. At SaskCanola, we want better service for farmers and are working with the Canadian Canola Growers Association (CCGA) to plan a long-term approach for improving rail service. The CCGA has a long history of working toward rail service improvements; their submission to the Rail Freight Service Review Panel is available on the CCGA website. It won't be an overnight solution but if all crops continue to increase in yield, a solution for the future must be developed by all Canadian agriculture groups.

This spring in Saskatchewan there is still time to get to a regional canola meeting in North Battleford on March 6, Kindersley on March 7 or Melfort on March 27. As well, canoLAB will be held in Saskatoon at TCU Place on March 5 and again on March 6. Once spring slides into summer, we will be out and about at the Crop Research Field Days from Swift Current to Melfort, Saskatchewan. It's always great to see our research program in the field and to talk with the scientists who put their time and energy into unlocking the mysteries of crop production. We look forward to seeing you at these events!

Healthy canola oil and a healthy canola organization are our goals for the upcoming year. Have a wonderful seeding and growing season. Until the September issue…

Catherine Folkersen
Executive Director

SASKCANOLA BOARD ACCLAIMS NEW LEADERSHIP

Following the SaskCanola Annual General Meeting on January 15, 2014, the SaskCanola Board of Directors elected Franck Groeneweg of Edgeley, SK as Chair for the upcoming year. He has served as Vice Chair of SaskCanola for the past year and assumed the position of Chair on January 15, 2014. Dale Leftwich of Esterhazy, SK will serve as Vice-Chair.

"I am pleased to accept the Chair position for SaskCanola," Groeneweg stated. "On behalf of the board, I want to thank Joan Heath for all of her hard work and leadership as Chair throughout the past year."

Outgoing Chair Joan Heath said, "It was a pleasure serving the Board in 2013 as Chair and by extension, serving the canola growers of Saskatchewan. Franck and I worked closely together all year as Chair and Vice-Chair and I look forward to his leadership as Chairman. He will do a great job!"

Groeneweg commended all of the board members for their enthusiasm in pursuing leadership positions on board committees. "I am pleased to announce that Joan Heath will continue to serve as the Governance Committee Chair, Stan Jeeves will continue to serve as the Finance and Audit Committee Chair, Brett Halstead will continue to serve as the Policy Committee Chair, Dale Leftwich will continue to serve as the Market Development and Communications Chair, and Wayne Truman will serve as the new Chair of the Research Committee," Groeneweg concluded. ●

2014 DR. KEITH DOWNEY SCHOLARSHIPS ANNOUNCED

SaskCanola is pleased to announce that it will again provide four Dr. Keith Downey scholarships, each valued at $2,000. The scholarships are made available on an annual basis to the immediate family of registered Saskatchewan canola producers who are enrolled in undergraduate postsecondary agriculture education in a recognized Canadian institution in the second, third or fourth years of their program. Information and application forms for 2014 scholarships will be posted on the SaskCanola website on May 9, 2014. ●

CropSphere
Ideas, Innovation, and Knowledge

The inaugural CropSphere conference brought together 824 farmers, industry, government, media and researchers on January 14 and 15 in Saskatoon. During the event, many speakers addressed a broad range of industry issues and provided agronomic and marketing information from holistic and crop-specific points of view.

The opening reception on Monday evening began with an address from Saskatchewan Agriculture Minister Lyle Stewart, followed with entertainment provided by Jay Onrait and Dan O'Toole.

Tuesday's agenda included a breakfast keynote address by Steve Peterson from General Mills. Peterson talked to farmers about where the sustainability trends are originating from and why consumers are asking for more information about food production. Bruce Croxon, entrepreneur and investor from CBC *Dragon's Den*, provided insight during the Tuesday evening banquet on the importance of core values and industry vision for achieving success.

On Wednesday afternoon, the conference was closed by Michele Payn-Knoper, a passionate agvocate and cheerleader for farmers to use social media to share their stories. Other plenary sessions covered weather, transportation, logistics, and a global market scan.

SaskCanola Research Chair Franck Groeneweg, helped by Chris Hozapfel of Indian Head Agricultural Research Foundation, led farmers in an open forum discussion about straight cutting, allowing farmers to share their stories with each other. This session also provided some insight as to how SaskCanola can best serve farmers on this research file.

Overall, the event was regarded as a success – from the high class speakers in the plenary and breakout sessions, to the networking opportunities, and the Annual General Meetings of each of the host groups involved. ●

SAVE THE DATE

Regional Producer Meetings

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

North Battleford – March 6

Kindersley – March 7

Melfort – March 27

Program details and pre-registration can be found at: **www.saskcanola.com**. ●

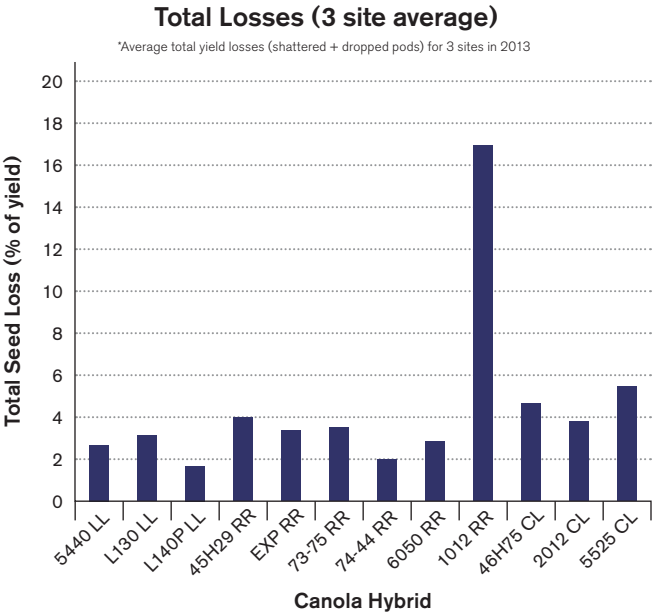
CULTIVAR CONSIDERATIONS FOR STRAIGHT COMBINING

SaskCanola supports research to evaluate cultivars for resistance to pod shatter/drop

Straight combining canola can save time and money and result in improved seed quality. However, timing of harvest is critical to reduce the risk and magnitude of yield losses from pre-harvest shattering and pod drop losses. In a recent research project funded by SaskCanola, preliminary results show losses from current hybrids tend to be quite low, but they can still be high when unfavourable weather is combined with delayed harvest or high disease levels.

Chris Holzapfel, Research Manager with the Indian Head Agricultural Research Foundation (IHARF) in Saskatchewan, initiated the four-year study in 2011 at four sites including Indian Head, Melfort, Scott, and Swift Current. The project evaluated the potential for pod shattering and pod drop among 12 commercial cultivars across all herbicide systems, including some of the new shatter tolerant varieties. Two harvest dates were included, one at the optimal time and the final harvest completed three to four weeks later.

The results are still preliminary, and trials and data analysis will continue in 2014. "Results from three years have shown that significant varietal differences on shattering losses are frequently detected, but not always consistent from site to site. Substantial losses in all cultivars occurred when severe conditions were encountered and the opposite was generally true under more favourable conditions," says Holzapfel. ●



Average total seed losses (dropped plus shattered pods) measured in shatter trays at Indian Head, Scott and Swift Current in 2013. Canola was left standing approximately one full month past the optimal harvest date. Results are considered preliminary at this time and are subject to change as new data is acquired and statistical procedures are applied.

HICKLING RECEIVES CANOLA AWARD OF EXCELLENCE

By Shel Zolkewich

His name is a familiar one in the canola world and now it will grace this year's Canola Award of Excellence presented by the Manitoba Canola Growers Association (MCGA). Dr. Dave Hickling is being recognized for his work with canola meal.

"You've heard of that one litre more per cow per day thing? Yes, I came up with that," says Hickling, with more than a touch of humility in his voice.

Hickling is, of course, referring to his extensive research on canola meal as a feed nutrient, particularly when it comes to its benefits in the dairy industry. After decades of combined studies, the results confirm that including canola meal in a mixed ration for dairy cattle will in fact increase yields significantly over using another protein source (soybean meal, for example).

As canola production around the world increases, Hickling is excited to continue being part of a community that's working to increase the value of canola meal (at least 55 per cent of canola seed is meal). He began his career as a nutritionist with Cargill in Brandon, Manitoba. He then went on to the Canadian International Grains Institute. He has conducted trails in China and Mexico. He joined the Canola Council of Canada in 2002 and recently retired.

"I'm so lucky to be part of this industry," he says. "I've had the opportunity to work on different species, work with processors, and learn about what motivates customers. I've taken a very practical approach with this career, not an academic one. The Canola Council gave me a great opportunity to understand the big picture on canola meal. I feel most fortunate about that."

The MCGA presents the Canola Award of Excellence annually to a person or group who has contributed to the sustained growth and prosperity of the industry. The first award, presented in 2008, was given to Dr. Baldur Stefansson, also known as the Father of Canola.

MANITOBA CANOLA GROWERS BOARD OF DIRECTORS

The Manitoba Canola Growers Association held its Election of Directors, and now welcomes Larry Bohdanovich and Charles Fossay as new members to the board, and incumbents Brian Chorney and Ed Rempel who are returning for another term.

Larry Bohdanovich

Charles Fossay

Brian Chorney

Ed Rempel

GOT HEART? CANOLA OIL PROTECTS THAT AND MORE

By Brittany Farb

New research shows that canola oil may help other chronic conditions, including metabolic syndrome, which affects one in five Canadian adults and one in three American adults.

The known benefits of canola oil are enough to make anyone's heart smile. It has the most unsaturated fat of any common cooking oil, and is recognized by Health Canada as meeting the requirements for a health claim to reduce blood cholesterol. It has a qualified health claim authorized by the U.S. Food and Drug Administration on its ability to reduce the risk of heart disease when used in place of saturated fat. Canola oil is also a good source of omega-3 and monounsaturated fats, vitamins E and K, and it is free of *trans* fat and cholesterol.

Several recent human clinical trials examined the additional health benefits of canola oil. The largest one was the Canola Oil Multicentre Intervention Trial (COMIT), which looked at the impact of five oils (including canola and high-oleic canola oils) on people at risk for metabolic syndrome. Other studies analyzed canola oil's effect on people with peripheral artery disease (PAD) and its impact on blood sugar control and heart disease risk factors in people with type 2 diabetes.

The studies are summarized here. They were funded through the Canola/Flax Canadian Agri-Science Cluster, a joint initiative of Agriculture and Agri-Food Canada (AAFC) and the Canola Council of Canada.

CANOLA OIL BENEFITS WAIST AND HEART

The COMIT, a study of 121 American and Canadian adults at risk for metabolic syndrome, looked at whether consuming certain vegetable oils would be an easy way to reduce the risk of developing this medical condition. It affects about one in three U.S. adults and one in five Canadian adults. Metabolic syndrome is characterized by increased belly fat, low HDL ("good") cholesterol and above average blood sugar, blood pressure and triglycerides – all of which increase the risk of heart disease, stroke and type 2 diabetes.

Participants were given a weight-maintenance, heart-healthy diet with a daily smoothie containing one of five study oils that differed in their fat profiles: canola oil, high-oleic canola oil, high-oleic + DHA canola oil, flax/safflower oil blend and corn/safflower oil blend. The process was repeated for each oil.

Results showed that those who consumed canola or high-oleic canola oils on a daily basis for four weeks lowered their belly fat by 1.6 percent. Abdominal fat was unchanged by the other three oils, two of which (flax/safflower and corn/safflower oil blends) were low in monounsaturated fat (MUFA).

"Monounsaturated fat appears to be responsible for these benefits," says Penny Kris-Etherton, registered dietitian, professor of nutrition at the Pennsylvania State University and one of the lead researchers. "It is evident that further studies are needed to determine the mechanisms that account for belly fat loss on a high-MUFA diet."

Even though the amount of belly fat lost over the four-week intervention was modest, she adds, if this rate of loss was sustained over a prolonged period, it could amount to a sizeable improvement in Body Mass Index. By reducing belly fat, all other criteria for metabolic

"COMIT indicates that simple dietary changes, such as using a high-MUFA vegetable oil, may reduce the risk of metabolic syndrome and therefore, heart disease, stroke and type 2 diabetes."

– Penny Kris-Etherton

syndrome will be improved, including a decrease in blood pressure, blood sugar and triglycerides as well as an increase in HDL cholesterol. As a result, targeting belly fat first is a practical way to decrease risk of metabolic syndrome, especially with co-existing risk factors.

"The COMIT indicates that simple dietary changes, such as using a high-MUFA vegetable oil, may reduce the risk of metabolic syndrome and, therefore, heart disease, stroke and type 2 diabetes," Kris-Etherton concludes.

BLOOD VESSEL DISEASE MANAGEMENT

The study "Effect of Canola Oil on Blood Vessel Function in Peripheral Arterial Disease (PAD)," completed in 2013, was conducted with about 50 people with this disease. It affects more than 10 million people in North America by narrowing and stiffening blood vessels in the legs, which increases the risk of heart attack and stroke five-fold. In fact, those with severe cases of PAD suffer from cramps in the legs that limit walking range due to lack of oxygen.

Participants were randomly assigned for eight weeks to either a canola oil or mixed fat group designed to be representative of the western diet, which is high in omega-6 polyunsaturated and saturated fats. Individuals consumed food items prepared with their study group's oil. Blood vessel function was assessed before and after the study. Other assessments included walking tests on a treadmill, cognitive function, blood cholesterol profiles, glycemic (blood sugar) control, body weight and waist circumference.

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Carla Taylor, professor in the Department of Human Nutritional Sciences at the University of Manitoba, found that incorporating canola oil in the diet could lower LDL cholesterol on top of what cholesterol-lowering medication was already achieving.

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Although participants' body weight did not change during the study, there was a significant reduction of LDL ("bad") cholesterol in the group fed canola oil.

"This is an important finding because a reduction in LDL cholesterol is associated with lower risk of cardiovascular disease," says Carla Taylor, professor in the Department of Human Nutritional Sciences at the University of Manitoba. "It's very interesting that incorporating canola oil into the diet could lower LDL cholesterol on top of what cholesterol-lowering medication was already achieving."

TYPE 2 DIABETES CONTROL

The study "Effect of Canola Oil as Part of a Low Glycemic Load Diet on Glucose Control in Coronary Heart Disease Risk Factors in Type 2 Diabetes" aimed to determine if canola oil improves glycemic control and cardiovascular health in people with type 2 diabetes.

"There really hasn't been any study that looks at canola oil as part of a low-glycemic index diet," says Cyril Kendall, research associate in the Department of Nutritional Sciences at the University of Toronto.

About 125 to 130 subjects in the Toronto area were recruited and assigned to one of two groups for a three-month intervention: a test canola oil diet and a healthy control diet based on American Diabetes Association guidelines.

Results indicated that including canola oil in the diet lowered cholesterol levels, improved glycemic control and led to weight loss. The findings support scientific data on the ability of canola oil to help improve glycemic control and reduce cardiovascular risk in people with type 2 diabetes. From improving cholesterol profiles to reducing belly fat, canola oil continues to prove its nutritional merits. Emerging research shows that canola oil may provide benefits to people with metabolic syndrome or type 2 diabetes beyond its well-established role in heart health.

Brittany Farb is communications specialist at Inkovation, Inc. in Chicago, Ill.

Skillet Quinoa with Black Beans, Cilantro and Feta

Nancy S. Hughes created this quick and easy dish as part of CanolaInfo's 2014 "Fuel up for Fitness" campaign. This is a made-to-order meal for everyday athletes. Quinoa, a gluten-free whole grain, and black beans supply athletes with carbohydrates, fiber, protein and other nutrients that help produce energy, restore cells and replenish nutrient stores. Canola oil keeps saturated fat to a minimum and lets the fresh ingredients shine.

INGREDIENTS

1 Tbsp (15 mL)	**canola oil**
1 cup (250 mL)	**onion**, diced
2 cups (500 mL)	**red bell pepper**, diced
1½ cups (375 mL)	**water**
¾ cup (175 mL)	uncooked **quinoa**
1, 15 oz. can (426 mL)	**reduced sodium black beans**, rinsed and drained
¼ cup (60 mL)	**walnuts**, chopped
2 tsp (10 mL)	**chili powder**
⅓ cup (75 mL)	**feta cheese***, crumbled reduced fat
¼ cup (60 mL)	**fresh cilantro**, chopped
1 medium	**garlic clove**, minced
½ tsp (2 mL)	**salt**

INSTRUCTIONS

1. In large, non-stick skillet, heat canola oil over medium-high heat. Add onion and pepper. Sauté 5 minutes or until onions begin to brown on edges, stirring occasionally. Add water and quinoa. Bring to boil over medium-high heat, reduce heat, cover and cook on medium-low for 12 minutes or until water is absorbed.
2. Remove from heat, stir in beans, walnuts, chili powder, feta, cilantro, garlic and salt. Cover and let stand 2 minutes to heat through and absorb flavours.

Yield: 6 servings.
Serving Size: 1 cup (250 mL).

**Note: For a vegan version, replace feta with vegan cheese or tofu. Leftovers? Add quartered grape tomatoes, a squeeze of fresh lemon juice and a bit more cilantro for an easy meatless entrée.*

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Canola in the tank means money in the bank

When it was time to harvest his canola crop last year, Henning Wubbe, owner of Wubbe Farms Limited, La Riviere, Manitoba, remembered that the previous dry year had resulted in a lot of canola going out of the back of his combines. So he took advantage of a John Deere FarmSight™ service that his dealer, Greenvalley Equipment, was offering.

"With the initial tests, we had 2.71 bushels going out the rear end in canola and by the time the product specialist left, we were under a bushel to the acre," Wubbe says. With 2,000 acres in canola, "That was close to $40,000 (CAN) in market price, so it was a substantial savings. It was well worth it."

To learn more about Henning's story, and others, visit **JohnDeere.ca/RealStories.** Then go see your dealer about putting together a John Deere FarmSight solution for your operation.

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Scan using any QR Code reader app on your smartphone to view the video.

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