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Practical production tips for the prairie farmer

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FARMER PANEL

A GOLDBLOCKS YEAR, AND FEW FOUND IT 'JUST RIGHT'

Early winter, in the middle of harvest, definitely took its toll



By Lee Hart

Here's what you learn when you ask a sampling of western Canadian farmers how 2016 went and what's ahead for the coming seeding season:

- Corn and soybeans did very well in 2016.
- Looking ahead, disease pressure on cereal and pulse crops could change the cropping landscape.
- An early spring would be a blessing considering there is still crop to be harvested and "fall" field work yet to be done before seeding.
- Despite a challenging harvest last fall, a bit of spring moisture is needed heading into the 2017 seeding season.
- And, 2016 was a "Triple Crown" year for grains and oilseeds — high yields, high quality and decent prices.

While there are always some variables across Western Canada, most producers contacted for this Farmer Panel say 2016 had all the makings of an excellent growing season — at or near record yields, pretty good quality. And then in some parts of the West, October happened.

See DISEASE on Page 5 ▶

PHOTO: MYRON KRAHIN

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PLUS

Start thinking about potatoes and tomatoes

The Singing Gardener Ted Meseyton says March is the month to sprout spuds and start seeds **54**

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Is it time to get together?



Leeann Minogue
leeann.minogue@fbcpublishing.com

I've written in this space several times about the newly formed farm commodity groups that collect levies from us to coordinate research and marketing for Prairie crops. We pay levies to organizations for each crop we grow, from canary seed to canola. If this was Iowa and we grew only corn and soybeans, things would be simple. But with pulses, canola, wheat, barley, oats and sunflowers in the mix, things can get complicated, with several different provincial organizations in all three Prairie provinces.

In Manitoba, the board members of these commodity groups are taking some steps that might lead to a simpler system.

At this year's annual CropConnect conference, farmer and consultant Kelly Dobson was given the mic at a keynote session to talk about the potential for merging the Manitoba commodity organizations.

Right now, the process is still at the consulting stage. Manitoba's commodity groups raised the issue at their separate AGMs, and talked about the need for farmer feedback through phone calls, email, or even on Twitter.

To make sure all of the farmers at CropConnect knew why this issue had come to the fore, Dobson took time to raise some of the issues that come with our current levy system.

"The current system funds last year's crops," Dobson said. Levies are paid and collected based on the crops you sell. If you've been seeding canola and wheat, you've been funding those organizations, but not contributing to new research in sunflowers, which could be your next big cash crop. It's hard for new crops to get a foothold in research and marketing under a system like this. Who's funding quinoa market development?

Here's another issue Dobson raised. "It takes the same basic resources to support a

crop, regardless of its size," Dobson said. Whether you're running a canola organization or an oat association, you need someone to answer the phones, someone to keep the books, someone to audit the books and someone to look at research proposals. You'll have to print annual reports and pay the rent for an office to house these staff. These basic administration costs are about the same, regardless of the number of farmers growing the crop in question.

Dobson also said we also have an "ever-increasing board engagement problem." With farm sizes growing, "the available pool of energetic farmers is shrinking." There simply aren't going to be enough farmers with the energy, ability and passion needed to serve on all of these boards.

While Dobson was talking about some form of collaboration among Manitoba's levy-collecting commodity associations, he made it quite clear: "there has been no talk about reducing your levy." And rather than a change that would be a simple merger, he said he was imagining "structure change that would lead to the kind of progress we've never seen before."

The day after the keynote presentation, at the Manitoba Wheat and Barley Growers Association annual general meeting, farmers in attendance passed a resolution to "participate in collaborative initiatives with other grower organizations." (Don't be alarmed, it wasn't all a big festival of hugging. Some MWBGA members forced a vote about a resolution amendment that required a debate about whether members should be called "producers" or "farmers/producer." We'll still have enough chaos in our farmer-funded system to keep things entertaining.)

I don't know how the push to have organizations work more closely together will work in practice, but I'm intrigued and I hope you are too. You can send your comments to your favourite commodity association board member, or to Kelly at Kelly@dobsonleads.ca.

Leeann

AN EMPTY SPOT IN THE COLUMNS

You're sure to notice something missing from the Columns section of this issue of *Grainews*.

Andy Sirski passed away on February 10. We here at *Grainews* are very sorry to have lost a popular columnist and former editor. You'll find a couple of tributes to Andy on Page 6.

I'm sure long-term readers will miss Andy's Off-Farm Income column, and the stock and life advice he doled out in each issue of *Grainews*. GN

Leeann Minogue



FARM SAFETY

Use safety practices to avoid ATV rollovers

All terrain vehicles (ATVs) can be not only useful on the farm, they can add an element of fun to work. Whether using ATVs recreationally or as the best way to get to remote back fields, the Canadian Agricultural Safety Association's "Appealing to Adults" Canadian Ag Safety Week campaign urges farmers to protect themselves against rollovers.

Rollovers happen alarmingly fast. That's why it's important for everyone to take rollover prevention seriously, each and every time they plan a ride.

Always remember to wear an ATV helmet, gloves, long sleeves, pants, and boots, even when only travelling a short distance. Inappropriate gear, such as loose clothing, can get caught on controls and doesn't provide protection.

Next, check over the machine. Make sure you have enough fuel, top up engine oil if necessary, and ensure all brakes, lights and gauges are in good working order. If you're going to be transporting farm supplies, make sure they are properly

tied down. Don't forget to look over any trailer or implement that is hitched to the ATV. Every machine is subject to load limits which can be found in the owner's manual. Remember to consider how that weight is distributed and correct any inequalities.

Any load, even one well distributed, will impact the stability of the vehicle. Drive accordingly. Maintain a speed that can be controlled at all times and look ahead for hazards. Overconfidence, high speed, and steep slopes are the primary contributors to ATV rollovers.

When riding alone, tell someone else what routes you will be taking and when to expect your return. It's a good idea to carry a safety kit that includes a flashlight, some basic first-aid supplies, a sounding device or flares, and take a cell phone or

two-way radio. (Make sure that your communications device will work in the area where you're travelling – cell phone signals aren't guaranteed everywhere.) Plan to be home before dark and in case of bad weather, leave the ATV parked as both low light and reduced visibility increase the chance of a mishap. Don't be tempted to go back for the machine in bad conditions.

Adult-sized ATVs are not appropriate for children under 16. Anyone driving an ATV should receive training. A few hours in an ATV course could save your life. Visit agsafetyweek.ca for more resources including toolbox talks on operating portable augers, safe handling of cattle and more. **GN**

Amy Petherick for the Canadian Agricultural Safety Association.

i Canadian Agricultural Safety Week (CASW) is a public awareness campaign focusing on the importance of farm safety. CASW takes place every year during the third week of March. In 2017, CASW takes place March 12 to 18. CASW 2017 is presented by Farm Credit Canada. For more information visit agsafetyweek.ca.

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Lee Hochstein from Pincher Creek, Alberta, took this photo. He wrote, "The last bin and the last field. What a great feeling. If you look close you will notice the swing auger is overflowing."

Thanks for sharing this, Lee. We're sending you a cheque for \$25.

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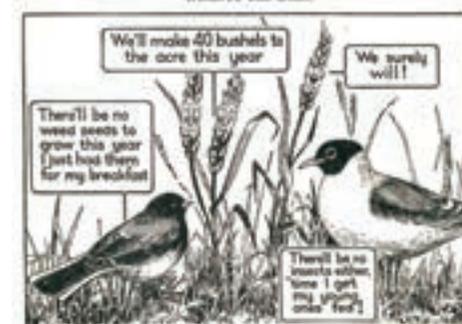
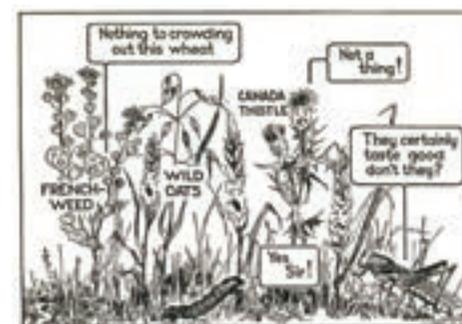
Please send only one or two photos at a time, and also send along some information about where and when you took the photo, or even something about your farm. Photos with larger file sizes look better in the paper.

— Leeann

Noxious weeds are for the birds

Allan Liggins, from Coquitlam, B.C., sent us this image from his 1947 Grade 5 or 6 Science textbook – a diagram that illustrates the advantages of birds. Allan wrote: "The noxious weeds illustrated were French weed, wild oats, and Canada thistle. We still have them, and several others. Notice the wheat was ecstatic about a yield of 40 bushels per acre. Times have changed: tonnes have replaced bushels; hectares have replaced acres (except for us old timers); and 40 is no longer the ultimate yield for wheat, which recently produced double or triple that yield."

Leeann Minogue



SOURCE: The page comes from "Science Activities: Book II," printed in Canada by W.J. Gage and Co., in 1947.

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FARMER PANEL

► DISEASE from Page 1

If you didn't get rain, snow or both in late September and through most of October chances are you had a decent report on the year. But there was a pretty wide swath, especially across central and northern B.C., Alberta and Saskatchewan, where harvest came to a standstill through October. Again in many areas, a decent weather window opened up in November, allowing many farmers to get back in the field with combines. But depending where you farm there could be anywhere from 10 to 40 per cent of the 2016 crop still out in the field, and little or no fall field work done.

As western Canadian farmers take a look back and ahead here is what some are thinking as March arrives on the Prairies.

MYRON KRAHN CARMAN, MAN.

Grain corn and soybeans stood out as exceptional crops for Myron Krahn, who farms in southern Manitoba. He had record or near-record yields and high quality of both crops on his farm near Carman. Wheat and canola weren't as dazzling.

"When you ask what went right in 2016, it is the corn and soybeans that stood out for us," says Krahn, who along with his wife Jillian crops about 3,000 acres as part of Krahn Agri Farms Ltd. "There were a few weather challenges, but both crops did very well. They pencilled out with the best economics of anything we grew, so they will definitely dominate our rotation this coming year."

They've been growing soybeans since 2002 and grain corn "forever." Soybean yields weren't a record, but were "very, very good" and grain corn was a record for their farm at 155 bushels (which was 10 bu. higher than their 2015 record of 145).

Krahn says southern Manitoba appears to be well suited to both corn and soybeans, and the 2016 growing season was almost ideal. It was relatively warm, there was timely, bordering on excessive moisture, but "these newer varieties of corn and soybeans seem to power right through that moisture," he says. "Smaller grains and canola just aren't able to cope with those conditions as well."

"Cereals were not great for us this past year," he says. "The weather didn't suit them and prices were down too. Corn prices aren't that great either, but at least with corn you get the yield."

While early 2017 is bordering on excessive moisture, Krahn hopes it is a dryer spring so he can get the crops planted. Some canola and wheat acres will be replaced by corn and soybeans.

BRAD HANMER GOVAN, SASK.

Brad Hanmer says after a "very difficult" harvest in 2016, the big issue facing his and many other farms in Western Canada is how to manage for increasing crop disease pressures.

Hanmer, who along with family members operates a large-scale farming operation in the Govan area, about an hour north of Regina, says diseases such as fusarium head blight in cereals



Myron Krahn had record or near-record yields of corn and soybean with high quality on his farm near Carman, Manitoba.

(wheat and barley) and aphanomyces, a root rot particularly hard on peas and lentils, could change the cropping landscape in Saskatchewan.

"We had a very big crop last year, there was lots of rain at harvest, it was a real battle to get it off," says Hanmer. "And we did get it off. It required increased handling as well as the added cost to put most of it through a dryer."

"The big issue going forward in 2017 is that there is lots and lots of tough grain around the country affected by fusarium head blight that now carries vomitoxin and what are farmers going to do with that?"

After successive wet seasons, Hanmer says the disease pressure on cereals is building and the technology is, so far, not available to help farmers manage their way through it. Improved cereal varieties with genetic resistance to FHB are needed, as well as more effective fungicides. Hybrid wheats, which so far aren't available, are another option.

"And fungicides are effective to a point," he says. "They can control most of the fusarium. But when you are marketing this grain and the threshold tolerance for vomitoxin is one ppm and your sample has three ppm, what do you do with that?"

Hanmer says there are some management options such as replacing durum and soft white wheat acres, for example (those are wheats with longer flowering periods), with more hard red spring wheat (HRS has a narrower flowering period, which makes it slightly less susceptible to the disease) but that's only a partial solution.

"If the market wants to pay me \$15 per bushel for durum, I can produce durum free of vomitoxins," he says. "But the market isn't doing that. To produce wheat that is free of fusarium requires multiple treatments with fungicide. As it stands now even just one treatment doesn't pay. In my books we have a broken model."

Similarly he says wetter growing seasons are increasing the level and prevalence of aphanomyces root rot in peas and lentils. "The disease is like putting a plastic bag around the roots of your crop," he says.

Hanmer says until solutions are found for these diseases, crop rotations will change. "With fusarium maybe I can grow more hard red spring wheat, or maybe I

just don't grow wheat at all," he says. "And with aphanomyces affecting peas and lentils, that pushes me to look at other crops such as soybeans, which seem to do very well in these wetter conditions and they aren't susceptible to aphanomyces. With the disease pressure on cereals and pulse crops, the oilseed complex is looking very promising."

GERRID GUST DAVIDSON, SASK.

Gerrid Gust is giving up on growing durum wheat in 2017. The fourth-generation farmer says fusarium head blight in durum has been bad and increasing over the past three years — 2016 was a wreck.

"The big hit upside the head we had last year again was fusarium," says Gust. "So we are all but giving up on growing durum in this part of Saskatchewan. Last year we had 7,000 acres of durum and not one bushel made grade. It was loaded with fusarium and vomitoxin." Working with a broker, Gust was able to move most of the durum into livestock feed markets, but he also had a few truckloads so heavily infected with disease, they were just dumped.

Gust, who along with family members crops about 14,000 acres total, says wet weather and disease took a toll on both durum and red lentils last year, so he's changing his rotation for 2017.

He'll be switching most of his cereal acres to a hard red spring wheat variety, AAC Brandon, which is high yielding, with good agronomics, and decent resistance to FHB. The Gust farm hasn't grown a hard red spring wheat for about 15 years.

Along with hard red spring wheat, the 2017 crop rotation will include more acres of winter wheat and fall rye seeded in the fall of 2016. And this spring he'll be seeding soybeans for the first time, and increase canola and yellow pea acres. And he does have half a section that hasn't had a cereal crop for several years, so he may seed that to durum to see how it does.

"This has been one of the better durum areas, but we just have to back away from it due to disease pressure," he says. "We did everything we could with proper agronomics and seed treatments, treatments for leaf disease and for fusarium and it still isn't enough. We'll have to hope plant breeding comes up with resistant varieties."

TODD HAMES MARWAYNE, ALTA.

The 2016 growing season had all the makings of one of the best years in a long time, says Todd Hames who farms in northeast Alberta, and "then came a harvest season we will never forget," he says.

Hames, who farms at Marwayne near the Saskatchewan border, says he managed to get most of his crop harvested in late August and earlier part of September and then came the rain and snow which persisted through most of October.

"It was very challenging," says Hames, who along with his family crops about 5,000 acres. He did manage to get everything combined. "Timing seemed to be everything. We'd have two or three days in a row that were pretty good, so if you were ready you might get a bit done before you were shut down. But if you had a breakdown just as those good days hit, you were out of luck."

Overall the yields were very good and quality, up until the weather changed in late September, was also very good. He says the year started out with an early spring, followed by timely moisture "and July wasn't too hot, which really helped too. You don't want it cool, but if it's warm without that heat blast, crops really respond to that."

Hames says he feels fortunate because just a few miles to the west there is unharvested crop still in the field.

With a continuous cropping, direct seeding operation, Hames says he doesn't plan any major changes in his canola, spring wheat and yellow peas rotation. While there is decent subsurface moisture, there is little snow cover this winter, so more snow or spring rains might be needed for seeding. "There's still time for that," he says. "I always have to remember that I haven't lost a crop yet in January or February or even March for that matter."

JOHN BERGER NANTON, ALTA.

John Berger, who farms about 5,000 acres with his son Brad at Nanton, south of Calgary, says they had a great year in 2016.

Berger, who was interviewed for another feature on his herbicide program elsewhere in *Grainews*, says they like to start their weed control program in the fall, which helps to prevent yield losses due to an early weed flush in the spring. And they like to seed early.

Those factors helped to contribute to a successful cropping season, he says. "This past year (2016) I say we had the Triple Crown with excellent quality, high yields and a decent price," he says. "We had everything off before the end of September. I am really happy with the program we're following. I'm not sure how we could make it better." GN

Lee Hart is a field editor with Grainews based in Calgary. Contact him at 403-592-1964 or by email at lee@fbcpublishing.com.

IN MEMORIAM



HOW TO BE AN EDITOR

Another former editor, Cory Bourdeaud'hui remembers Andy Sirski

By Cory Bourdeaud'hui

"Sirski."

That's how Andy answered the phone.

Andy Sirski was editor of *Grainews*. He retired in 2006 after 27 years with *Grainews* and passed away in February.

Andy loved gardening, cigars and making wine but those weren't his true loves in his life.

The first was his family.

Andy drove and fixed old cars. They were Datsuns because they were easy to fix and fairly easy to find. I think he had five in his yard in Winnipeg at one time and three were used for parts. He didn't care what they looked like and he said he did this so his wife Pat could stay home and raise their five children. That was important to them. He did a lot of things that most people wouldn't do in order to give a family of seven some additional cash flow with only one income. For example, he also had a paper route for years and did tax returns on the side.

The second love of his life was farming. He loved the farm and talking to farmers. Being the editor of *Grainews* allowed Andy to have contact with farmers from across the Prairies. He welcomed their calls and didn't mind when they called late at night. He understood that there was work to do on the farm and farmers didn't have time during the day to call him to comment on an article they read in *Grainews* or ask for his advice. Since he hired me mainly to talk to farmers and share their ideas with *Grainews'* readers, he allowed me to work from home so I could make these connections at night. The added bonus was that I could spend some time with my young family and not just be there at 6 p.m. every evening. "As long as the work gets done, I don't care when you do it," he said.

Andy's third true love was stock trading. He enjoyed trading stocks and the bonus was that it gave him another source of income. He called trading in the stock market his "off-farm" income. I don't think Andy found any of his "off-farm" income was extra work.

At first, he made and lost small fortunes. He called that his tuition. In the last 25 or so years he was looking for ways of taking out the highs and lows of trading stocks by using sell signals and rules that he developed. He even-

tually discovered covered calls, which limited his gains but also limited his downside risk. He shared all his wins and losses with *Grainews* readers. In retirement he started his own stock newsletter. Farmers who read his off-farm investment columns and would call to complain that stock trading was just too risky, Andy's answer would be, "And farming isn't?"

Back to *Grainews*. He wanted to make sure each article in *Grainews* did, as he called it, the three As: applied, appealed and advanced. Later he added an extra thing that a *Grainews* article must be, which was a must read. By making sure every article possible followed these rules, he knew he would help farmers. Andy wanted *Grainews* to be another tool in a farmer's tool box.

The only exception to the three "A" rules were the jokes he liked to run in *Grainews*. Life can't be all work all the time, right? He used Betty, our receptionist back in the UGG days to see if a joke crossed a line. Betty would tell him if a joke he wanted to publish would get him into trouble.

He was a good writer but he was a fantastic headline writer. He wanted to make sure that *Grainews* readers would know exactly what they would learn in the article by just reading the headline. You'd think he wanted clear, concise headlines because farmers are busy and he didn't want them wasting their time reading an article that might not fit their farm.

That's not why he wanted to re-write every headline.

He didn't want farmers to miss an article that would apply to their farm because of a poorly written headline. "Farmers are busy and might not know from the headline that this article will help them in some way," he would say. So he changed (Andy would say "change" is not the right word to use here. The right word would be improved) a lot of the articles by simply using in the headline the words "How to" or "10 ways." By doing this a *Grainews* reader knew immediately what the article was going to cover and could decide quickly if they should invest five minutes of their precious time.

Andy told me early on in my *Grainews* career that when you talk to a farmer about weed control, or his latest mechanical improvement or grain futures and options, that every detail, no matter how small, don't leave out. If the farmer told you he sprayed a grass herbicide, ask him, which one

and at what rate? If the farmer used a piece of angle iron to fix a piece of machinery, make sure you ask him, what length and what gauge? Andy wanted to make sure that the *Grainews* reader could go into his shop or field or on his computer and use what they just read to improve their farm somehow. And he didn't want them to have any questions about the process even though he would have loved to hear from them. If a reader decided to invest their time in a *Grainews* article, Andy wanted to make sure they got what they expected.

I told Andy once that he wanted these articles – with every small detail – to read just like a recipe. He smiled and said, "Exactly." The student was learning.

It would be a crime if I didn't take a second here to mention Andy's overall farm financial plan that he developed called the five-legged stool. Basically, the stool represents your farm's and your family's financial health. Every leg that you could add to your stool meant that your financial situation was more stable. Have five strong legs on your stool and you'd have no trouble doing all the things you wanted to do, financially, in life. He felt that a properly built five-legged stool would give you the financial freedom that seemed so elusive to many farmers he talked to. If the farm was the only leg on your stool, you were going to have trouble.

In honour of Andy, the five legs are: the farm; another skill; insurance; off-farm investments such as stocks; and education savings for children.

Andy hired me straight out of university to be a senior writer for *Grainews*. I took the ag diploma course at the U of M, not journalism but he hired me anyway, without any writing experience or training. He said he turned a lot of people, including a lot of farmers, into writers who said that they couldn't write at all. He told me, "You have no problem carrying a conversation so if you write like you talk, you will be just fine." I remember it took me three weeks to finish my first article in *Grainews*. So I guess Andy also had patience. This was back in 2000 so the topic of fusarium, vomitoxin and DON levels were on a lot of farmers' minds. I wrote a long headline and a wordy lead. Andy shortened it all. The first word I ever published in *Grainews* was "OK." Funny the things you remember.

Andy wrote all his stuff out in long-hand. He had a typesetter who would read

Memories of Andy

Les Henry

It is with a sad heart that we learn of the loss of Andy Sirski. I knew Andy best as editor of *Grainews*. It was my pleasure to meet Andy in Winnipeg many years ago. He picked me up at my hotel with an old car he kept perfectly maintained himself, and treated me to steak and eggs for breakfast on the way to the *Grainews* office.

He always took great interest in his scribes and even after he went on to other ventures he took time to phone each of us, just to chat and see how we were doing. Andy was a self-taught stock trader who also taught many others how to manoeuvre a very risky business. I especially liked his "sell half" rule in uncertain times. If you sell half and it goes down you are happy you sold half. If you sell half and it goes up you are happy you kept half.

Andy was a "glass half full" kind of guy and will be missed by many.

through his copy and get it on the page that we could publish in *Grainews*. It wasn't unusual for his "Wheat and Chaff" writings to be over 30 pages long. If we didn't have room, he would publish the items that were time sensitive and the rest would be held over until the next issue.

He made sure in every issue of "Wheat and Chaff" that he would remind readers to be careful on the farm because your family needs you and loves you. Andy would give away little heart-shaped stickers with "Please be careful. We love you. Your family." written on them. He'd ask readers to send him their address so he could send them out so they could stick them on their tractors and combines. He knew what was really important and what was not. His heart was always in the right place.

His signature ending to every "Wheat and Chaff" was one word longer than his signature answer to a telephone call – "God Bless."

Same to you Andy. GN

Cory Bourdeaud'hui took over the *Grainews* editor's role from Andy when he retired in 2006 and is now the director of sales for Glacier FarmMedia.

CROP PRODUCTION

Back to the agronomy basics in canola

Experts advise growers to focus on quality seed and nitrogen before less conventional inputs

By Melanie Epp

Canola growers have been asking agronomists questions about promoted products. Do they work? And if so, are they worth the additional cost? Two researchers, Murray Hartman, oil-seed specialist with Alberta Agriculture and Forestry, and Neil Harker, research scientist, weed ecology and crop management, Agriculture and Agri-Food Canada, conducted a study to test the inputs that were questioned most. Their conclusions may come as a surprise to some.

"Farmers were concerned that products were being promoted without good independent data to back up their efficacy," said Hartman in a recent interview. "So it came from the growers, not the scientific community."

In talking with the Canola Council of Canada's agronomists, Hartman and Harker were able to put together a list of products that were questioned most. The list included nitrogen (applied at 75, 100 and 125 per cent of best management practice recommendations), foliar stress relievers, boron, a seed primer treatment and a fortified foliar fertilizer supplement. The study also looked at increased seeding rate to see if it would result in increased yields. The seeding rate was 100 seeds per square meter, fertilized according to soil test recommendations, said Hartman.

Planting 100 canola seeds per square meter led to an average plant density of 56 plants per square meter. Where 25 per cent less nitrogen was applied in a sideband at seeding, flowering and maturity time were both slightly decreased. Where 25 per cent more nitrogen was applied as a liquid foliar treatment, yields were greater. Similarly, where 25 per cent less nitrogen was applied in the sideband at seeding, yields were lower. Interestingly, the research showed that canola yields were economically optimized in the BMP treatment with recommended nitrogen rates.

HIGHER SEEDING RATE DIDN'T INCREASE YIELD

What will perhaps surprise some growers is that increasing seeding rate did not increase yield. Increasing seeding rate to 150 seeds per square meter did decrease the percentage of green seed by almost one per cent. "On the Canadian Prairies this decrease in green seed levels has important quality, grading and price implications," said the final report.

In assessing seed oil concentration, the researchers found that increasing and decreasing nitrogen often increased and decreased concentrations respectively. However, it had the opposite affect on seed protein concentration.

"We weren't surprised by most of the results," said Hartman. "But we were a little surprised that we didn't get an increased yield by increasing seeding rate."

What about the additional inputs

promoted as yield increasers? Hartman said that some growers might be surprised by those results as well. None of the less conventional inputs tested had any impact on canola emergence, days to flowering, days to maturity, yield or quality, said Hartman. While boron seems to have a good market share — Curtis Rempel, vice president of crop production and innovation at the Canola Council of Canada, estimates that a quarter of canola growers have tried a boron product on at least some of their canola

acres at some point — its use doesn't seem to be justified.

"It's pretty rare to get a boron response," said Hartman. "I do think because guys are using these products there obviously should be some surprise that we don't get a general response. And maybe they should rethink their decisions."

A research report by Nicole Philp, agronomy specialist with the Canola Council of Canada, also concurs with those findings. Her report said that three years of small plot boron trials do not show any

consistent benefits to yield or quality in canola. Furthermore, a one-year field-scale trial showed no significant yield difference when boron was applied at various soil pH and organic matter levels.

So what can canola producers do to ensure quality and yield? "We can't control the weather," said Hartman. "That's when the high yields happen, when the weather cooperates."

Some flexibility, he said, comes from variety choice, but it's still the standard practices that help ensure

quality and yield. "Early and good weed control, and adequate fertility of you macronutrients, so nitrogen, phosphorus and sulphur are the big key [ones]," he said. "If you do that, you're probably going to maximize yield, especially an economic yield. And the rest of the stuff, it's unlikely that it's going to have an excellent response."

"There's no magic bullet," concluded Hartman. "Just well-established agronomy." **GN**

Melanie Epp is a freelance farm writer.

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CROP ADVISOR'S CASEBOOK



Bethany Wyatt works for Richardson Pioneer Ltd. in Weyburn, Sask.

DEALING WITH DAMAGED DURUM

By Bethany Wyatt

Don's 3,000-acre mixed farm can be found south of Weyburn, Sask., near the U.S. border. He called me last June after he discovered patches of yellowing durum wheat plants in his field.

Don had sprayed the crop at the three-leaf stage with a tank mix of Groups 1, 2 and 4 herbicides to control grasses and broadleaf weeds. Now, two weeks later, he was concerned about patches of injured plants scattered across his field.

"After I sprayed my durum, the crop seems to be set back and yellowing in patches," he told me. I immediately set out for Don's farm, as I was concerned the plants had suffered some form of herbicide injury.

From the road, the field looked much worse than it was, because most of the yellowing plants were, in fact, the dying wild oats. The herbicide tank mix Don had sprayed had worked well.

Overall, I estimated about 10 per cent of the wheat plants were affected, while the majority were healthy.

Up close, I observed the wheat plants' leaf margins were yellowing, and some, to a lesser degree, had a reddish-purple tinge. The plants' leaf veins and mid-ribs remained greener than the rest of the leaves.

I found the yellowing wheat plants in patches, scattered throughout the field, and injured plant patches were found next to healthy ones.

My initial concern was Don's wheat had suffered a herbicide

injury, but I ruled this out at once because the damage occurred in patches scattered randomly throughout the field, and only a small percentage of the crop was affected.

Because Don's fertility program was adequate for the crop's needs, I also eliminated a nutrient issue as a possible cause of the yellowing leaves. In addition, the region's growing conditions this season, so far, were good, so I didn't believe any environmental stressors were affecting the crop, either.

However, these symptoms — the leaf yellowing, low percentage of affected plants, and restriction of injured plants to patches scattered randomly throughout the field — were textbook for a certain wheat disease.

"Do you know if you have any winter wheat crops nearby?" I asked.

"Sure is," said Don. "There's a neighbouring field just west of here."

That confirmed it for me.

If you think you know what disease is damaging Don's durum, send your diagnosis to *Grainews*, Box 9800, Winnipeg, Man., R3C 3K7; email leeann@fbcpublishing.com or fax 204-944-95416 c/o Crop Advisor's Casebook. The best suggestions will be pooled and one winner will be drawn for a chance to win a *Grainews* cap and a one-year subscription to the magazine. The answer, along with reasoning that solved the mystery, will appear in the next Crop Advisor's Solution File. **GN**

Bethany Wyatt works for Richardson Pioneer Ltd. in Weyburn, Sask.

Casebook winner

The winner for this issue is Christian Autsema from Roseisle, Manitoba. We're sending him a *Grainews* hat and a one-year subscription to the magazine. Thanks for reading and entering, Christian!

You could be a winner too. If you know the answer to this issue of Casebook, email me at Leeann@fbcpublishing.com. Leeann Minogue



The wheat plants' leaf margins were yellowing, and some, to a lesser degree, had a reddish-purple tinge.



After Don sprayed his durum, the crop seems to be set back and yellowing in patches.



The yellowing wheat plants were in patches, scattered throughout the field.

CROP ADVISOR'S SOLUTION

Nothing other worldly about these crop circles

By Josefina Bartlett

Jim owns a mixed grain farm near Fairview, Alta. The morning after he finished swathing his last canola field in early October last year, he stopped by our office for a coffee. He'd found something interesting in his field, and he wanted me to have a look.

Jim showed me several photos with perfectly-shaped crop circles scattered throughout the last field he'd swathed.

"Maybe it's aliens," he joked. After we had a good laugh, he asked me

what I thought had caused them, and if I could suggest a way to get rid of them.

The circles varied in size. Most were small (centimetres in diameter) and a few were large (metres in diameter). Plants were stunted or missing altogether at the circles' edges and inside the smallest circles. Meanwhile, plants appeared to be less affected in the few large circles, or had already recovered from whatever was stressing the crop.

Jim had noticed the crop circles when he entered the field to swath. Since the field was previously used as pastureland, he thought salt blocks

might have caused the circles. But after considering this theory for a few moments, he realized there were too many circles for the damage to be caused by salt blocks.

I also curbed Jim's other suggestions of soil salinity, shelters or straw beds because I had already discovered what was the real cause of the crop circles in one of Jim's photos.

While taking a break from swathing to stretch his legs, Jim had taken some excellent photos of the circles, including close-ups. In one, Jim had photographed whitish-grey-coloured mushrooms growing

around the crop circle's edge — these were a dead giveaway. Fairy rings were the answer to Jim's crop circle conundrum.

Fairy ring fungi grow in the soil absorbing nutrients. The fungi move outward as soil nutrients are depleted, creating circular shapes called fairy rings.

Unfortunately, there wasn't much Jim could do about the fairy rings in his crop. These fungi are almost impossible to eliminate. His best option was to wait it out.

In other sectors, such as the turfgrass industry, it is thought the

active ingredients in some fungicides act on these fungi, but there is no actual data to prove it works in cereal or canola crops. Furthermore, applying fungicide often doesn't pencil out. Because fairy rings do not, generally, cause yield reductions, there is very little research conducted on this subject.

In the end, although highly entertaining, Jim's crop circle damage looked worse than it was, as the effect on yield was negligible.

Josefina Bartlett works for Richardson Pioneer Ltd. in Fairview, Alta.

LETTER FROM EUROPE

Grasshopper burgers are on the menu

Insect burgers will soon be on sale in Switzerland. But they may not be for everyone

By Marianne Stamm

In Sunday school we kids were taught that John the Baptist ate grasshoppers and honey. “How gross,” we thought. We didn’t know that John the Baptist was way ahead of his time.

Folks find it repelling when I tell them of the piles of dried caterpillars and grasshoppers for sale at Zambian food markets. Well, while better known as a continent behind the developed world, for once Africa is ahead of us. Insects and caterpillars — and fly and moth larvae! — are the food of the future. The very near future too.

Coop Switzerland just announced the launching of a new line of food products made from insects — the insect burger and insectballs. I thought I wasn’t seeing right. I’m getting used to all the vegan, not just vegetarian, products on grocery store shelves. I almost feel I have to apologize for enjoying a good piece of red meat. This insect trend isn’t just about poor animals that get killed so that I can enjoy dinner though. I’m told it’s about saving our environment, about the future of our earth for our children, about being able to produce enough food for a growing global population.

So I did some research on the Internet. Next time you have a grasshopper infestation, think about them as free food. Grasshoppers contain between 15 and 20 per cent protein, depending on the type and stage they are in. They’re supposed to be crunchy and tasty if fried. If it’s protein you’re after though, thick fat caterpillars, like the ones on the market in Zambia are king.

One hundred grams of caterpillars provide 20 per cent protein and lots of iron and vitamin B, according to Charles Bryand, “How entomophagy works,” at HowStuffWorks.com. Insects and caterpillars require at least four times fewer resources to produce than meat. As the world population continues to expand, I can see how that could become more important. I even found a site that teaches you how to grow them yourself.

BUT ARE THEY SAFE FOR CHICKENS?

On December 16, 2016 the Swiss Department of Food Security announced that the new food security law coming into effect on May 1, 2017 declares grasshoppers, mealworms and crickets safe for consumption by and sale to human beings.

While insects are deemed safe for humans to eat, at the same time the Swiss parliament was given the mandate by the government to set up research projects investigating the safety of insects and larvae for animal feed. Isn’t research usually done on animals first then on humans? The discrepancy has to do with the fact that Switzerland is fairly autonomous in its food safety

laws, but when it comes to animal feed it must comply with European Union laws. The EU won’t be releasing insects and worms for the consumption of animals for some time. There are too many technicalities within the existing laws. In those, worms and insects are still treated as pests, for example as signs of poor hygiene in butcher shops.

So in the meantime the Swiss will join the Zambians in enjoying a feed of caterpillars and grasshoppers.

Our cats and dogs will too, but our chickens may not have worms in their feed. Should they be forbidden to pull them out of the grass too? Now we’re in a quandary. Chickens with access to grass (and worms) demand a higher price...

For me, larvae conjure up images from my childhood, of hordes of thick fat white fly larvae crawling around the not-quite-burned-enough carcass of the cow Dad butchered in summer. I’ve decided that I will turn vegetarian and cook

with lentils and chickpeas as the Indians do before I will eat larvae. I’ve tasted cold fried caterpillars and wasn’t duly impressed. On the other hand, I’ve often thought that grasshoppers fried crunchy with honey would be worth a try! But as long as there still is good and affordable meat on the market, I intend to enjoy it. **GN**

Marianne Stamm is a freelance farm writer from Jarvie, Alta. Email her at marerobster@gmail.com.



PHOTO: TWITTER

Coop Switzerland posted this photo on Twitter. The Coop will be partnering with Essento to offer insect-based burgers.

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CROP PROTECTION

Producers focus on herbicide rotation

Farmers figure it's better to avoid herbicide resistance than manage around it

By Lee Hart

John Berger and Spencer Hilton are southern Alberta farmers doing all they can as part of their crop and herbicide rotation programs to reduce the risk of weeds developing herbicide resistance.

Berger, who along with son Brad, crops about 5,000 acres near Nanton, south of Calgary, actually stockpiled some particularly effective chemistries when Monsanto sold a couple of its product lines, just to make sure they didn't run out.

Hilton and his wife Lynne, and son Dane, along with his brother Sterling Hilton and his wife Lianna, crop around 12,000 acres east of Calgary. For several years they reluctantly used fall-applied herbicide products that didn't really fit with their conservation farming objectives. But now in a new era for old products, lightly incorporated granular herbicides are a regular part of their routine.

The objective for both these producers is to use a wide range of herbicide products, with different modes of action, to reduce the reliance on glyphosate and popular Group 1 and 2 herbicides. They aren't shifting their focus to specific products, but rather using a wider range of herbicides as needed to avoid herbicide resistance. If, for example, reliance on one herbicide group can lead to resistance in 10 to 15 years, by using two, three or more different modes of action the risk is reduced exponentially. And hopefully in that wider window researchers may discover new modes of effective herbicides.

Neither farm family is dealing with herbicide resistance issues and they want to keep it that way. Berger says he may have one patch of herbicide resistance wild oats in a field near a roadway and he is intent to eliminate that. Hilton says he is not aware of any herbicide resistance weeds, but after recently buying more land or "if you rent land," he can't take anything for granted.

Important tools for these farmers in their bids to avoid herbicide resistance are older fall-applied chemistries now marketed by Gowan Canada that still have a fit. Both producers are committed to soil conservation and direct seeding farming practices, but a light harrow in the fall to ensure the granular products make soil contact still leaves plenty of cover on the field.

JOHN BERGER NANTON, ALTA.

A few years ago when John Berger learned Monsanto was selling its long-time Avadex (Group 8) and Fortress (Groups 3 and 8) herbicide products he laid in a supply.

"We never really have stopped using them," says Berger. "Quite

often if we had a particularly bad patch of wild oats we would do a spot treatment with Avadex — apply it in the fall. And depending on how many wild oats were in the seed bank it was quite effective. So when we saw that Monsanto was discontinuing the products we stockpiled quite a bit of Avadex and Fortress, in particular, and just used them in special circumstances."

Now that Gowan Canada has taken over the products, available in granular formulation, Berger says they use them more widely over the farm.

"We found over the years, particularly if you have a heavy infestation of wild oats, by the time you can use an in-crop treatment you've already lost yield," he says. "So if we can use these products in the fall to knock weeds back before they start growing, we are preventing that early yield loss... and it is a different mode of action."

Depending on weed pressure and crop rotation, Berger uses Avadex and Fortress mainly for wild oat control in cereals (although they can be used with all crops). He also uses Edge (Group 3 and a former Dow product) to deal with kochia. Edge has a good fit ahead of pulse and oil-seed crops. And after recently learning that Treflan (a Group 3 former Dow product) is now available in Gowan's new smaller MicroActiv granular formulation it may have a fit as well.

Berger applies the granular products in the fall using a Valmar spreader mounted on a heavy harrow. He uses a light harrow setting just to make sure the granules make soil contact. In spring he applies a glyphosate treatment pre-seeding and follows that with in-crop herbicide treatments as needed.

"Our main concern is to use different herbicides with multiple modes of action to reduce the risk of herbicide resistance," he says. "And it also provides very effective weed control. We like to seed early in the spring which produces good results. This past year (2016) I say we had the Triple Crown with excellent quality, high yields and a decent price."

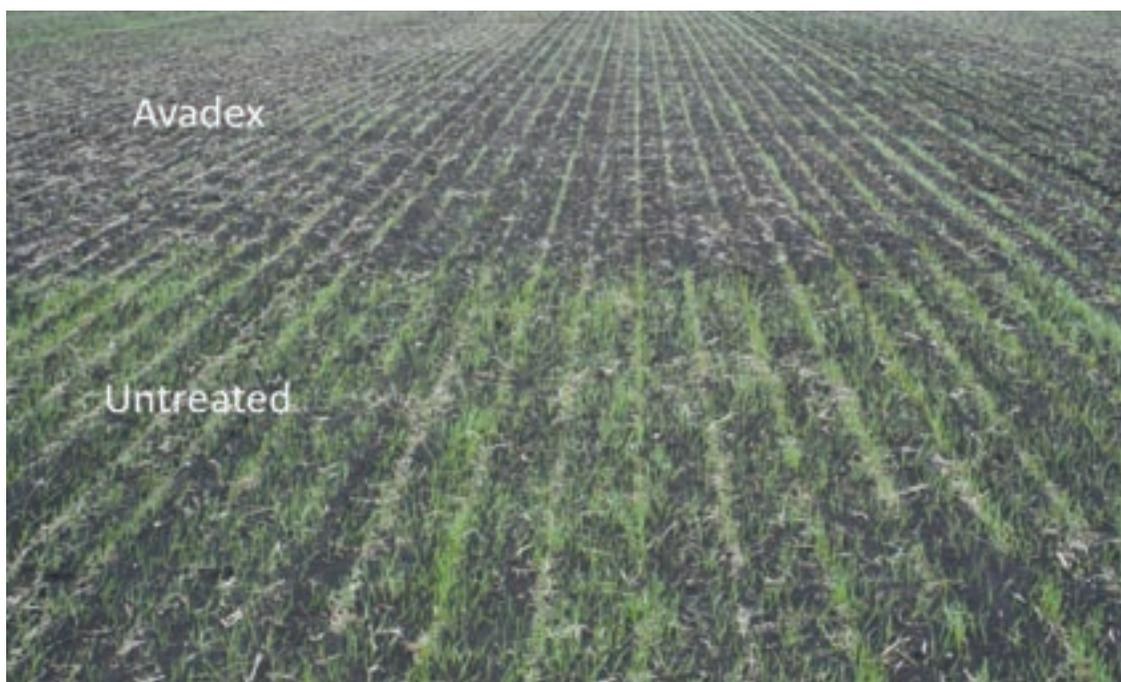
SPENCER HILTON STRATHMORE, ALTA.

As part of a pioneering soil conservation farm family in southern Alberta, Spencer Hilton says as they moved toward a minimum till, direct seeding system over the past 20 years at times he's had almost a love/hate relationship with granular herbicides. He liked or loved that they were effective, but he didn't like the tillage they required.

"Years ago when we were using a product like Edge it had to be incorporated three or four inches deep and it was recommended that we make multiple tillage



John Berger of Nanton, Alta., stockpiled some granular herbicides to make sure the tool was available for proper herbicide rotation.



John Berger of Nanton, Alta., stockpiled some granular herbicides to make sure the tool was available for proper herbicide rotation.

PHOTO: COURTESY CANOLA COUNCIL OF CANADA

PHOTO: GOWAN CANADA

PHOTO: GOWAN CANADA

passes to ensure it was incorporated," says Hilton. "That really didn't fit with soil conservation farming objectives.

"Tillage was an issue, and as the farm grew it also became another field operation, speed and efficiency became more important, handling granular product could be cumbersome, it was another cost, and generally it was a pain in the butt, so overall we felt it was much easier to just spray."

Hilton says as pre-seeding glyphosate and other in-crop herbicide products entered the scene, he "begrudgingly" kept using the fall-applied granular products as needed. Even before it was recommended, he began to back off the degree of tillage.

"As we carried on with minimum tillage practices, conditions changed too," says Hilton. "We used to incorporate products deeply to reach the weed seeds. But after years of direct seeding, now the seed bank of wild oats and green foxtail, for example, are really in the top inch of soil. So a shallower incorporation can get these products where they need to be."

In more recent years, with products that now can work quite effectively with a very light soil incorporation, Hilton is definitely back into a "like mode" with fall-applied weed control products. They are effective for weed control, and help reduce the risk of herbicide resistance. Avadex and Fortress have the best fit in Hilton's grain and oilseed cropping rotation — they are looking at bringing pulse crops back into rotation too.

"In our planning we pay attention to crop rotation, but we also pay a lot of attention to herbicide rotation, as well," he says. "We start thinking about this in mid-summer. What products have we used this year or in the past couple years and now what should we be planning to use for the next cropping season ahead? We don't want to apply more products, but different combinations of products with different modes of action, so we're not having back to back years of the same chemistry.

"As we look at our herbicide rotation, if we've used a Group 1 or Group 2 product one year, then we look at using Avadex, which is a Group 8, or Fortress which is Groups 8 and 3. What is the best herbicide rotation for each field? I try to use as many groups as I can." Hilton also keeps fungicide rotation in mind when treating crop diseases.

Hilton fall applies granular products, after mid-October, with a Valmar broadcast applicator mounted on a heavy harrow. Again, he wants just enough activity with the harrow tines to rattle herbicide granules through crop residue so they make contact with the soil surface.

In spring, he starts out with a pre-seeding burnoff product like glyphosate that may be tank mixed with something else for extra activity and that's followed by in-crop herbicide treatments as needed.

"Using the granular herbicides probably is costing us a bit more

in our overall crop protection program — it is another field operation and the products do cost," he says. "But, I also think a proper herbicide rotation is our best defence against herbicide resistance. I guess it is a case of either we can pay now or pay later. But dealing with herbicide resistance can be very expensive, especially when it starts to affect yield."

INCREASED AWARENESS IN ROTATION

Brad Ewankiw, marketing manager for Gowan Canada says as more producers consider their herbicide rotations, the company has seen a significant increase in sales in the "older" chemistries found in Avadex, Fortress, Treflan and Edge.

With 2015 surveys showing Group 1 and 2 herbicide products are used on about 74 per cent of wheat acres and 61 per cent of barley acres, sales of some of their brand name products, with different modes of action, have more than doubled in the past three years. Gowan has been marketing Avadex and Fortress for about 10 years and about a year ago acquired Treflan and Edge. It's the same chemistry as the original products, but some have been reformulated into a smaller Mico-Activ clay granule, providing better soil coverage. Treflan this year will be available either as a liquid Treflan EC or as a MicroActiv granule.

Avadex stands as a leading product for wild oat control in

cereals. Fortress has a good fit in front of canola providing control of a number of grassy weeds as well as some broadleaf weeds. Edge works well ahead of pulse and canola crops with strength in controlling a number of grasses as well as clevers and kochia. And depending on weed pressure, Treflan is a good base product providing suppression of wild oats and some broadleaf weeds, which later helps in-crop herbicides be more effective with control.

"More producers are looking for products that are not only effective, but offer different modes of action," says Ewankiw. He also notes there is flexibility in applying the granular herbicides. Fall application probably has the best fit for workloads, but if harvest is

delayed they can be spring applied, provided they are on two weeks before the crop is seeded.

"Feedback from across the industry shows farmers are becoming more aware of the need to act rather than re-act in terms of herbicide resistance," he says. "Our message to producers, for the sake of a proper herbicide rotation, we don't want people to overuse ours or any product. If possible use these Group 3 and 8 products once every four years. That way too, the cost can be amortized over the cycle of the crop rotation." GN

Lee Hart is a field editor with Grainews based in Calgary. Contact him at 403-592-1964 or by email at lee@fbcpublishing.com.

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CROP PROTECTION

Oats not affected by pre-harvest glyphosate

Despite buyers' concerns, variety and environment have more impact than glyphosate

By Lisa Guenther

In the spring of 2015, Grain Millers announced they wouldn't buy oats that had been treated with pre-harvest glyphosate. Christian Willenborg was alarmed.

"I was alarmed because I really hadn't heard of an issue. I hadn't seen an issue," said Willenborg, assistant professor at the University of Saskatchewan and editor-in-chief of the *Canadian Journal of Plant Sciences*.

"So I kind of dug into the data and I can tell you the literature's silent on this, folks."

That knowledge gap inspired what Willenborg called a "look-see" experiment.

THE EXPERIMENT

Willenborg and Nancy Ames, cereal researcher with Agriculture and Agri-Food Canada (AAFC), presented findings from a preliminary experiment examining pre-harvest glyphosate treatments on oats.

The study was done at two locations near Saskatoon, with four replications at each site. Researchers used two cultivars, CDC Dancer and AC Pinnacle.

Researchers measured the results of three different harvest systems:

- swath at 35 per cent seed moisture;
- direct harvest, no glyphosate; and,
- direct harvest with a pre-harvest glyphosate treatment. It was applied at 30 per cent seed moisture at the label rate.

Researchers then measured the effects of different harvest systems on everything from test weight to milling quality. They also worked with the Canadian Grain Commission to test glyphosate residue.

EFFECTS ON YIELD, KERNEL SIZE

The harvest systems' effects were consistent with both oat varieties.

The swathing system saw an 18 per cent yield drop, Willenborg said. He explained they used a plot swather,

which tends to lay down a poor swath in cereals. They won't use that swather next time, he added.

"I don't expect your yield reductions will be as great (with swathing)"

Willenborg said there was no adverse effect on yield with the glyphosate application. In fact, they saw a slight yield bump and significantly greater test weight, he added.

Researchers also found 40 per cent fewer thin kernels in the glyphosate system relative to the swathed oats. Both direct harvest systems produced more plump kernels than the swathed oats.

Researchers did detect glyphosate residue in the oats that received a pre-harvest treatment. But it was only four parts per million, which is well below allowable levels.

Willenborg noted the Canadian Grain Commission now has a glyphosate residue test for oat samples. "And we're going to work with them and continue to send these samples in."

While the results are preliminary, researchers found that harvest systems do affect physical quality.

"But in no instance did we see that the pre-harvest application of glyphosate had any negative influence on physical quality, relative to a well-timed swath or direct cut," said Willenborg.

EFFECTS ON MILLING QUALITY, FLAKE QUALITY

Ames said that in her lab "we tried to look at those quality characteristics that we thought would matter to grain millers, to others. Will this affect our marketability eventually?"

None of the harvest systems affected nutrients such as beta-glucan and protein, Ames said. But, unsurprisingly, growing location and variety did.

"These are different varieties. We expect beta-glucan to be different. These are different locations. Protein is always affected by location. Beta-glucan is affected by location," said Ames.

Researchers also looked at oat pasting viscosity. A lower score means the oat flour will be less desirable for puffing and extrusion, Ames said. "The glyphosate treatment is no different than the straight combining. It's exactly the same. But the swathing is considerably lower."

All three harvest systems produced oats with similar groat breakage metrics, Ames said. The glyphosate treatment produced oats that were slightly better for milling yield, she added. Milling quality was similar in the glyphosate treatment and the other direct harvesting system.

Ames said they'd anticipated a difference with water absorption, which is one measure of flake quality.

"We do see some differences in flake quality with respect to the varieties and location, but not with the harvest treatments," she said. Flake colour was also the same across harvest systems.

The bottom line is that variety

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and environment affected quality more than pre-harvest treatments, Ames said. Using glyphosate before straight combining resulted in milling quality similar to straight combining alone, she added.

Ames said they need to do more studies to see what happens when glyphosate is applied at different moisture stages.

FUTURE WORK

Willenborg said they have a much larger project planned for the future. That project will look at weed control in oats and quality. Over the next two years, researchers will again examine three harvest systems; applying glyphosate pre-harvest in a direct cut, direct cutting without glyphosate, and swathing.

Each of those harvest systems

will be tested at various seed moisture contents. Researchers will measure how timing affects functional quality, particularly with glyphosate treatments.

Willenborg said they also plan to measure stand uniformity. The goal is to see whether green tillers are a factor. If there's an issue, they'll look at whether higher seeding rates can reduce problems, he added.

The work around these studies has been funded by the Saskatchewan Oat Development Commission, the Prairie Oat Growers Association, and the Agriculture Development Fund. **GN**

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Follow her on Twitter @LtoG.



Researchers found no adverse effect on oat yield with the glyphosate application. In fact, they saw a slight yield bump and significantly greater test weight.

A few caveats

Both Chris Willenborg and Nancy Ames noted the study was preliminary. "I caution the interpretation, because it is done just in a single year," said Willenborg.

It's also important to remember that researchers followed the label when applying glyphosate before harvest.

If farmers go off-label, "that's a black hole," Willenborg said. "We don't have data on that. We're going to work on it. But at this point, if you're doing everything by the book, so far we don't have any indication that suggests there would be an issue there."

The Prairie Oat Growers Association's website also reminds farmers to follow the label when applying glyphosate. If it's applied pre-harvest when kernels are green (30 per cent moisture or better), farmers risk residue in the kernels that tops the limits. Farmers can avoid this by making sure the least mature parts of the field are below 30 per cent moisture. The association also notes that some customers have their own restrictions on pre-harvest glyphosate.

Willenborg also noted that the World Health Organization has declared glyphosate a possible carcinogen. Farmers and industry need to be aware of that designation, and consumer perceptions, going forward.

And finally, Willenborg reminded farmers that each additional use of glyphosate carries risks. "Most of our quarter sections are probably seeing two applications minimum per year."

The United States has seen a 10- to 12-fold increase in glyphosate use over the last two decades, Willenborg said. Some States have 10 to 12 glyphosate-resistant weeds. And Western Canada is now seeing glyphosate-resistant weeds as well, he noted.

Lisa Guenther



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THE POWER TO MAKE THINGS GROW

FARM MANAGEMENT

Production costs for spring planning

For farmers in southern Manitoba, soybeans are pencilling in well for this spring

By Angela Lovell

Across the Prairies, new cost of production figures and calculators for 2017 are appearing on provincial websites to help producers make sound production, management and marketing decisions.

On the marketing side things look a little rosier than they did this time last year. “When you look forward to September 2017, it doesn’t look as bad as a year ago when we were looking forward at September 2016,” said Roy Arnott, farm business specialist with Manitoba Agriculture at a meeting of the Border Agricultural Stewardship Association (BASA) meeting in Cartwright, Manitoba in December. “Prices are looking better. We’ve still got big world stocks and a lot of competition out there, so I don’t see a lot of upside per say, but I also don’t see as much downside as we did potentially a year ago.”

A year ago canola was sitting at \$10.25 per bushels and was \$10.75/bu. in December 2016, and while wheat prices remained soft because of large world supplies, soybean are looking strong. “When you start to look out in the \$11.50/bu. range for September

2017 delivery in soybean that’s not bad at all.”

COP RELATIVELY STABLE

Arnott went on to discuss some of the cost of production (COP) figures recently released by Manitoba Agriculture for 2017. Production costs for most major Manitoba crops varied from \$150 to \$200/ac., and when all fixed and operating costs are factored in the COP is anywhere from \$300 to \$400/ac., with corn the most expensive at \$450/ac.

“When we take a historical look at wheat COP we’ve definitely been increasing since 1990, but the last few years have been relatively flat after we came off high fertilizer prices after the stock market meltdown,” said Arnott. “The slight dip we’re looking at this year is mostly due to fertilizer being off just a little bit. Canola is the same thing. COP has been relatively stable the last couple of years, but most of the cost increase in canola is due to seed, which has increased over the past number of years.”

BUY FERTILIZER IN THE FALL

Fertilizer is a major input cost, and buying it in the fall might save a considerable amount of money. Arnott’s long-term figures show that generally fertilizer prices are lower in fall

than in spring. Urea prices average 13 per cent lower in fall than in spring and phosphate is 16 per cent lower. A Manitoba farm buying 160 tonnes of urea and 50 tonnes of phosphate could save almost \$18,000 a year on average by buying in the fall rather than the spring.

The problem is that often, producers are simply too busy in the fall to even think about buying fertilizer. “I believe producers have to buy fertilizer more strategically,” said Arnott. “This past fall, urea was \$400/tonne but I think there was very little bought and very little applied mostly because everyone was trying to finish up harvest,” said Arnott. “There were deals to be had and few could take advantage, which was unfortunate. Heading into spring, we’re probably going to be in the \$500/tonne range for urea.”

Phosphate follows the same trend — this fall was retailing around \$600/tonne and Arnott predicts that price will probably be around \$625 in the spring. “If producers can buy fertilizer in the fall or work a deal with their retailer then, the better off they’re going to be.”

THE BEST RETURNS

Arnott predicts chemical input costs will rise in the region of around two

to three per cent for 2017, and seed costs overall will continue to trend upwards, especially for canola, which may make some other crops, like soybean, increasingly attractive. “We have pegged canola seed prices for the COP at \$60 an acre, but if you start packaging up things like club-root and shatter resistance, you’re rocketing to \$70/ac. for canola seed,” said Arnott. “Some areas are having challenges getting good yields, and the question is how much money producers can afford to put into canola and still come out the other side.”

Arnott ran through some scenarios based on local yield averages for the local area (Risk Area 5) of 42 bu./ac. canola, 55 bu./ac. wheat and 36 bu./ac. soybean. Projected fall prices for the calculations were \$10.75/bu. for canola, \$6.25/bu. for wheat and \$11.50/bu for soybean.

Arnott’s 2017 profitability analysis for Risk Area 5 shows a \$200/ac. margin over operating costs for canola, but only \$80/ac. when all fixed costs are factored in. “Wheat has a lower margin over operating expense, but soybean is holding a good margin based on a 36 bu./ac. yield at \$11.50/bu. Soybean is cranking out quite a bit of money with a little less cost and getting good returns.”

That’s causing Arnott to speculate that soybean acres are going to continue to grow in southern Manitoba as more producers move away from canola or grow it every three years in rotation as opposed to every two years.

Corn is another option that some producers are considering, adds Arnott, and his figures show some decent net margins can still be achieved in the \$35 to \$37/ac. range but there are equipment considerations — like the need to purchase planters and headers — that may put a bit of a damper on corn’s push further west.

HOW MUCH INSURANCE DO YOU NEED?

Another significant and important COP that many farmers overlook or simply don’t think about is crop insurance. For the first time, this year’s Manitoba COP guide includes an AgriInsurance Analysis calculator, which Arnott hopes will help producers think more strategically about their insurance needs.

“At 80 per cent insurance coverage the operating costs are all covered for all the major Manitoba crops,” said Arnott. “But it doesn’t cover any of the fixed and labour costs.”

Again, using Risk Area 5 figures, a canola crop has \$56 of costs not covered, wheat has \$9 of costs and soybeans have \$100 of costs not covered by insurance at the 80 per cent level. “If you took 80 per cent coverage and you had a wreck, you have essentially got 70 per cent of your total costs covered in general,” said Arnott. “When producers look at crop insurance I think they have to be realistic as to what level they need. Young producers starting out have to insure everything at the highest rate because

NEWS BITS

The land cost factor

Angela Lovell

Fixed costs come out of the gross margin (gross revenue minus operating costs). Ideally the margin over operating costs should be around 35 per cent of gross revenue, with equipment costs at 12 per cent, owner withdrawals at five per cent and land costs at 18 per cent of gross revenue.

But as land purchase and cash rental prices continue to rise across all of Western Canada — cash rents now range from 18 to 22 per cent of gross revenue on average — they are increasingly putting the squeeze on net margins. “After the operating expenses are paid, the margin that’s left has to cover land, equipment and profit for the owners,” said Arnott. “If producers overspend on land rent how are they going to cover these other costs?”

As a check and balance, said Arnott, landowners and producers should assess cash rent based on the rate of return on land values. “If we take a land that is valued at \$2,100/ac. and we add a long term investment rate of return at 2.5 per cent, then add in \$12 per acre for property tax, we would expect that land to rent for around \$64.50 an acre to protect the investment value that of the landowner,” he said.

“A landowner with land valued at \$3,600/ac., using the same formula, might expect to rent that land for \$102/ac. Looking at some of the land prices today the reality could be anywhere from \$60 to \$140 based on gross revenues of \$350 to \$450/ac. and that’s a huge range which isn’t necessarily based on the productivity of the land.

“My huge caution on land planning based on gross revenues or margin over operating is what if we have flat or falling commodity prices, or increased interest rates or production costs? I worry about making all of our decisions based on gross revenue.”

they don’t have anything behind them. But after years of farming, when producer have fewer liabilities, maybe they only need to insure at a level that covers their operating costs, because we need to be insuring liabilities not revenues.” GN

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.

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FARM MANAGEMENT

Talk to a lawyer before the inevitable

Death, disability, divorce and disagreements. Plan ahead for the 4 Ds

By Leeann Minogue

Death, divorce, disability and disagreement. While not all are inevitable, Laura McDougald-Williams, a partner in the Meighen Haddad Law Firm told an audience at CropConnect in Winnipeg in mid-February that it's wise to protect your farm against the "4Ds."

1. DEATH

The first D is inevitable. You need a will. This is especially important, McDougald-Williams said, if you have a blended family. If you die without a will, there may be "surprising and unwanted results." As your family circumstances change, keep your will updated.

Your "estate," McDougald-Williams clarified, includes "assets that are in your name alone at the time of your death." Assets that are jointly owned, or life insurance proceeds after your death are not part of your estate. Working with a lawyer can help you lower estate administration costs after your death. "Ideally," she said, "the best estate planning would be no estate — you would die broke, or without much of anything to administer at the time of your death."

If you die leaving significant assets in your estate, "your executor may be required to get a probate order" to deal with them after your death. In Manitoba, there is a probate tax of 0.7 per cent.

McDougald-Williams described an elderly Manitoba couple. "The husband passed away, and it was discovered after his death that all of the land was in the husband's name alone." He had more than \$1 million worth of land. The couple paid \$7,000 in probate taxes. There are also proscribed legal fees in Manitoba — in this case, \$13,000. The widow would have needed \$20,000 to transfer the land into her name. If a lawyer had arranged the transfer before the man's death, "it probably would have cost him about \$500."

Land transfer taxes can also be an issue. While farmers are exempt, there are circumstances where you may not qualify. For example, if you wait until after you retire from farming, you will pay the land transfer tax.

Capital gains taxes may also be a problem if you haven't consulted with an estate planner before your death. McDougald-Williams says "there are pretty narrow definitions for the land that qualifies," for the Farmland Capital Gains Tax Exemption. "

She gave an example of a farmer who owned a half section of land that he'd inherited from his parents. His non-farming brother had a 30 per cent interest in the land, on the land title. Because the non-farming sibling was involved, "that land did not qualify for the Capital Gains Tax Exemption."

Renting land out can also complicate your qualification to receive the Capital Gains Tax Exemption.

2. DISABILITY

Plan ahead, in case you become disabled through sickness or an acci-

dent. Make sure you've planned for power of attorney and health care directives, so someone else can make decisions for you if this becomes necessary.

If you don't have those documents in place, your family will have to go through the expense and hassle of applying for them.

3. DIVORCE

McDougald-Williams reminded the audience that "the divorce rate in Canada is about 41 per cent." And,

as McDougald-Williams said, "the effects of a divorce on the farm can be devastating."

While laws will vary by province, keep in mind that your spouse may be entitled to "asset equalization." You may be required to share 50 per cent of the increase in value of your assets that occurred during your relationship. In these times of rising land prices, that could be a significant amount — possibly enough to require the sale of land.

4. DISAGREEMENT

While many farmers believe a handshake is still enough, McDougald-Williams advises you to get a written agreement. This would apply to employment agreements, land rental agreements, partnership agreements and operating agreements.

As an example, McDougald-Williams talked about land rental. "Your landlord may seem like a reasonable, nice guy." But if he dies "without a written contract in place, now you'll be dealing with his

executor or his family. You have no idea if they're as kind and reasonable as he is, or if you'll be able to farm the land."

Dealing with lawyers can make your life easier when or if one of these four "Ds" comes to pass on your farm. Make sure you have in place "tools to make these difficult life challenges a little easier," McDougald-Williams said. **GM**

Leeann Minogue is the editor of Grainews.

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WEED CONTROL



Cleavers can have a negative impact on canola and pulse crops.

CONTROLLING CLEAVERS WITHOUT QUINCLORAC

With quinclorac off of the herbicide menu, farmers will need to use other tools

By Melanie Epp

Last spring, the Western Grains Elevator Association (WGEA) and the Canadian Oilseed Processors Association (COPA) advised growers that they would not accept quinclorac-treated canola grown and harvested in 2016. The reason for this announcement was to make sure that grain shipped to customers in other countries remains in compliance with regards to Maximum Residue Limits (MRL). Fortunately, cleavers can be controlled without the use of quinclorac.

When grain exceeds the MRLs of other countries Canada's reputation as a supplier of quality grain is in jeopardy, said Wade Sobkowich, executive director of

the Western Grain Elevator Association. A high amount of canola is exported to China, and China does not have a MRL in place for quinclorac, meaning that the MRL is effectively zero, Sobkowich explained.

"The costs of keeping quinclorac-treated canola segregated throughout the Canadian handling system is very high," he said. "Our Chinese customers will not pay for these added costs, nor do we believe producers should pay for these added segregation costs. Grain companies had no control over the registration or premature commercialization of Clever, and likewise we do not feel we should pay these costs either. As a result, our members have individually taken the decision to not accept canola treated with quinclorac."

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In the fall, cleavers will be small, so they should be relatively easy to control.

TIPS FOR CONTROL

An annual and winter annual weed, cleavers can have a negative impact on canola and pulse crops. While crop loss data in cereals is unknown, according to Dow Agro-Sciences, a 20 per cent yield loss per 100 plants per square meter is possible in canola. Cleavers is particularly problematic in canola because it is difficult to separate from canola seed. Even a few seeds can seriously downgrade canola.

Ian Epp, a northwest Saskatchewan agronomy specialist with the Canola Council of Canada says both his and the Council's approach to the management of cleavers is systematic. "It starts before you're planting canola, making sure that you're prioritizing cleaver control in your cereals," he said. "We have some really good options – some of the Group 4s, like fluroxypyr – we have really good pre-seed options," he said. "So we can really hammer cleavers in that cereal, reduce the amount of seed going into that seed bank, and get a leg up in canola."

The next step to controlling cleavers is making sure to get the winter annuals controlled in the fall. "The winter annuals are the biggest concern because by the time we get into canola, they're really big and they're really hard to control – almost impossible to control in crop," he said.

In the fall, cleavers will be small making them relatively easy to control. And you can control other common winter annuals at the same time. If a few weeds do escape or weeds begin emerging early in spring, pre-seed control will be important.

Using a higher rate of glyphosate is becoming a little more common, said Epp. "But this is one where that normal rate of glyphosate that might kill most of your other small weeds might not be effective on cleavers," he said. "So using a higher rate of glyphosate is the first thing you can do."

Canola growers are, unfortunately, at a bit of a disadvantage in terms of tank-mix options, pre-seed. Clomazone, a Group 13 pre-plant, is one that was just registered last year. "The key with Clomazone is that it won't help cleavers that are already germinated and up, but it will help those with the soil-activated herbicide, so it will reduce the vigor and the emergence of cleavers that crown," he said. "You get control on the flushing of cleavers."

In crop control options are effective, but only to a certain degree. Clearfield works well, as long as you don't have Group 2-resistant cleavers. "Group 2-resistant cleavers are fairly widespread, especially in the black soil zone, and especially if growers have a history of applying a lot of Group 2s," said Epp.

Liberty, he said, has a history of not working well in cleavers. "The efficacy in cleavers is kind of hit and miss," he said. "The key is to spray early. Any of these herbicides work better when the cleavers are small."

Luckily, with both the Liberty and Roundup systems there is the option to spray twice. "The key is to spray early and then re-evaluate, and then maybe, likely, spray a sec-

ond pass in that four to five week stage," he said. "And then you control all your weeds in that really critical period of weed control, which really affects yield the most."

A FUTURE FOR QUINCLORAC?

China could have an MRL in the near future, said Sobkowich, but no one knows for certain. "We cannot operate based on some undefined future MRL that may be approved at some unknown future time," he said.

Furthermore, Epp notes that while quinclorac is efficacious, it is already seeing resistance, so even if the MRL issues are addressed, it may not be a viable solution. **GN**

Melanie Epp is a freelance farm writer based in Guelph, Ont.



China has not set a maximum residue limit for quinclorac in canola, meaning the rate they will tolerate is effectively zero.

PHOTOS: IAN EPP, CANOLA COUNCIL OF CANADA

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Actual test results. University of Guelph, 2014.

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FARM MANAGEMENT

New online calculators available from the Canola Council of Canada

Leeann Minogue

Just in time for spring seeding, the Canola Council of Canada has released new seeding rate and plant stand calculators.

The Canola Council's press release says,

"growers often default to seeding rates of five lbs./ac. or lower, regardless of seed size or field conditions." Using these new tools will make it easier for farmers to make a "more refined" decision in the crunch time of seeding.

The "target density calculator" takes into account your risks, like weed competition,

spring frost and expected insect damage. While the Canola Council has been recommending a density of seven to 10 plants per square foot, there may be situations where lower plant densities will still meet target yield goals. (However, the calculator will not recommend a target lower than six plants per square foot.)

Once you know your target density, the "seeding rate calculator" computes your required seeding rate based on your expected rate of seed survival and the thousand kernel weight of the seed in your shed.

Find these handy tools online at canolacalculator.ca.

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CROP MANAGEMENT

Is the winter wheat going to be alright?

Patience is key to judging the health of your winter wheat stand this spring

By Lisa McLean

If you're wondering how your winter wheat crop is faring in the field this winter, you're not alone. Agronomists at The Western Winter Wheat Initiative (WWWI) — a project to build awareness and credibility of winter wheat — has already received calls from growers asking about how and when to judge the stand.

Paul Thoroughgood, an agronomist with the WWWI, says growers will need to be patient and give the crop time to come around in May before they come up with plan B.

"The time to make a call on a winter wheat crop should really come when growers are about halfway through spring seeding," says Thoroughgood. "That gives the plant the time it needs to recover."

IF YOU REALLY MUST LOOK

Thoroughgood notes winter kill in the Canadian Prairies is about the same as Kansas — only in the nine to 10 per cent range. "Growers in that region aren't preoccupied with winter kill, and neither should we," he says.

But if you're short on patience, there is something you might try when the ground begins to soften: bring a few plants inside. Thoroughgood says on his own farm he has dug up a four-inch row and put it in a plastic dish in the kitchen so he could watch it grow.

"The leaves might green up, or they might be dead — that doesn't mean anything," he says. "I think we'll see a lot of leaves turn brown this year because in some areas we had cooler temperatures with no snow."

After a week or 10 days, he suggests pulling one or two plants out of the container and rinsing them off. Last year's roots will be light brown in colour, but the new roots from this year will be bright white — that's the sign of new growth.

"If growers are nervous about growing winter wheat for the first time, pulling a few plants is a great way to educate themselves, but they still can't make a final decision until they're well into seeding," Thoroughgood says.

IT'S WARM UNDERGROUND. PROMISE.

It's not practical to dig up every plant to judge whether or not it made it through winter. Thoroughgood says winter wheat requires a large helping of trust.

"This year we had a phenomenal fall with a nice, gradual move into winter, which should have resulted in the plants being well-acclimated, reaching their maximum cold tolerance," he says.

According to temperatures from winter survival stations throughout the prairies, soil was still nowhere near temperatures where we should be concerned about

winter survival issues. In late December and early January — the peak of winter hardiness period for winter wheat — the temperature of the soil at one inch below soil surface was around -12 C. Winter wheat plants will tolerate -22 C to -24 C at their maximum — there's a lot of buffer there.

"When it's -30 C outside at night and -15 C during the day, most people think about the extreme cold of overnight and they think the crop could have frozen," he says. "But we

forget how much heat there is trapped in the earth. And that heat continues to move up throughout most of the winter. Snow cover is a great benefit for a winter wheat crop because it traps that heat in there."

He notes a bigger concern would be moving further into the spring, when the plant starts to de-acclimate, and become a reproductive plant rather than a vegetative plant. It gradually loses its ability to tolerate cold temperatures.

"Prolonged, nasty cold that we

sometimes get in March is probably more damaging if the snow is gone then," he says.

WHAT YOU CAN DO NOW FOR NEXT YEAR'S CROP

So what can you do now to keep winter wheat top of mind? Plan next year's crop.

"If growers are contemplating making winter wheat part of their crop rotation, the most successful growers make that decision in March or April and plan and man-

age accordingly," says Thoroughgood. "That might mean swathing a portion of their canola rather than straight-cutting it all, for example."

"Start making a plan in March or April and execute it in May rather than making the plan in August, hoping to execute in September," he says. "Successful winter wheat growers do it on purpose rather than by accident." **GM**

Lisa McLean is a communications freelancer specializing in agriculture. Follow her on Twitter at @lisamclean.

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CROP PROTECTION

WHEN TO SPRAY CABBAGE SEEDPOD WEEVIL

If you have to spray for the cabbage seedpod weevil, get the timing right



PHOTO: SHELLEY BARKLEY

Cabbage seedpod weevils are attracted to the buds on early canola plants. They feed on the buds, migrating as the crop comes into bloom.

By Melanie Epp

The first time Alberta grain farmer Jay Schultz remembers hearing about cabbage seedpod weevil was in 2005 at the University of Alberta when Dr. Lloyd Dosdall warned that it could become a major pest in the province. Schultz, who farms 6,000 acres near Standard, Alta., said that he never really paid attention, that is, until the summer of 2015 when populations really starting growing. Schultz learned the hard way that control is advised once populations reach threshold.

Although there was noticeable chatter about a potential problem in that summer of 2015, Schultz didn't take them too seriously.

"My personal philosophy on insects is that I would much rather go to the lake in the summer instead of sweeping fields for bugs," he said. "I would rather not spray an insecticide, and let pest populations balance themselves."

"It's easy to take that stance when you don't know a pest is destroying your crop," he continued.

By the time Schultz returned from the lake and walked the fields with a local agronomist, it was pretty much too late. "We found cabbage seedpod weevil was easily two to three times threshold levels," he rwwwwe-called. "In some cases, far too much to bother counting. They were just everywhere. Obviously the strategy of doing nothing was not working, as cabbage seedpod weevil does not have any significant predators to keep them in check."

Despite the fact that they were in the middle of a severe drought, Schultz made the decision to spray the worst of the fields, not knowing if it would pay off. "We protected the plants, gave them a chance and some of those fields set new yield records for us that year," he said.

Schultz was lucky; he caught the problem with enough time to address the issue. Cabbage seedpod weevils are attracted to the buds on early canola plants. They feed on the buds, migrating as the crop comes into bloom. According to Alberta entomologist Scott Meers, spraying is not recommended before 10 percent bloom.

Meers reminds growers that this



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is especially important since some insecticides, like Matador, can only be applied once per season. Weevils, he said, move very easily from field to field. While spraying early will eliminate those early infestations, a whole new group could be there by early flowering. "Some producers have started pushing earlier," he said. "They run the risk of getting ahead of the major migration in the field and maybe having to do it again."

FINDING THE RIGHT STAGE

How will growers know when their canola crop has reached 10 percent bloom? If growers are uncertain, Meers suggests looking at a staging guide online. The canola should be nice and yellow all across the field, he said. In situations where fields are uneven, growers should focus on the flowered areas, he said.

The economic threshold is 20 to 40 cabbage seedpod weevils per 10 sweeps, or 2.5 to three per sweep. Use a sweep net to take five samples along the edge of the field. While growers should concentrate control efforts on flowered areas in uneven fields, it's important to sweep at random, not just in the flowered areas.

Before spraying, Meers suggests that growers contact local beekeepers to prevent damage to their hives.

KEEPING ON TOP OF THIS WEEVIL

So how do growers stay on top of what's happening in their fields? One way is to scout. Knowing exactly what's out there will help them to make important spray decisions.

"I think growers have to be very careful just blanket spraying year to year for insects like cabbage seedpod weevil," said Schultz. "It's really easy to just take a retailer's suggestion to spray or to just add some insecticide into your tank mix because you are doing a pass anyway."

"But we need to know what's going on in the field and know threshold levels," he said.

To stay on top of pest outbreaks, Schultz suggests following agronomy updates online. He also uses Twitter. "In Alberta, Scott Meers and associate Shelley Barkley are excellent resources," said Schultz. "Their #ABbugchat program on Twitter during the growing season is a great way to find out what they and other growers are seeing in their area and what to do about it."

"It's like coffee shop talk from the seat of your tractor while on auto steer," he continued. "Of course, it's only useful if you have Twitter, and not every grower will use it." **GN**

Melanie Epp is a freelance farm writer.

Locating the bloom stage

Syngenta has a staging guide and the following information on its website.

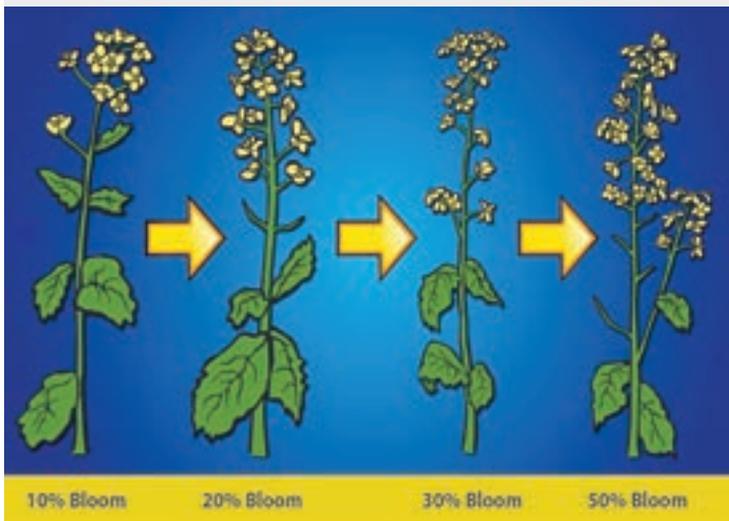
At 10 per cent bloom: Approximately 10 open flowers on the main stem (which includes aborted flowers and developing pods). Two to four days from first flower to 10 per cent bloom. This can vary by season, variety, or hybrid.

At 20 per cent bloom: Approximately 14 to 16 flowers on the main stem. Minimal petal drop has occurred.

At 30 per cent bloom: Approximately 20 open flowers on the main stem. Six to eight days after the start of flowering. After 30 per cent bloom, petal drop and pod set begin.

At 50 per cent bloom: More than 20 flowers on the main stem. The stem has elongated.

Leeann Minogue



GRAPHIC COURTESY SYNGENTA

Find it on Twitter

If you're not sure who to follow on Twitter, and you're looking for agronomy information for the coming season, try these experts:

Jay Schultz, grower:
@WheatlanderJay

Scott Meers, Alberta Agriculture insect specialist: @ABbugcounter

Shelly Barkley, Alberta Agriculture insect research technologist:
@Megarhyssa

Canola Council of Canada agronomy specialists:
Autumn Barnes (Alta.):
@autumnCCC

Angela Brackenweed (Man.):
@BrackenreedCCC

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Leeann Minogue

BASF's new dicamba product Engenia will be available in Western Canada for this growing season, useful for farmers growing

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While Engenia has lower volatility properties, BASF's technical service specialist Paula Halabicki says that BASF encourages farmers to follow best use recommendations.

These include lowering sprayer speed (BASF recommends a speed of 25 km/hour or less), and boom height (no greater than 50 cm above the crop canopy. Spray droplets should be extremely coarse to ultra coarse. Users should avoid periods of dead calm, but

spray when the wind is between three and 16 km/hour. Farmers should know what their neighbours are planting to avoid spray drift into sensitive areas.

The product can be tank-mixed with glyphosate.



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CROP DEVELOPMENT

The brave new world of Prairie wheat

A look at the research funding and marketing development behind this rotation staple

By Angela Lovell

Wheat is a staple crop in most Prairie farmers' rotations, and it's not likely to be displaced any time soon. It's still one of Canada's most important crops, and contributes more than \$11 billion to the Canadian economy every year. Although wheat prices may not always get farmers excited, the potential for the crop does, especially now that more investment is going into developing new varieties — including hybrids — and exploring new, international market opportunities.

"We see a tremendous opportunity in wheat going forward, and that's why we are in the business of collecting a check-off and investing producer funds into research and market development," says Tom Steve, general manager of the Alberta Wheat Commission. "Over time, we've seen diversification into canola and other crops which is a good for the long-term prosperity of farmers. But wheat acres are reliable year in and year out. Most, if not all grain farms grow wheat as part of their rotation, and we see a lot of opportunity because of investments that not only the provincial crop commissions are making, but we see a lot of private sector interest in investing in wheat. In fact, it might be wheat's turn to take the centre stage."



The three provincial wheat commissions have signed an MOU, agreeing to continue support for Cigi. The three organizations will collaborate, and co-ordinate regional research efforts.

A SINGLE CHECK-OFF FROM AUGUST

In January, the three provincial wheat commissions in Manitoba, Saskatchewan and Alberta signed a memorandum of understanding (MOU) to continue their support for wheat variety development and the Canadian International Grains Institute (Cigi) when the Western Canadian Deduction (WCD) ends on July 31, 2017.

The WCD, a transitional levy established in August 2012, to

replace the previous check-off administered by the Canadian Wheat Board, ensured continued support for wheat research and market development until the western provinces could establish their own wheat commissions. The WCD collects \$0.48 per tonne on all sales of wheat in Western Canada.

The Alberta Wheat Commission (AWC), Saskatchewan Wheat Development Commission (Sask Wheat) and the Manitoba Wheat and Barley Growers Association

(MWBGA) said in a press release that they will absorb the responsibilities and financial obligations of the WCD from August 1.

"Fifteen cents a tonne of the WCD funds are allocated to Cigi and \$0.30 a tonne goes to fund long-term, wheat varietal development research," says Harvey Brooks, general manager of Sask Wheat.

After August 1, all the commissions will combine their provincial levies with the \$0.48 that was the WCD into a single per tonne check-

off. Saskatchewan and Manitoba are moving to a \$1 per tonne check-off and Alberta to \$1.09 per tonne, because Alberta has a slightly higher provincial check-off amount to begin with.

"We will continue to collaborate and co-ordinate regional research efforts because we recognize that wheat is broader than the provincial boundaries, and we need a regional approach," says Brooks. "We're facing common problems with disease and other agronomic issues, and this MOU demonstrates that there will be continuity of the research, variety development and market development efforts that are funded by Canadian producers."

The wheat commissions are also among the funding organizations that are participating in the development of a Canadian National Wheat Cluster for submission to the next federal Agricultural Policy Framework (APF) that will succeed the current Growing Forward 2 (GF2) program.

"All the wheat-related funding partners have come together to organize themselves around putting in a proposal for a wheat research cluster," says Brooks. "It's being facilitated by the Western Grains Research Foundation (WGRF), and includes not only the Prairie wheat commissions, but also wheat grower organizations in British Columbia, Ontario, Quebec and Atlantic Canada. It's a multi-provincial effort, nation-wide and

Continued on Page 24 ▶

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► Continued from Page 23

we're putting those efforts together to make sure that we have continuity on the wheat cluster when the current GF2 funding runs out in 2018."

The group is also working with co-funders to request letters of intent for an Integrated Crop Agronomy Cluster, which recognizes that there are a number of agronomic research projects that apply to multiple commodities.

2016 A CHALLENGING YEAR

2016 was a bitter sweet year for wheat producers. Although seeded acres were slightly down, yields were up, but many Western Canadian farmers didn't get to take full advantage of their high yields. With endless summer rains and early snowfalls in the fall, a large number of farmers have quality issues in their wheat, largely as a result of disease.

Agriculture and Agri-Food Canada (AAFC) forecasts that wheat production in Canada will hit 29.1 million tonnes in 2017, which is down about 2.6 million tonnes from 2016, but will still rank as the fourth biggest wheat crop in 20 years. Spring wheat could be up by around six per cent, but durum acres will probably shrink as much as 15 per cent. This reflects the serious issues growers have had with disease over the past season, which will make good quality durum seed hard to find.

Despite the challenges of 2016, wheat is generating a lot of excitement these days. The fact that a Canadian researcher, Dr. Curtis Pozniak of the Crop Development Centre (CDC) at the University of Saskatchewan, is leading the team which has sequenced the bread wheat and durum wheat genomes, has helped spur significant investment into wheat breeding and research across the country.

A TRULY CANADIAN CROP

Wheat is a truly Canadian crop, grown across every province. The Grain Farmers of Ontario (GFO) are investing producers' check-off dollars into projects addressing four core priority areas: agronomy and production, weed, disease and insect pests, breeding and genetics, and crop utilization and crop quality.

Current research priorities emphasize projects related to phosphorus management to support GFO's overall 4R nutrient stewardship strategy to address water quality in the Great Lakes. As of May 2016, GFO had approved four major projects about phosphorus management looking at the impact of cover crops, strip tillage and management zones on phosphorus losses, creation of a baseline 'landscape sensitivity' analysis in order to recommend phosphorus best management practices, and how diverse cropping systems affect phosphorus run off losses. The economic and environmental benefits of cover crops, improving nitrogen recommendations and developing new or bio-products from wheat and other crops for existing and emerging markets are also high priority for GFO.

COMMON RESEARCH PRIORITIES

Wheat research priorities are similar across all the Prairie provinces, which is why there are so many collaborative partnerships and joint funding initiatives supported by the Manitoba, Saskatchewan and Alberta wheat commissions and other industry and government partners. "We are agreed on research priorities and we're moving ahead, so it looks exciting for the near term but we do have a number of common challenges," says Brooks. "Producers are looking for increased disease resistance from a number of perspectives. We're investing further into fusarium and wheat midge research and management efforts."

All three wheat commissions are involved in research into fusarium head blight (FHB) resistance and management, but for the MWBGA it's a top priority. "Number one for us fusarium management, everything from varietal improvement to crop control measures, to agronomy, any ways that we can manage fusarium because it has such a significant impact on wheat in Manitoba," says Lori-Ann Kaminski, research manager at MWBGA, which is also co-funding a project with the Manitoba Pulse & Soybean Growers that is assessing how different rotations affect FHB in the soil.

Wheat is an important rotational crop, which Kaminski feels will become increasingly important, as including cereals in crop rotations helps to combat herbicide resistance and disease problems in some other crops.

KEEPING GRAIN MOVING

Getting grain to the ports is as important as filling the bins, and there is a lot of work being done on the transportation file, following a one-year extension until this August of the provisions of the Fair Rail for Farmers Act, which was put in place during the transportation crisis of the 2013-2014 crop year. The provisions include the authority to regulate interswitching arrangements (between different carriers), set out level-of-service obligations for railway companies, and prescribe a minimum amount of grain to be moved by Canadian National Railway (CN) and Canadian Pacific Railway (CP) during any period within a crop year.

Brooks says he also expects an announcement early this year about the maximum revenue entitlement (MRE), which sets limits on the average revenue per tonne, for a given length of haul, that CN and CP can earn for shipping western Canadian grain. "The report of the Standing Committee on Transport, Infrastructure and Communities that was released in December appeared to signal that at this point, the Committee didn't see any potential for removal of the MRE, which would be good news," says Brooks. "The MRE is working, and it ensures that railways are well compensated and that farmers are not subject to undue rail freight prices."

CEREALS CANADA A STRONG WHEAT ADVOCATE

The wheat industry has a relatively new advocate in Cereals Canada, a national, non-profit organization that brings together wheat industry stakeholders, such as farm organizations, grain handling, export and processing companies, and crop development and seed companies. Its mission is to enhance the competitiveness of the Canadian cereals industry by providing leadership on initiatives of common interest to the whole value chain, including innovation, market development and advocacy.

Cereals Canada focuses on market development and support, and participated — along with the Canadian Grain Commission and Cigi — in the 2016 Canadian Wheat New Crop Missions, which ran for seven weeks from the beginning of November to mid-December. The missions kicked off with sessions for Canadian millers, then went on the road to reach

customers in 17 countries in Asia, Latin America, Europe, North Africa and West Africa. They include representatives from the whole value chain, including farmers and exporters to provide information about Canada's wheat crop and provide feedback about what customers want back to the industry. "The feedback is shared back through the value chain, to farmers, and also to the research community, so our research efforts can be focussed on what both farmers and end-use customers are looking for," says Cam Dahl, president of Cereals Canada.

While the Alberta Wheat Commission and MWBGA are Cereals Canada, the Sask Wheat board of directors has declined to join Cereals Canada.

TRADE DEALS ESSENTIAL

Canada is a major wheat exporter, which means international trade agreements are vital. With the new U.S. administration already scrap-

ping the Trans-Pacific Partnership and making noises about revamping other agreements such as the North American Free Trade Agreement, what will this mean for exports of wheat to the U.S. and other international markets?

"It's important that our governments now move quickly forward with completing the trade agreement that we had started with Japan, and to look at other potential bilateral agreements because trade is critically important to us as an industry," says Dahl. "As far as response to the election in the U.S., trade is important from both sides of the border. We are the U.S.'s best customer and I can't envision the trade relationship between our two countries not existing, so I don't think we should push the panic button yet." **GN**

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.

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CROP DEVELOPMENT

Wheat research on the Prairies

A roundup of wheat research that will bring new varieties suited for the Canadian Prairies

By Angela Lovell

According to Genome Canada's website, wheat accounts for 20 per cent of all calories consumed throughout the world, and as global population grows, wheat productivity needs to increase by 1.6 per cent each year. At the same time, climate change is causing temperature and precipitation changes that challenge established patterns. So there is also a need to sustainably respond to environmental changes to ensure the long-term stability of the wheat industry.

This preamble identifies the impetus behind the flagship project

of wheat research in Canada: the Canadian Triticum Applied Genomics (CTAG2) project, which is being led by Dr. Curtis Pozniak of the University of Saskatchewan.

This \$8.8 million project, funded by Genome Canada, the Western Grains Research Foundation, and the Manitoba, Saskatchewan and Alberta wheat commissions, has already delivered its first phase in early 2016, when researchers announced they had sequenced the bread wheat and durum wheat genomes.

The work involves scientists from four other Canadian research institutions: The National Research Council of Canada, Agriculture and Agri-Food Canada (AAFC), the Uni-

versity of Guelph, and the University of Regina. The CTAG2 team is working closely with the International Wheat Genome Sequencing Consortium to understand the wheat genome and develop genetic markers and predictive genetic tests to make Canadian wheat breeding programs more efficient.

Through the use of these genomic technologies, breeders will have access to thousands of DNA markers that will allow them to speed up the process of developing new wheat varieties that have improved agronomic performance, are more resistant to diseases and pests, resilient to heat and drought stress, and that offer improved end-use qualities.

RESEARCH PARTNERSHIPS

Canadian wheat research is booming across the Prairies, attracting both private and public investment, and encouraging partnerships and collaborations between governments, wheat commissions and private companies.

An example is the 4P (Public, Private and Producer Partnership) Canada Prairie Spring (CPS) partnership between the Alberta Wheat Commission (AWC), CANTERRA SEEDS and AAFC, which provides funding to develop improved varieties of Canada Prairie Spring Red (CPSR) wheat at the Lethbridge Research Centre. Since its inception in 2015, the 4P CPS partnership has produced two new varieties cultivars and has several lines currently in registration trials with promising agronomic traits. A share of royalties for lines developed under the program will be reinvested back into public breeding programs through the AWC.

Canterra Seeds also has a new cereal breeding and development partnership with French farmer cooperative, Limagrain Cereals Research Canada, and plans to build a facility in Saskatoon.

Sask Wheat has committed more than \$1.9M over the past two years to support wheat research projects through the Saskatchewan Agriculture Development Fund (ADF), co-funded by AWC, WGRF, the Saskatchewan Pulse Growers and SaskCanola.

The Agricultural Funding Consortium, a partnership of 13 organizations, has created a one-window approach to agricultural research and development funding in Alberta. Through this mechanism, AWC has committed over \$3.5 million to genetic and agronomic research since 2013. Projects from this initiative have included investigations into cold tolerant spring wheat, improving resistance to pests and disease and optimizing management practices such as nitrogen, fungicide and plant growth regulator applications.

Saskatchewan grows most of the durum wheat in Canada, so it's not surprising that the Sask Wheat and SeCan are jointly investing up to \$3.5 million in the CDC's durum wheat development program over the next 10 years. The AWC is funding a project with Alberta Agriculture and Forestry looking at the impact of fertilizer and fungicide rates and timing on yield of different varieties of wheat, as well as assessing the effect of plant growth regulators to improve standability. Other priorities for research include disease and pest resistance to things such as wheat midge, as well as developing varieties with better cold tolerance.

HYBRID WHEAT FACILITY OPENS

BayerCrop Science Inc. is putting serious investment into hybrid wheat, opening a \$24 million, wheat research facility at Pike Lake, south

of Saskatoon last summer, which will focus on the development of hybrid wheat. The cutting-edge facility brings together multiple aspects of wheat breeding into one centralized location and includes an analytical lab, pathology research space and laboratory with an accompanying 2,550 square feet of environmentally controlled, off-site greenhouse space. The station also has 480 acres for field breeding and evaluation trials.

"The opening of this facility represents a monumental investment into the research and development of new and innovative hybrid wheat technologies designed specifically to help Canadian growers overcome some of their biggest cropping challenges, so they can successfully compete in the global grains market," said Dr. Marcus Weidler, head of Seeds Canada for BayerCrop Science in a June 2016 press release.

The Bayer Wheat Breeding Station will focus on the creation of new CPS and Canadian Western Red Spring wheat hybrids that will be commercially available to Canadian growers within the next six to eight years.

Wheat hybrids will be commercially available soon

CANADIAN WHEAT ALLIANCE

The Canadian Wheat Alliance (CWA) is an 11-year commitment between AAFC, the University of Saskatchewan, the province of Saskatchewan and the National Research Council of Canada, which is supporting research that will improve the profitability of Canadian Wheat producers.

Among the projects CWA is funding are two in Saskatoon which are developing a precise genetic mapping system – Canadian Wheat-Nested Association Mapping (CanNAM) – which will allow breeders to identify race-specific, rust resistance genes for leaf, stem and stripe rust and FHB for inclusion in AAFC and the U of S's CDC breeding programs.

The second project is identifying wheat traits that contribute to maximum standability in different environments in Manitoba and Saskatchewan, with an aim to develop markers for these traits that can be incorporated into wheat breeding programs.

All these investments mean that farmers across Canada can look forward to some exciting new wheat varieties in the coming years, which will offer them higher yields, improved agronomic traits, disease and pest resistance, better stress tolerance and hopefully some new marketing options. **GN**

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.

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CROP DEVELOPMENT



PHOTO: THINKSTOCK

Wheat research in the pipeline

Not happy with wheat in your rotation? One of these projects will brighten your future

By Angela Lovell

Following is a roundup of some of the major wheat research and breeding projects across Manitoba, Alberta and Saskatchewan that address priority areas such as increasing yield, improving disease and pest resistance, agronomics and tolerance to drought and excess moisture, as well as end-use qualities.

BETTER WHEAT UNDER STRESS

Two projects are looking at improving the quality and winter hardiness of winter wheat. The first, at the University of Saskatchewan, seeks to accelerate the development of 'resilient winter wheat' cultivars with greater cold hardiness and winter survivability, through identifying genes that confer low temperature tolerance. This project is jointly funded by AWC, Winter Cereals Manitoba Inc., Saskatchewan Winter Cereals Development Commission and the Western Grains Research Foundation.

Over at AAFC's Lethbridge Research Centre, another project is seeking to develop winter wheat varieties for western Canada with CWRS-like quality characteristics while maintaining or increasing yield, winter survival and disease resistance. The goal is to reduce, and ultimately eliminate, the price differential between spring and winter wheat to increase adoption of this environmentally friendly alternative to spring wheat.

The University of Alberta is working on a three-year project to

develop plant growth regulators that will increase wheat grain yield under both biotic and abiotic stress conditions. While AAFC Lethbridge and Concordia University are collaborating on research to improve water use efficiency and biomass production in wheat under drought stress, by tweaking development of stomata – the small openings found on plant surfaces that control the amount of carbon dioxide intake and water loss.

Planting into cold soils is often a fact of life in Western Canada, so also at AAFC Lethbridge is a project exploring whether early plantings of cold tolerant spring wheat cultivars, coupled with optimum agronomics, will extend the growing season and improve spring wheat yields.

After record hail events in 2016, a timely, Alberta based project is looking at crop management decisions in hail damaged crops with the aim to identify potential management strategies that could improve crop growth, harvestability, and yield after they have incurred hail damage.

Excess moisture has certainly been a major concern for many Prairie producers over the past few years and various projects are looking at excess moisture management strategies for cereal production, including one at the University of Manitoba. The project is looking to bring together an advisory group to collate existing information on what tools, techniques and management options are available that can maximize yields in the presence of excess moisture conditions in

Manitoba. A GAP analysis based on the group's findings will hopefully recommend where additional research work is needed to help producers cope with excess moisture conditions.

ADVANCING AGRONOMICS

A three-year project at the University of Alberta will identify which varieties of wheat, oat and barley are affected by synthetic Plant Growth Regulators and whether they are useful for lodging resistance.

Also at the University of Alberta is a three-year project to quantify the effects of long-term nitrogen and sulfur fertilizers on crop nutrient use efficiency and N₂O emissions on sulfur-deficient, prairie soils. The goal is to identify the importance of balanced fertilization to soil nutrient cycling processes and greenhouse gas emissions.

Other researchers at the University of Manitoba are trying to assess what influence wheat genotype, weather, growing environment and crop management has on gluten strength in CWRS wheat, which determines bread-making quality. The aim is to better understand the nature of wheat quality variation across the Prairies, so that producers and the value chain in general can meet customer requirements for quality bread products.

Around 50 different management systems will be tested to try and maximize yield and harvestability in wheat and feed barley during an extensive, multi-year project conducted by Sheri Strydhorst

with Alberta Agriculture and Forestry. The study will try to determine if stacking multiple agronomic practices, such as plant growth regulators, supplemental UAN, Agrotain, and/or foliar fungicides will increase yields and economic returns of wheat and feed barley.

Research at the University of Saskatchewan is looking at whether enhanced efficiency nitrogen fertilizers can mitigate nitrogen losses in single-pass seeding operations.

Manitoba Agriculture researchers should soon have data from a 2016 project that looked at the effectiveness of different nitrogen management practices on wheat yields and protein quality. The University of Manitoba is also conducting a two-year study into determining the most effective and efficient combinations of nitrogen timing, placement and source for midseason top-up applications to drive yield and protein in spring wheat in Manitoba conditions. Another University of Manitoba project hopes to develop hormone based genomic tools to enhance pre-harvest sprouting tolerance in wheat and barley, and reduce economic losses, especially in wet years.

Researchers at Lethbridge are working on developing new soft white spring wheat CPS and general purpose wheat varieties specifically for various growing regions in Alberta that have early maturity, higher yield potential and better disease resistance packages. The University of Alberta has a similar program to develop high

yield CPS and GP wheat varieties for the milling, animal feed and ethanol industry in Alberta.

PESTS, WEEDS AND DISEASES

There are many projects underway related to management of pests, weeds and disease. One, at the University of Alberta, will monitor the incidence and severity of stripe rust in Alberta, and identify new sources of resistance. Another project at AAFC in Lethbridge is developing a highly sensitive, specific and rapid detection system for stripe rust spores in the field. Detecting the spores before symptoms appear could give producers more opportunity to take control measures earlier.

Other University of Alberta research is looking at combining glyphosate and pyroxasulfone to provide an integrated approach for controlling both established and seedling foxtail barley. Synthetic food bait traps are being developed to monitor multiple cutworm pests, but not bee pollinators.

Orange wheat blossom midge is one of the most damaging wheat pests, causing around \$60 million in annual losses across the Prairies. Research at the University of Manitoba is seeking to enhance genetic wheat midge resistance in spring and durum wheat.

Aster yellow is a common disease in cereals but is often not detected, and there has been little research into the impact of aster yellow on seed production and quality. A project at the University of Saskatchewan is looking to fill the gaps in knowledge about aster

yellow and develop tools to predict yield losses and develop an economic threshold.

FUSARIUM

Alberta producers have yet to see the levels of Fusarium graminearum infection in their cereal fields that Manitoba or Saskatchewan producers have, and they aim to keep it that way. That's why AWC is funding two separate research projects with Alberta Agriculture and Forestry with regards to fusarium head blight (FHB) management. The first study is a comprehensive survey to determine how much of an issue the disease is in Alberta wheat and corn crops. The second will investigate an integrated approach to FHB management using readily-adoptable agronomic practices alone or in combination that have the greatest impact on FHB severity and losses in southern Alberta conditions.

Similar work is being done in Manitoba, where researchers from AAFC, Manitoba Agriculture, and the Canada-Manitoba Crop Development Centre are evaluating the impact of various seeding rates, variety selection, fungicides timing and applications on FHB management, with the aim to develop integrated strategies to manage FHB in spring wheat in Manitoba. Over at the University of Manitoba, a project is underway to support further development of FHB resistant cultivars through enhanced FHB screening.

Meanwhile, Saskatchewan has several projects underway that are attempting to minimize or eliminate the risk of fusarium infection in wheat. Researchers with the National Research Council of Canada (NRC) in Saskatoon are looking to develop genotypes with increased FHB resistance, and possibly better ergot resistance, by developing fully cleistogamous wheat and associated markers.

Another project also underway at the NRC will see the development of a rapid, accurate, and cost-efficient diagnostic platform to detect the presence of vomitoxin or DON, which is commonly found in FHB infected wheat. This project, which was funded by Sask Wheat and the Agricultural Development Fund (ADF), will also lead to the ability to identify and quantify additional FHB mycotoxins.

Another three-year project aims to upgrade a low-cost, paper-based, mycotoxin testing platform developed at Carleton University that will provide producers, elevators and processors with a fast, reliable and inexpensive testing technology for mycotoxins, which is simple to use on-site, without specialized expertise.

CROP PROTECTION ALTERNATIVES

A project at the University of Alberta is looking at whether naturally occurring antifungal lipids could be used as an economically viable alternative to fungicides in crop protection.

Dr. Doug Cattani of the University of Manitoba is leading a perennial wheat program that has established two intermediate wheatgrass nurseries in Carman to try and understand

the potential for perennial wheat in Manitoba. A similar project is being conducted at the Lethbridge Research Centre by Jamie Larson of AAFC.

GENOMICS

Now that the wheat genome has been sequenced and genetic markers are becoming available to breeders and scientists around the world, genomic research projects continue in a number of areas. They include a four-year project involving researchers across Canada and in the United States and Germany, which is looking to identify and develop improved genetic resistance to stem and stripe rust in wheat.

Work is continuing at the University of Alberta to screen Canadian and international spring wheat germplasm for FHB resistance using DNA markers and in-field methods,

and University of Alberta wheat breeders are trying to understand the genetics of early maturity in Canadian wheat to try and develop early maturing, high yielding, hard red spring wheat varieties for the Prairies. Another project is evaluating whether resistance genes for abiotic stress and diseases such as stripe rust and FHB in intermediate wheatgrass could be transferred into wheat.

Plant molecular geneticists at the NRC are using genome editing technology to increase yield and harvest index in wheat through manipulating the cellular carbon flux. Benefits of the project include making Canadian Prairie wheat more competitive in global markets by improving wheat yield and productivity using a novel, but non-GMO molecular approach.

Metagenomics is a branch of genomics which is a way to measure and access the genetic content of entire communities of plant organisms. A project at the University of Saskatchewan is looking to use metagenomics as a way to improve yield, water-use efficiency and heat-stress tolerance in major Canadian crops.

INCREASING RESEARCH CAPACITY

Expanding wheat research capacity is a focus for all provincial wheat commissions, and AWC is funding a project at the University of Alberta supports the continued research and development activities of the Canadian Western Hard Red Spring Wheat breeding program, and that will, over a five-year period, train and educate

three graduates in breeding, agronomy and related disciplines.

Sask Wheat has also developed undergraduate and graduate scholarships for University of Saskatchewan students in the College of Agriculture and Bioresources. Sask Wheat provides \$10,000 in undergraduate scholarships and \$100,000 in graduate scholarships annually. The first four graduate students receiving the Sask Wheat scholarships were announced in 2016, with three of the four students working on projects that have a significant focus on fusarium. **GN**

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.



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CROP DEVELOPMENT

Genes can control pre-harvest sprouting

Manitoba researchers are using new technology to solve an old problem

By Angela Lovell

Pre-harvest sprouting of cereal seeds in the field is directly linked to the seed's dormancy level. Plants produce different compounds that regulate physiological processes, including seed germination and dormancy. When seeds are dormant, even if they have adequate moisture, heat and oxygen, they simply won't germinate.

One of the factors which prevents seeds from germinating is a plant hormone called abscisic acid (ABA). Seeds with a high level of this hormone, or that are very sensitive to it, are dormant and will need some kind of additional treatment to kick start the germination process. Dry storage at room temperature is the most economical treatment to release seeds from the state of dormancy. When seeds are stored for an extended period of time, the amount of ABA or seed sensitivity to this hormone decreases rapidly when the seeds come into contact with water, so they

have a better chance of germinating when planted.

Dr. Belay Ayele, associate professor in the department of plant science at the University of Manitoba, is investigating what genes in wheat and barley seeds produce and degrade ABA. "We have identified some of the genes involved in the production and the degradation of this compound, and tested the functionality of those genes to see if they can alter the germination phenotype or the germination behaviour of seeds," says Ayele.

MAKING THE GENES WORK

Ayele's team has been working on this project for a couple of years. Progress would have been much faster if the wheat genome sequence, which scientists announced they had sequenced in early 2016, had been available at the start. Instead, Ayele's team started from scratch, using Arabidopsis, rice, barley and maize genomes as a template to help identify the genes in wheat that degrade ABA or control the amount of ABA that the seed produces.

"Wheat has three genomes, which makes it more complex than other crops," says Ayele. "When we had identified the ABA degrading genes, with our basic research program, we had to test them in another plant, Arabidopsis, the genome of which was sequenced 16 years ago. For testing the function of ABA degrading genes, we got some plant material where its ABA degrading genes were knocked out. We tested our wheat ABA degrading gene by putting it back into that plant material, and we saw a reversal on the germination phenotype.

"The original plant material was dormant because of the accumulation of ABA due to removal of the inactivating gene from the seed. But when we put our wheat gene back into that plant material, it started again inactivating the ABA, so the seeds germinated. We now know that we have identified the functional wheat gene which can control the accumulation of ABA in wheat seeds."

The next phase of Ayele's research involves testing the genetic material

in wheat plants, and to figure out the level of dormancy that they want to achieve using the gene. "It's a balancing act," says Ayele. "We don't want too much dormancy in seed because it may require an extended period of storage, which affects germination and seedling establishment, and in malt barley it can also affect the malting process. At the same time, we don't want low dormancy because it causes pre-harvest sprouting that causes the production of low quality seed, and if there is too high a level of sprouted seed in the seed lot, the market doesn't accept it for human food, it will go to animal feed. So there is a huge economic implication to producers if dormancy is too low."

Ayele is now working to find the genetic markers that can balance the dormancy in seeds. "We are working on breeding lines and germplasm collections of wheat to find alleles which give that balance so we can find optimum or intermediate dormancy," he says. To this end, the University of Manitoba and Agriculture and Agri-

Food Canada's Cereal Research Centre are collaborating on projects funded through the Western Grains Research Foundation, Manitoba Wheat and Barley Growers Association, and the Agri-Food Research and Development Initiative as part of Manitoba's Growing Forward 2 programs.

SEQUENCED GENOME HELPS

Now that Ayele and other researchers are beginning to have access to the wheat genome sequence, their work is progressing faster. "It has helped us identify target gene sequences and which chromosome those genes are located on, and from now on we don't have to go through long and complicated processes to do that," he says. "Now we can just go to the databases and get the information we want. It is very easy. It's a very good resource and it really facilitates our work."

Ayele's goal is to identify marker genes that control field sprouting in wheat and barley, to help breeders transfer of sprouting tolerance from germplasm into commercial culti-

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vars that have high yield but are susceptible to sprouting.

“If we incorporate such genes to elite cultivars, we can help producers achieve high yields, and the quality will be also maximized because it will not be susceptible to sprouting in the field. The application of such genomic tools significantly reduces the time required to breed cultivars with improved sprouting resistance,” says Ayele.

When a seed sprouts in the field, starches, which ultimately become bread or pasta, convert to sugars, which make end products, like bread or pasta too sticky. In North America, wheat or barley that contains more than four per cent sprouted grain is downgraded and rejected for human consumption. In countries like Japan, the acceptable level is even lower.

“Each region has its own market requirement, and with climate change, and the unpredictability of precipitation, and temperature, this kind of problem will be more and more prevalent,” says Ayele. “If we can develop the tools for breeders to use that will improve or mitigate pre-harvest sprouting it would be very helpful for producers.” **GN**

Angela Lovell is a freelance writer, editor and communications specialist living and working in Manitoba. Find her online at www.angelalovell.ca.



PHOTO: ONTARIO GRAIN FARMER

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FARM MANAGEMENT

Things are looking up, says a new U.S. survey of farmer attitudes

Leeann Minogue

According to Purdue University, farmers believe things are looking up in the U.S. farm sector.

The Purdue/CME Group Ag Economy Barometer is based on a monthly survey of 400 farmers from

across the U.S. The January survey came out more positive than the December survey, and was also the biggest month-over-month improvement in mood since they started this process in October 2015.

The survey's researchers attribute farmers' more positive attitudes to increases in key commodity prices like soybeans, cattle and hogs.

However, things are not all rosy. In January, 58 per cent of survey respondents said their farm's financial conditions were worse than a year ago. While only 39 per cent expect their farm financial conditions to improve in 2017, this is still the most positive response since the survey began, back in 2015.

Since the election of President Trump, 41 per cent of farmers surveyed believe they will be dealing with a less regulatory environment in the coming years.

As well as surveying farmers, Purdue University surveys "thought leaders" in the ag industry. Overall, the press release said, "thought leaders were a bit more pessimistic than producers as fewer respondents expected new contract highs and a larger share of respondents expected new contract lows to be set."

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GRAIN MARKETING

SPG studies the market for faba beans

A professional look at the market potential for faba beans finds some long-term options

By Lisa Guenther

When economist Joe Feyertag joined LMC International, everyone was focused on vegetable oils, he told CropSphere delegates. “Biofuel mandates were going up across the world.”

But Feyertag and his colleagues are doing quite a bit of work analyzing markets for lentils and other pulses these days, he said, as the plant protein market grows.

“That’s why Canada is going to play a very important role in the future in meeting that protein deficit that’s emerging around the world.”

However, what market exists for Canada’s growing faba green production is another question. To find some answers, Saskatchewan Pulse Growers commissioned LMC International to report on the market potential for fabas.

EXPORT MARKETS

Global demand for faba beans is now about four million tonnes, up from about 3.2 million tonnes in 1995. Nearly half that growth is in Ethiopia, Feyertag said. France, Morocco, Australia, Sudan, China, Egypt and Canada have also seen growth. Consumption has declined in the Mediterranean basin.

Despite that seemingly rosy picture, the global export market is limited. Feyertag said production has kept pace with demand in most countries. China’s production has declined. However, China used to be the world’s biggest exporter, so the country remains self-sufficient, Feyertag said.

That leaves Egypt, which has seen 107,000 tonnes of growth in consumption since 1995. But despite growing demand, faba bean

production has declined significantly in Egypt, Feyertag said. That’s partly because the government subsidizes wheat, so farmers prioritize the cereal. Plus, there’s not enough arable land to expand production, he added.

“If you’ve been to Egypt, you know that all the arable land is around the Nile. And that’s exactly where they’ve built the cities.”

Egyptian importers prefer large, high tannin faba beans, which have better cooking quality. Smaller ones mean lower prices. “They really take their faba beans very seriously in Egypt,” said Feyertag.

Australia dominates the Egyptian faba bean market, producing higher-quality beans than many of its global rivals. The U.K. and France also have substantial shares of the market. France produces the least desirable beans of the three, and is dinged \$60 per tonne compared to the Australian faba beans.

Should Canada focus on varieties coveted by global consumers? Feyertag doesn’t think so. Egypt will account for most of the future faba bean market growth, with the exceptions of small export markets in Morocco and Ethiopia, he said.

“If there is an export market that is concentrated in one single country, especially a country as politically unstable as Egypt, that’s probably a bad way to set up your industry,” he said.

Canadian exporters can fetch a premium if they sell between December and February, he said.

“And that’s not a coincidence. That is the space in between exports from the United Kingdom and exports from Australia.”

But sell outside that narrow window “then the premium falls right down.”

DOMESTIC OPPORTUNITY

Market opportunity for faba beans is much closer to home, in Feyertag’s opinion.

There may be opportunity for food consumption of whole faba beans in Canada, he said. Faba beans could also be fractionated to develop protein concentrates, although more research is needed.

“But if we do discover a functional nutritional advantage of using faba bean flour, faba bean protein concentrate, then that could potentially release huge volumes into the market,” said Feyertag. “That’s the wild card.”

The global export market is limited

Feyertag said AGT Food and Ingredients, Canadian International Grains Institute (Cigi) and the Sask Food Industry Development Centre are exploring faba bean flour use.

The pulse flour market is only about 100,000 tonnes in Canada right now, Feyertag said. Many food manufacturers avoid it because it reduces baking quality. But consumers want plant-based protein and more fibre in their food, he said.

Entering the whole food market would require high tannin varieties. Tannin reduces protein digestibility, so it’s not desirable in animal feed. But consumers like the bitter taste.

However, the sector needs to beware favism, a hereditary disease that destroys blood cells. Faba beans are one of the triggers of the blood disorder in the unlucky peo-

ple who are genetically prone to the condition. Most afflicted people have Mediterranean ancestry.

Favism is behind the faba bean consumption decline in the Mediterranean. Feyertag said faba bean breeders are working on varieties free from vicine, which activates the disease.

Faba bean protein would also face tough competition from soybeans. Soybeans are very high in protein and relatively cheap to produce, said Feyertag.

There are other challenges with faba bean protein. “The biggest problem we find is that you need to find value for the starch components,” said Feyertag.

DOMESTIC FEED MARKET A SAFE BET

Adjust costs on a protein basis, and faba bean is a cheaper protein source than anything else, said Feyertag. “It’s already used by hog and poultry farmers. And feed millers buy it when it’s at a discount to peas.”

Vicine not an issue in livestock feed, according to research so far. Neither is lygus bug damage or bean size. Plus starch is seen as an energy source in the livestock industry, he added.

Snowbird is currently the dominant faba bean variety in Canada, and as a low tannin cultivar, it works fine for the feed industry. So does CDC Snowdrop, which sits at number two in Canada.

Feyertag pointed out that faba beans can be grown closer to the feed industry, making them cheaper to truck than soybeans in Manitoba or the U.S. Because faba beans can be grown north of the border, feeders could also avoid currency risks.

Just how big is the feed market? The hog and poultry market in Alberta and Saskatchewan could take between 220,000 and 500,000 tonnes of faba beans, depending on one’s optimism, Feyertag said. The Atlantic salmon feed market could also take up to 113,000 tonnes of raw material, which would be turned into protein concentrate.

“And then if you look at the beef cattle sector, then you’re talking about seven to nine million tonnes.”

Faba beans would be competing against other ingredients in a price-sensitive sector. But Feyertag doesn’t see anything stopping faba beans from competing.

Feyertag took questions from the floor at the end of his presentation. Brad Goudy, a marketing consultant from Melfort, said that he’d put together a production contract for faba beans as feed. He asked how they could build a good base for a feed market.

“The real solution to the feed market is volume,” Feyertag said. “(Feeders) can’t buy a tonne of faba beans here and there. They need tens of thousands of tonnes.”

Faba bean growers would have to accept lower prices until feed mills realize faba beans are a good source of protein, and the volume reaches the market, Feyertag said.

“Once that happens prices will adjust on a protein-level basis, as long as there aren’t any other disadvantages of using faba beans against peas or against soybeans, which as far as I’m aware, there aren’t.” GN

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Follow her on Twitter @LtoG.

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GRAIN MARKETING

Would fabas fit in your crop rotation?

Faba beans have potential, but markets are still feeling facing growing pains

By Lisa Guenther

As diseases take a bite out of western Canadian crops, farmers are looking for new rotation options.

"Faba bean is not susceptible to root rot. Quinoa is not susceptible to fusarium. So it's two crops that we can grow over here that may fit well into our rotation," says Brad Goudy, owner of Goudy Ag Products and a grain marketing consultant based out of Melfort, Sask.

Growing new crops is one thing. Marketing them is quite another. While Goudy sees potential in both the faba bean and quinoa markets for growers, there's plenty of work involved to reach that potential.

Goudy isn't a broker. He explains he charges clients an annual fee for his services. He also runs a hedging course to help his clients improve their canola and wheat marketing chops. Goudy started consulting three years ago, with 60 clients. At that time, 80 per cent or more of his work was oats. He worked with oat buyers, growers, shortlines, and Canadian National to get oats to market.

(If you're wondering why the Goudy name seems familiar it could be because Brad's dad, Ken, developed Treflan for use on rapeseed in the 1960s and 1970s. He also worked toward producing generic glyphosate for the Canadian market once it went off-patent.)

Many of his clients grew high tannin faba beans. Since then, that market has dried up, he says, and they're focusing on the feed market now. "A lot of guys are interested in growing them, but the big thing is finding a stable market."

One of Goudy's buyers was interested in faba beans as hog feed, but needed a steady supply. Goudy started working on a contract during the Crop Production Show in January 2016.

Goudy started signing up faba bean growers in the Parkland. He realized he'd need more farmers to fill the contract so he organized meetings with interested growers from east of Yorkton to Lloydminster. "It looks like we've found another 60 guys who want to join in with us and produce fabas."

Since then Goudy says he's been talking to other companies looking for a steady supply of faba beans for their feed rations. That's allowed him to sign up more farmers and increase his current clients' faba bean acreage. It also spreads out the production area, he adds.

Farmers can certainly grow faba beans on spec, as they do with most crops. But Goudy is asking growers to sign up for his services so he can manage the market. He says he wants to create a win/win for buyers and growers.

"I don't want to be ignorant or seen as mean or whatever. But there is real opportunity to over-produce this and blow the whole thing up before we really get the benefit out of it."

He did catch some flak from farmers who were already supplying local barns during one of the meetings. But he says he's trying to organize farmers, not steal their business. If a hog barn doesn't have a guaranteed steady supply of faba beans, they aren't likely to get into them, Goudy says. Switching faba beans in and out of rations doesn't work well for the animals.

At interview time in mid-February, Goudy was still looking for a few more farmers, and still getting calls from companies looking for faba beans.

FABA BEAN FLOUR

Goudy had just returned from a faba bean conference in North Dakota at interview time. North Dakota pulse growers are running into similar problems with root rot as Saskatchewan growers, and are looking to faba beans as a way to keep pulses in their rotations.

He'd hoped to suss out an opportunity to ship faba beans south of the border. But the AGT flour fractionation plant in North Dakota isn't taking Canadian faba beans right now.

"It's a very small market at this point." AGT is encouraging pet food companies and others to try faba beans because of the nutritional and taste qualities, he adds.

Goudy has been talking to people at Canadian International Grains Institute (Cigi), who has been incorporating pulses into flour.

"They've had a number of companies express a lot of interest in it. And what they've said is the (faba bean) flour is 50 per cent higher in protein than pea or lentil flour," says Goudy. Faba bean flour also has a milder taste than other pulse flours, he adds.

Another plus is that the smaller low tannin varieties work for fractionation, Goudy says. Most of the tannin is in the hull, he explains.

Still, food processors, and Goudy himself, are concerned about favism. Favism is a hereditary blood disorder that switches on when people are exposed to various triggers, including the vicine in faba beans. It affects a small part of the population but Goudy thinks it's the biggest area of concern for the food consumption market.

"I don't want to see us forging ahead on this and then find out we're creating a problem or a liability even."

Whether plant breeders or food processors can remove the vicine remains to be seen.

Goudy would like to take a closer look at flour fractionation once they've grown faba bean feed acres. Goudy's ideas right now include partnering with someone to build a plant, partnering with an existing plant that will produce faba bean flour, or working with a plant in an export market that is already using faba bean fractions. Moose Jaw and Brandon are build-

ing pulse flour processing plants. Goudy says they're not planning to mill faba beans yet, as the acreage is too small.

The market is in the interesting stage, Goudy says, where there's lots of potential. If the industry keeps promoting faba beans over the next two or three years, he thinks there will be a lot more opportunity for faba bean flour. **GN**

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Follow her on Twitter @LtoG.



For more information on Brad Goudy's grain marketing services, visit proactiveproducers.com.



Faba bean is not susceptible to root rot.

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CROP PROTECTION

Conquering wild oats in your fields

Tight rotations and resistant plants mean wild oats are prevalent on the Prairies

By Dilia Narduzzi

We spend more money trying to manage wild oat in Western Canada than any other weed, says Dr. Neil Harker, a weed ecology and crop management scientist with Agriculture and Agri-Food Canada. "It's a driver weed." Here's a bit of a refresher on wild oat, what's new with research, and what you need to know about managing this weed today.

Wild oat is similar to wheat, says Harker, and that's part of the reason that it is so prevalent on the Prairies. The other reason is that it is a summer annual weed,

"and growers now almost exclusively grow summer annual crops: wheat, canola, lentils, peas."

Because of this, these crops favour summer annual weeds, like wild oat, wild buckwheat, and green foxtail, says Harker.

The reason wild oat is particularly difficult to control is because some of its seed is dormant in the soil, so "when it sheds its seeds, they can last for quite a few years in the soil."

Wild oat is prevalent all throughout the Prairies, "there's really no place that it seems to thrive better than others." Part of the problem in treating this weed is that much of it has become resistant to herbicides over the

years. Like any plant, there are always resistant mutants in the population, and over time those resistant to a frequently-used herbicide take over, says Harker, "because you're doing the same thing over and over again," that is, planting the same crops and using the same herbicides.

Interestingly, says Harker, "the really old ways of treating wild oat, before herbicides, were fairly effective at controlling the weed." This included very diverse crop rotations, growing perennial forages or root crops like potatoes, as well as using the stale seedbed technique, where farmers plant late. In stale seedbeds, wild oat would grow in the spring, farmers

would "till them all down, and plant the crops later." These techniques suppressed wild oat, but did provide the dramatic impact herbicides did, with very little effort, says Harker. Once herbicides became prevalent over the last 40 years, farmers stopping using the old methods and depended almost solely on herbicides. Over time, the mutant plants that were resistant to herbicides before herbicides were even applied, took over. That's where we are today, and that's where the problem comes in.

Harker and his colleagues have just published research in the journal *Weed Science* about how the "most common rotation on the Prairies, which is canola-wheat-canola-wheat," in a full herbicide regime, compared with more diverse rotations, which included perennial alfalfa, early-cut silage and winter cereals, like fall rye and winter wheat with much less herbicide." They also used a higher seeding rate in the diverse rotations, says Harker. "We found that you could go three years without using wild oat herbicides, if you used these other techniques (higher seeding rates, early-cut silage, planting winter cereals or alfalfa) and effectively manage wild oat."

grow something other than canola and wheat crops over and over again."

Thinking to the future is part of what needs to happen. Harker says they are encouraging farmers to sacrifice a bit in the short term for those future benefits. But this isn't all about sacrifice; it is partially about changing mindsets.

Winter wheat, for example, is profitable but farmers don't grow it very much because it takes them out of their comfortable summer annual crop routine. And winter wheat "is so competitive with wild oat you don't even need a wild oat herbicide." So by planting it, "you take a whole year of selection pressure away," meaning wild oat population resistance to a particular herbicide is delayed. Some farmers even find winter wheat more profitable than spring wheat, says Harker.

Other options include trying alfalfa, "if you can find a market for it. It is a perennial that is cut twice a year, meaning weeds, including those resistant to herbicides, don't have a chance to go to seed." The key is finding some options on your farm that allow you to reduce herbicide frequency or avoid herbicide applications some years. Then when herbicides are applied, there will be more susceptible plants in the weed community.

There are other also other tools, says Harker. One is chaff collection (invented in Canada). Most combines spread the most successful weeds (the ones that have escaped your management) all over the field in the chaff fraction.

In Australia, where weed resistance is a much more serious problem, chaff collection, burning chaff windrows and machines like the Harrington Seed Destructor are becoming more popular; they have few other weed management options left. "We're not quite there yet, but will be, says Harker, if no changes are made." You may need to invest in some new equipment or hook-up an old chaff cart to really get involved in weed resistance management.

What's definitely true is that if things stay status quo on your farm, canola-wheat-canola-wheat will eventually be less profitable. "Many southern U.S. cotton farmers have very few effective herbicide options left; those that are left are much more expensive and reduce profitability. They got there by growing continuous cotton or by rotating to another crop that used the same herbicide. In some parts of the Prairies, we have wild oat that resists all Group 1 and Group 2 herbicides," says Harker, "and those are the herbicides that farmers depend on in many crops." **GN**

Dilia Narduzzi is a freelance writer in Dundas, Ont.

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HART ATTACKS

Just the for record, I do have three readers

And if you need a climate change speaker call Bruno for a good time

By Lee Hart

My walk down memory lane through the pages of a 1938 *Country Guide* magazine (in the Feb. 7, 2017 issue of *Grainews*), and my deep analysis of the climate change/global warming issue (Jan. 24 issue of *Grainews*), drew some feedback from several readers. I figured this update would show just how this column can change peoples' lives. (Hold on... I'm no Dr. Phil – their lives weren't changed. I was just thrilled to hear from people who actually read it. Maybe it was just life changing for me.)

In looking at an 80-year-old issue of *Country Guide* which was actually a pass-along – Mrs. H.W. Baker of Canwood, Sask., was the original subscriber who paid for it – but from that issue I mentioned a few brand names and products from the past including Horse Shoe Brand horse harness from Winnipeg, and I also made mention of farmer H.B. Grant who in 1938 owned Deer Lodge Farms at Standard, Alta. H.B. used a very efficient Caterpillar D4 tractor on his farm east of Calgary.

HORSE SHOE COINCIDENCE

JANUARY, 1938, PAGE 19
I bought
this set of
HORSE SHOE
BRAND HARNESS
34 years ago



Mr. G. S. Webb, of Elton, Saskatchewan, writes:

"I bought this set of two-inch, three-ply Horse Shoe Brand harness from you in 1904. I used to work with a team in the city at that time, and you will know what harness of that kind sold for at that time. I am still using that same set and am not afraid to put it to the hardest jobs yet. I am farming 960 acres of land now, and all my harness are Horse Shoe Brand. How much per year has my first set cost me?"

Mr. Webb has set a record for harness economy that is hard to beat. His one set has given the service of four.

Gordon Schlamp of Thorhild, Alta. (north of Edmonton), was the first to get in touch to describe one of those weird coincidence events.

Schlamp is an auctioneer mostly, but also keeps about 100 cows and a few horses. I don't know if he is a packrat, but he did say at auctions he's been known to buy those boxes of odd pieces that "no-body else wants" – and that's included a fair bit of horse harness.

The past couple winters he has spent evenings in the shop going through and cleaning some of this old

harness. "The other night I just happened to be cleaning up a pair of bridles which were the Horse Shoe Brand and I was wondering at the time if anyone else alive remembers that brand of harness," says Schlamp. "About an hour later I was sitting down in the house reading your article in *Grainews* where you mentioned the Horse Shoe Brand. I just thought it was a quite a coincidence."

Schlamp says the Horse Shoe Brand is the only bridle he's seen that uses aluminum plates for blinders. Usually bridle makers used a metal plate covered with leather, but the Horse Show Brand were just straight aluminum blinders. Schlamp also had an old bridle and harness made by Walsh. "My dad always remembered their slogan 'no snaps to wear or buckles to tear.' They used leather loops instead of snaps and buckles," he says.

OWNED THE FARM

Another call came from Vern Hoff from the Gleichen area, about an hour east of Calgary. What caught his attention was the name of H.B. Grant in the same column about the old *Country Guide* issue.

"At one time I owned the farm that H.B. Grant use to own," says Hoff. At 85, Hoff is retired but still lives on his farm near Gleichen. Many years before, when he was starting out he owned the H.B. Grant property further north near the largely Danish community of Standard. "I was a bit of an interloper but they accepted me anyway," he jokes.

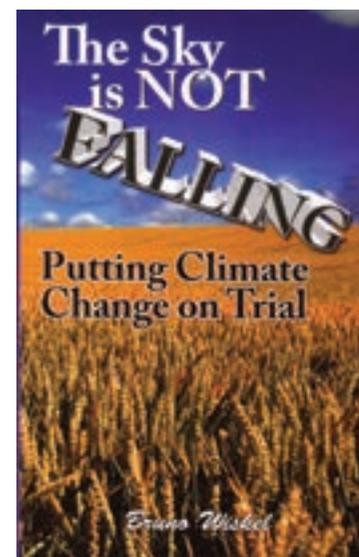
H.B. Grant was an American from Iowa who owned the four-section farm at Standard, which he named Deer Lodge Farm. "I would say in those days it was one of the larger farms in the area," says Hoff. He recalls he didn't get much notice about seeding his first crop after taking over Deer Lodge Farm land.

"H.B. Grant had sold the farm to another family and then there was some mix up in that sale," says Hoff. "I was also interested, and it seemed like all of sudden there I was on May 2 that year the proud owner of four-sections of land that needed to be seeded. But I was young and all rarin' to go." Hoff later left the Standard area and bought the farm near Gleichen where he is today.

"But if you ever come across the Standard community history book, there is a picture in there of H.B. Grant and his Caterpillar tractor," says Hoff.

THE SKY IS NOT FALLING

And after reading my Jan. 24 column with thoughts on global warming/climate change and the new carbon tax I had an email from long-time *Grainews* reader Bruno Wiskel, who farms and writes near Colinton in north central Alberta, north of Edmonton.



Wiskel reminded me, if readers were looking for more facts on the issue, he wrote a book on the subject *The Sky is Not Falling – Putting Climate Change on Trial*. He says if you are among those who doubt the motives of environmental groups and question the science "alarmists" are using, you should read his book.

The Sky is Not Falling is only 118 pages and has plenty of photos and illustrations too, so it is a relatively easy read. Wiskel, as a geologist, farmer and "expert witness" approaches the climate change issue as a detective would approach a crime.

He assembles scientific evidence in an understandable language, with a relaxed and humorous writing style. In reading the book "you get to be judge, jury and executioner," says Wiskel. "Read it and you will never again believe that mankind is causing climate change."

If you are looking for a copy of the book, or if you looking for a great speaker for your next conference of workshop, Wiskel is your man. Along with being a farmer, and professional geologist, Wiskel is also a member of the Canadian Association of Professional Speakers. I've known him a little bit for many years. Back in those days when he wasn't doing geology stuff, he was a young guy growing oats and barley, had a market garden and a trout fish pond. Today, as "one man – many fields" he has an extensive tree and shrub nursery.

He is thought provoking, challenges some status-quo thinking, and is definitely entertaining. He says he can deliver a talk with "orgasmic intensity"... although that may have to be left to the eye or mind of the beholder.

For more on the book, or talk about speaking engagements visit his website: www.brunowiskel.com. **GN**

Lee Hart is a field editor with *Grainews* based in Calgary. Contact him at 403-592-1964 or by email at lee@fbcpublishing.com

FARM FINANCIAL PLANNING

Income issues block couple's retirement

Working, good investments and selling the land, will fund this couple's retirement

By Andrew Allentuck

In south central Manitoba, a farming couple we'll call Jorg, 59, and his wife, who we'll call Carole, 57, want to retire. Their 480-acre mixed cattle and grain operation has not been very profitable for many years. To keep the farm going, they have had off-farm jobs, diverting their income to the operation. Now, nearing their 60s, they would like to hand the farm over to their sons, ages 25 and 32. The boys would love to take over the farm, but they cannot afford to buy the farm from the parents nor can the parents afford to give them the farm. Their off-farm investments are modest — just \$52,500 in RRSPs and the farm home which is included in the estimated \$860,000 value of the farm and its buildings.

There is a deal on the table. A neighbouring farmer has a full-time job for Jorg at \$30,000 a year. The neighbour would buy 160 of Jorg and Carole's 480 acres for \$250,000 and rent back to 60 acres of pasture for \$1 per year. As well, the neighbour would rent the adjacent 160 acres that Jorg owns for \$11,200 per year with an option to purchase that quarter for \$300,000 in six years when Jorg reaches 65. The neighbour has expressed an interest in buying the whole farm but the offer has so far not gotten much attention from the couple.

Reviewing the case, Don Forbes and Erik Forbes of Forbes Wealth Management Ltd. of Carberry, Man., suggest that the deal could work. Both Jorg and Carole are eligible for the qualified farmland capital gains exemption. If the farmland market value is estimated at \$860,000, far more than it actually is, and the book value, \$144,000, is deducted, the remaining value, \$716,000 will easily be offset by the exemption. If sales of parcels are staggered, it is likely that no income tax will be paid, Don Forbes notes.

THE PLAN

The plan should therefore be to sell 160 acres for the \$250,000 offered and use the proceeds to open and fully fund Tax-Free Savings Accounts that have a

present limit of \$52,000 per person and the invest the balance in a non-registered investment account. Carol and Jorg have abundant RRSP space, but their income would make such investment tax-inefficient.

Next move: rent the remaining 160 cultivated acres for \$11,200 a year until retirement at 65. If the neighbours are willing to purchase all of their remaining land for \$480,000, that offer ought to be given very serious consideration. If conservatively invested at six per cent before inflation, it would generate \$28,800 per year before tax. In this friendly deal, the farm home, which is not part of the contemplated sale, would remain the property of Carole and Jorg.

Nearing their 60s, they would like to hand the farm over to their sons, ages 25 and 32

Jorg has \$7,500 in his RRSP. In six years to his age 65 with a six per cent annual return, it will grow to about \$10,000. Carole has \$45,000 in her RRSP. In the next six years, assuming she retires and converts to a RRIF at her age 63 when Jorg is 65, it would have an approximate value of \$56,000. She can start taking RRIF payments of \$2,000 a year with no tax. When she is 67, she can raise her RRIF payments to \$4,000 a year. The extra \$2,000 RRIF credit can be transferred to Jorg's return. The \$2,000 and then \$4,000 RRIF payments will last into the couple's 90s, though the sums to be paid will be very little after about 20 years, Erik Forbes estimates.

When both partners have reached 65, they can have retire-

ment income of as much as \$28,800 with \$6,240 from the maximum TFSA investments at \$52,000 each, two Old Age Security payments of \$6,942 each at 2017 rates, and modest payments from CPP accounts of \$3,000 per year for Jorg and \$4,500 a year for Carole with a two year or 14.4 per cent discount for starting payments two years before she is 65. Their total incomes before tax will be \$66,664. They would each pay about \$4,500 income tax, with no tax on the TFSA payouts. Their net after-tax income would then be \$57,664.

STICKING TO THE PLAN

This is a best-case scenario. Jorg and Carole have to work to 65 and 63, respectively. They will have to obtain solid investment returns from all their financial assets. There will be no farm assets transferred to their sons, though the sons might design a work-to-own plan with the neighbour who buys the farm.

The five years interim between the plan and the sale of the farm would have to be documented with a penalty for each party if the deal is abandoned. Moreover, obtaining six per cent a year from financial assets, which would really be about four per cent after inflation, will take careful selection of conservatively chosen stocks that pay dependable dividends of 3.5 to 5.5 per cent with the underlying shares rising at a few per cent a year.

The assets to be chosen, perhaps with the aid of a financial planner, should be large cap shares of major Canadian corporations. "Large cap" companies are those that are well known on the market. It's essential that they be Canadian so they can make use of the dividend tax credit. At the income level Jorg and Carole will have, the tax credit, which puffs up the bottom line of taxable income, will not expose them to the OAS clawback which begins at about \$74,000 each of personal income.

Large cap stocks which fit the

Continued on Page 35 ►

JORG AND CAROLE'S ANNUAL INCOME

Investment Income	\$28,800
RRIFs	\$4,000
TFSA (\$6240 x 2)	\$12,480
OAS (\$6942 x 2)	\$13,884
CPP	\$7,500
Total Pre-Tax Income	\$66,664
Taxes:	-\$9,000.00
Annual after-tax income:	\$57,664

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► Continued from Page 36

bill would include chartered banks that pay dividends in range of 3.5 to 4.2 per cent, major utilities that pay dividends of as much as 4.5 to 5.5 per cent, and telecommunications firms which pay dividends in a range of 4.5 to 5.5 per cent.

The couple could skip stock selection and instead buy an

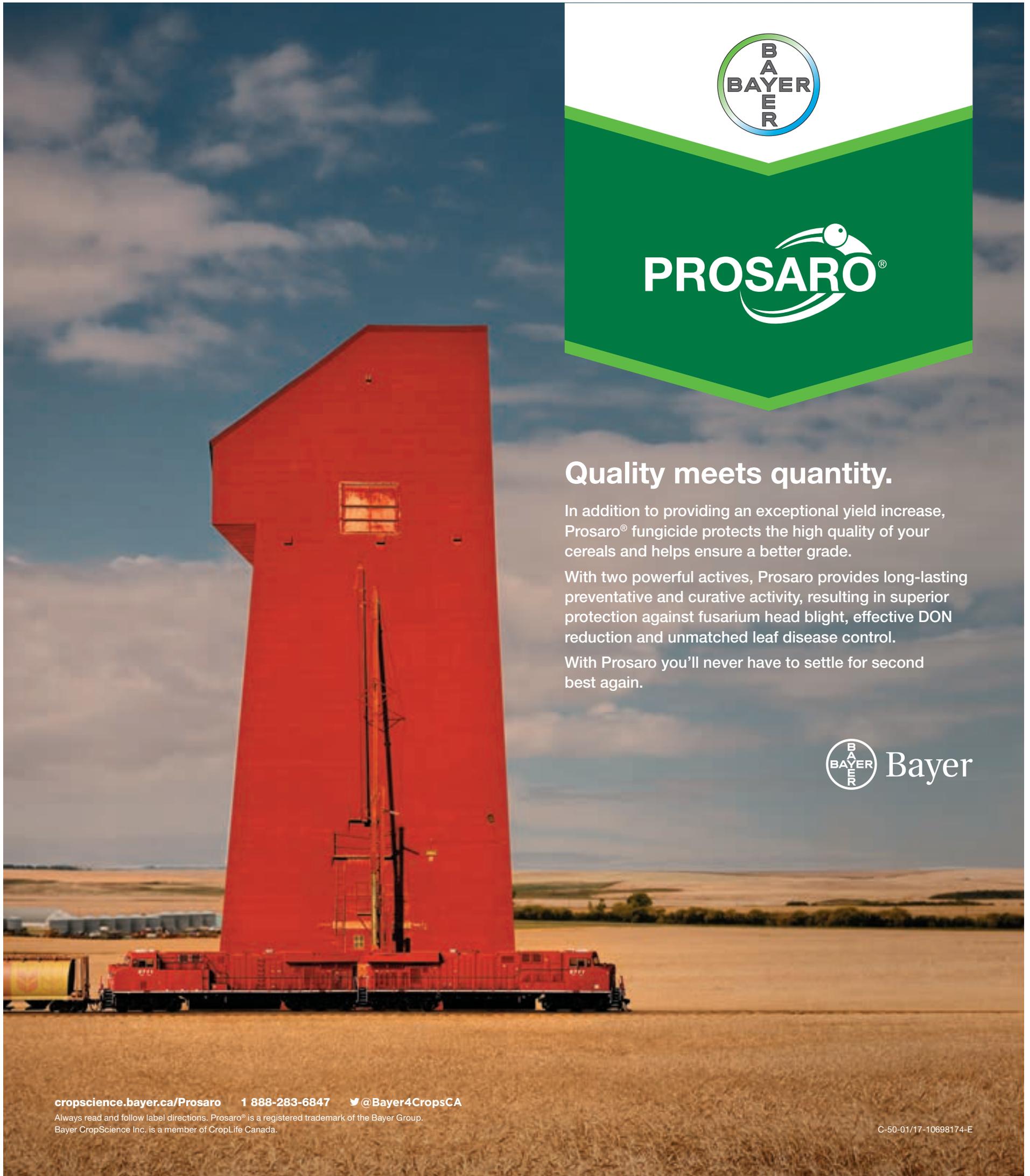
income-focused exchange traded fund with yields in the range they require. These ETFs have management expense ratios of less than 0.5 per cent a year and some even lower. Each ETF has its quirks of stock selection, so the couple could buy a few and avoid the magnifying glass issues of ratios of banks to utilities make each income ETF a little different from the competition.

“This plan will keep the couple in the lifestyle they know with little financial risk,” Forbes explains. “It requires that they keep working until they can take OAS. Jorg has to work to 65 to get his CPP in full and Carole, retiring at 63, will take a cut of 7.2 per cent per year in her CPP. But the sacrifice is small. In any event, CPP and OAS are life annuities and the operative word is “life.”

There are potential variations in the plan, including selling most of the 480 acres to the neighbour and retaining pasture for rental or a few acres for a large garden. Moreover, the sale document could be written to allow a buyout or a partial buy-in to the neighbour's operation by the sons if, in the next five years, they can accumulate enough money to make it work.

“This is a survival plan for Jorg and Carole,” Erik Forbes explains. “It will work, it has some flexibility, it provides a modest retirement income, and it can allow the sons to buy in if they can get the money. For Jorg and Carole, it is a good deal.” **GN**

Andrew Allentuck is author of “When Can I Retire? Planning Your Financial Future After Work” (Penguin, 2011).



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UNDERSTANDING MARKET BULLS AND BEARS

Locking your crop prices in early

Some farmers are afraid to take on the risks of pricing too early in the growing season



Brian Wittal

bfwittal@procommarketingltd.com

In my experience, most farmers will not price grains six months prior to seeding because it seems too risky — they're concerned about delivery risk. How can you reduce or eliminate delivery risk so that, if prices are profitable early in the year, you're not afraid to price some or most of your crop and lock in a profit? Here are some strategies.

You can use a futures hedging strategy to establish a floor futures price. This doesn't require a delivery commitment so you're free from delivery risk, but there is a cost, including potential margin calls. This allows you to wait until closer to harvest before you price any grain for delivery — reducing your risk of having to buy back a contract if you can't deliver because of a production or quality wreck.

PUT AND CALL OPTIONS

You can use a put option strategy, which does the same thing as a futures hedge — it sets a floor futures price. The difference is that you pay an upfront premium for the option and there is no risk of a margin call. Options contracts are used by farmers more often than futures hedges. The premium you pay for an options contract will likely be more expensive than that for a futures contract.

At some time you still have to contract your grain for delivery. Using a call option, you can do that and still reduce your delivery risk, so you feel comfortable forward pricing grain early in the year.

Let's say a grain company offers an attractive basis on a deferred delivery contract early in the year for fall delivery, and you're concerned about delivery risk. You can buy a call option for the same number of tonnes you pre-priced. A call option, an option to buy a set amount of grain at a certain price, would protect you if you were unable to meet your contract obligations due to a production wreck.

If the futures prices rise between when you sign the contract and when you have to buy back the contract, the value of your call option will have increased by the same amount as the increase in the futures. Your contract buy-back costs will be covered by selling your call option, other than other than administration costs.

If futures prices fall between when you sign the contract and when you have to buy back the contract, you've secured a good price for delivery and gotten some cash flow. The call option was insurance against delivery risk.

BARLEY AND PULSE CROPS

The contracts out there for malt barley and pulse crops range from basic production contracts with no pre-pricing requirements and no Act of God clauses to production contracts with full Act of God clauses and a requirement to pre-price 50 per cent of production.

The best contract for your farm depends on the risk you want to take on.

Signing a production contract means you are at least in the door, so to speak. If you grow a quality product you will be able to move some and maybe all of it through this contract.

You may be required to pre-price a portion of your anticipated production. But with the Act of God clause, if you end up not producing a quality product you are released

from the contract with no buyback penalty or costs.

Some pulse buyers may give you the option to take an Act of God clause. If you take it, they'll offer you a lower price to offset the risk they take on. You need to decide if you're willing to take that risk.

Pulse crops and malt barley bids are derived on a sale-by-sale basis. Companies make sales to end users and then post bid prices. Quite often the first price offerings for the coming year are merely an incentive to

get producers to commit to seeding that crop in the spring, to ensure that supplies will be available to meet the companies' demand. Often those early offers can be some of the best prices for the year. They usually don't last long, as the companies are only willing to take on so much pre-priced risk heading into a year of many unknowns.

Using these types of strategies can help you lock in profits with little to no risk, early in the year. Locking in profits is never a bad thing.

Using these strategies will help you develop a better and more disciplined approach to marketing based on your cost of production, breakeven numbers and cash flow needs. Overall, you'll see an improvement in your overall pricing results. **GN**

Brian Wittal has 30 years of grain industry experience, and currently offers market planning and marketing advice to farmers through his company Pro Com Marketing Ltd. (www.procommarketingltd.com).

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CAN'T TAKE THE FARM FROM THE BOY

A woman's place... on a modern farm

Toban Dyck turns the keyboard over to his wife Jamie, to describe her role on the farm



Toban Dyck
tobandyck@gmail.com

Calgary recently hosted the annual Advancing Women in Agriculture Conference. Women in agriculture is an important topic, and one in which I am wholly unqualified to write about.

I would like to introduce you to Jamie Dyck. She and I got married in 2001, outside, in her parents' back-

yard, after a three-day deluge. We are in this farming thing together. It is our operation. And this particular column is hers to write.

WOMEN IN AGRICULTURE

When Toban's ancestors homesteaded what is now our farm, I don't know for sure, but I don't think the women were sitting around twiddling their thumbs and eating bonbons. More likely, they were out alongside their menfolk clearing brush, digging sod houses (and then,

later, building wooden ones), milking cows, slaughtering pigs, plowing fields, seeding fields, harvesting and threshing grain, chopping wood, building fires as well as raising children, growing gardens, preparing food, doing laundry, cleaning the aforementioned sod house (however that was done) and trying to survive. The females were farmers, too. They had to be. And I'm sure, in some cases when the menfolk were sick, injured or non-existent, women did all of the work themselves.

And the female farmers of today are really no different, are they? An ever-increasing number of females identify as farmers. Not farmers' wives.

They are making big farming decisions. They are purchasing and selling equipment. They are overseeing livestock operations. They are deciding on crop rotations, soil enhancements and chemical applications. They are waiting for the price of soybeans to go up just a little more before they sell. And they are bringing food to the field, moving

equipment from one place to another, dropping off samples at the elevator, making sure the kids get to all of their activities even in the busy season of seeding and harvest and trying to make sure the household doesn't fall apart.

Or they are working in jobs or careers off the farm to ensure that the farm can actually stay afloat.

I work full-time as a teacher, a few miles from the farm where we live. In a town that has agricultural roots and thrives in part due to the agri-business, some of the people I work with have ties to farms.

One female teacher is on the combine on the evenings, weekends and holidays during harvest. Another drives the grain cart on her family farm when she's got a spare moment. They probably don't need to be doing these things and no one would fault them for taking a little break after a long day of motivating eight-year-olds. But they take on these tasks because they enjoy it, because they know how, because they want to help.

I'm not there yet. Although, I do see myself moving in that direction. As Toban becomes ever more involved in the practice of farming, I find myself taking more responsibility. Recently, I have taken over the books, not for the farm as a whole, but for the acres that we are in charge of. I've got a knack for that sort of stuff. And part of the reason we can take the giant risk of becoming farmers is because I work full-time in a job that has plenty of security and a pension attached.

At the beginning of our farm journey, it was my paycheck that bought the fuel and the groceries, paid the mortgage and kept clothes on our backs. And it may come to that again.

When we first moved to the farm, I learned to drive the ATV. Last summer, I learned to drive our small but powerful open-cab Massey Ferguson. I've raised chickens and ducks. I've done some market gardening. I will continue to take food to the fields and drop off pick-ups and/or farmers at various field locations.

Next year, maybe, I'll try my hand at driving grain trucks. One day, I'll drive the combine. I dream about how to integrate my love of teaching with giving students an opportunity to learn how to grow their own food, look after animals and be good stewards of the land.

And so I contribute, perhaps not as an equal partner. Not in the farming, anyway. Not yet. But I plan to get there.

So if you are a woman and you are reading this and you think, "My spouse is the farmer," think again. Think about how your contribution to the farm makes a difference. You are making one — perhaps in a way that the outside world would label you a "farmer," perhaps not. But that doesn't mean you can't call yourself one. GN

Toban Dyck is a freelance writer and a new farmer on an old farm. Follow him on Twitter @tobandyck.

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REPORTER'S NOTEBOOK

Facing up to the truth about climate change

If we want consumers to accept the judgement of science, we need to return the favour

Those pants look terrible on you. Perhaps you've experienced that awkward moment when you try to stop a friend from committing a fashion faux pas. If so, you may have agonized how to word your concerns to avoid offense, while still getting your message across.

It's a potentially volatile moment that perfectly captures how I feel writing this column.

What I'm trying to say is this: If you tell consumers that they shouldn't be worried about GMOs because science says they're safe, but deny climate change in the next breath, you lose credibility outside the ag echo chamber.

Yes, there are scientists who claim climate change is a hoax, or not caused by humans. But quoting them is like quoting Dr. Oz to justify the latest food fad. The majority of climate change scientists say that our climate is shifting, and that shift is caused by us. While the climate has changed without our help in the past, that doesn't rule out human causes this time.

I can understand why many in the ag industry view climate change activists with scepticism. They are often self-righteous, and that's annoying as a restless cat at 4 a.m. Some use a particularly hot day or severe storm alone as evidence of climatic catastrophe, and that's not necessarily correct. But neither is that recent cold winter evidence that things are okay.

Climate change is more like the tide coming in than a tsunami crashing over us — a shift in weather patterns that unfolds over decades. It might not be apparent that there's a problem until you find yourself up to your nose in sea water.

INSURANCE INDUSTRY DATA

I was browsing around Munich Re's website (munichre.com), hoping to find some bit of info to win you all over. Munich Re is a global insurance company that provides both primary insurance and reinsurance. The company is based in (you guessed it) Munich, Germany.

If you search "climate change" on

Munich Re's website, you'll find some fascinating fact sheets. According to Dr. Eberhard Faust, head of Munich Re's climate risks research, the melting ice in the Arctic will not cause sea level rises. He writes that the ice is in a state of equilibrium with surrounding water. If you've ever had a scotch on the rocks and waited long enough for the ice cubes to melt, you'd find the level of the fluid in the glass doesn't change, he further explains. Same concept (basically).

It's not all good news. Faust writes that if the climate warms by 2 C:

- Central and Southern Europe are likely to see more flooding, due to more precipitation. Northern Europe will likely see less extreme flooding because there will be less snow accumulation.
- Europe will likely see more than double the number of heat wave days, and the Mediterranean will be even hotter.
- Losses from drought, storms, etc... in France could nearly double by 2040.

One thing I like about Munich Re's information is that they try to separate natural climate variability from man-made climate change. For example, the site explains how the ocean and atmosphere affect Australia and New Zealand's climate. We've all heard of La Niña and El Niño, and they certainly affect weather down under.

The Indian Ocean Dipole, which is all about sea surface temperature, has also had a big effect on droughts for centuries. In the positive phase, sea surface temperatures are low in the east and high in the west parts of the Indian Ocean. In positive or neutral phases, southern Australia (especially the south-east) is more likely to see big droughts. In negative phases, the same region gets more rain.

The Indian Ocean Dipole is a natural phenomenon. But, according to Munich Re, recent precipitation drops in Australia's cool season are "unlikely to be the result of natural climate oscillations alone. It is probable that climate change was already starting to take effect, reducing the frequency of the cut-off lows which bring rains to

the southwest, south and southeast of Australia and to Tasmania."

I don't know how helpful a Canadian carbon tax will be, or how much it might harm our economy. It will depend largely on how it's done. I think we should also be looking at adapting at this point, and I suspect many industries are doing just that.

The fact that the insurance industry is concerned about climate change makes me concerned (especially since I live on the edge of the flammable boreal forest). I doubt the insurance industry is unduly influenced by either activists or the fossil fuel lobby. Those people are all about risk and numbers.

Of course, you don't have to believe any of this. You have a right to your own opinion.

All I'm saying is that climate change denial is not a good look, especially when the ag industry is pleading for science-based policy. **GN**

Lisa Guenther is field editor for Grainews based at Livelong, Sask. Follow her on Twitter @LtoG.

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SOILS AND CROPS

Looking for solutions for fusarium

Fusarium head blight is on the rise, and Les Henry is looking for a solution



Les Henry

The title of this piece might suggest that the author is an authority on plant disease, but that is not true. For this I have my farmer hat on. There is nothing like a little skin in the game to force one to read the literature and learn. My rotation had been wheat/peas/wheat/canola for 15 years with little disease problems. But I now know that is not a sustainable rotation and fusarium head blight is the big culprit.

SOME HISTORY

Until about 2010 FHB was a Manitoba problem. In 2010 my wheat crop had some of that ugly pink/orange colour on the sick looking part of some heads and it was like a blow to the head. I could still take

you to the exact spot I first observed that dreaded but unmistakable colour. We had heard about folks in Manitoba augering wheat into the bush as the FHB left it with no market. There are also stories about digging holes and burying it, but I have yet to talk to anyone who has done that.

In 2011 there was no big problem in our area so we thought it was a one-off. But, in 2012 I had Goodeve (midge tolerant) wheat with Low FHB resistance and it was really scary. I still managed to sell it as No. 2 for \$8.30/bushel — anyone remember that price?

In 2013 I had no wheat, but most wheat crops in our area were sprayed with fungicide for FHB. But, few needed to, as it was a year with very low FHB problems. In fact, 2013 was “next year” on many Prairie farms with yields many very old folks had never seen before and good quality to boot.

In 2014 I planted Waskada wheat with moderate resistance to FHB and sprayed with expensive fungicide (Prosaro) but still had FHB. It was a good yield and still marketable but it was high time to learn more. By then it seemed as though FHB was bad on even numbered years when I was growing wheat.

THE LITERATURE

A University of Saskatchewan colleague provided a literature review paper on FHB by Marcia McMullen from North Dakota State University. It is a good piece of work and it answered one burning question: “What are the environmental variables that ‘juice up’ FHB? About weather and FHB risk, they said the best model used “the duration of hours that relative humidity was greater than 90 per cent when temperatures were between 15 C and 30 C for the 10 days after anthesis.”

OUR FHB WEATHER

At that time I used the Saskatoon Environment Canada data to check out the 90 per cent relative humidity and 15 C rule and found it fit our experience very well. In 2014 we also pointed out that Manitoba Agriculture had a website with a daily map of FHB weather risk and urged Saskatchewan to do the same.

I am happy to report that the Saskatchewan Wheat Development Commission has partnered with the WIN Network of weather stations and Saskatchewan Agriculture to produce FHB risk maps for Saskatchewan on a daily basis in season. It is on the SWDC website (www.saskwheatcommission.com). I have used that map often.

I have now compiled a table of data for seven years, 2010 to 2016 inclusive.

With seven years of continuous data it is clear that the criteria as established by decades of work in

the U.S. fits our situation very well. Both 2011 and 2013 were clearly not favorable for FHB development. 2015 was intermediate, with more risk than 2011 or 2013 but July 2015 saw many days in the grain growing area with thick smoke from the northern forest fires.

A SMOKE SCREEN?

You may well say, “What does smoke have to do with FHB?” That question brings me to a very old treatise written in 1857 by Henry Youle Hind entitled “Essay on the Insects and Diseases Injurious to the Wheat Crops.” (To read the whole piece, visit www.biodiversitylibrary.org, and search for the title in the search box.)

Hind was a Professor of geology and chemistry at Trinity College in Toronto. He also explored the Canadian West in 1857-58 and wrote two volumes describing his findings. He had figured out what it would take to



This photo shows Goodeve wheat, not sprayed with fungicide. The photo was taken on August 2, 2012.



I took this photo on Aug 21, 2014. This is Waskada wheat sprayed with Prosaro. I think spray was a help but not a solution for FHB. This was the worst of it.

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build a dam to push the South Saskatchewan River down the Qu'Appelle/Assiniboine system to service river navigation. He was no dummy!

In his essay on wheat he devoted an entire chapter to wheat midge. In 1970 to 80s we thought it was something new. It was new to us, but not new.

On diseases, Hind he did not deal with FHB but did talk about rust, smut, bunt and ergot.

On page 121 he relates rust to mists or fogs in July and August, rich in ammonia. What was needed was an agent to absorb the ammonia in a form that would not "juice up" the disease. He then goes on to say that powdered charcoal would be that agent. He described the use of powdered charcoal to cut ammonia odour from fermenting urine in stables and other examples.

That led me to wonder what role, if any, the thick smoke of 2015 had on plant disease.

RECENT WORK

FHB has been such a serious problem in many states of the U.S. that much work has been done. A very recent document is "Proceedings of the 2016 National Fusarium Head Blight Forum" held at St. Louis, Missouri, U.S., December 4 to 6, 2016. The complete piece is available at www.scabusa.org.

A paper by Yabwalo et al. dealing with winter wheat in South Dakota concluded that the "Use of resistant cultivars, monitoring conducive weather for FHB, and applying a triazole fungicide at flowering when moderate to high FHB risk is predicted, remain the most effective integrated management of FHB." But, that does not fix the problem.

THE FUTURE?

Even with the decades of work in the U.S. we are still left with Band-Aids to deal with a very big knife cut. Varieties so far offer moderate resistance at best, and fungicides are also a Band-Aid. My answer is to use the most expensive fungicide and try to get the best possible timing but all of that does not "fix" the problem.

Longer rotations are great to talk about but difficult to implement. Perhaps we should be stepping back and looking for entirely new approaches. If high ammonia in the atmosphere is a factor we should at least start to measure how much atmospheric ammonia is present. I have found extensive data on atmospheric ammonia in the U.S. but nothing for our part of the world. Perhaps a reader will enlighten me.

When I look at areas of FHB, the most serious infection is where the crop is the best – that is, a high nitrogen environment. Unless plant breeding has a huge breakthrough we must expand our horizon of potential solutions. **GN**

J.L. (Les) Henry is a former professor and extension specialist at the University of Saskatchewan. He farms at Dundurn, Sask. His book, "Henry's Handbook of Soil and Water," mixes the basics and practical aspects of soil, fertilizer and farming. To order a signed copy, send a cheque for \$50 (includes shipping and GST) to Henry Perspectives, 143 Tucker Cres, Saskatoon, Sask., S7H 3H7.



PHOTOS: LES HENRY

Yuck. That pink stuff! This picture was taken on August 10, 2012.

i For keeners: The citation for Marcia McMullen's literature review paper is "A Unified Effort to Fight an Enemy of Wheat and Barley: Fusarium Head Blight," by Marcia McMullen, Gary Bergstrom, Erick De Wolf, Ruth Dill-Macky, Don Hershman, Greg Shaner and Dave Van Sanford. *Plant Disease*, Dec 2012, Volume 96, Number 12.

WEATHER CONDITIONS FAVORABLE FOR FHB

This table uses Saskatchewan Airport data from Environment Canada.

Favourable weather conditions

	Hours with RH 90% + and Temp. 15 – 30 C						
	2010	2011	2012	2013	2014	2015*	2016
July	90	17	147	44	56	55	142
Aug 1-20	87	1	31	16	81	34	89
Total	177	18	178	60	137	89	231
	Days with one + FHB Hours (RH 90% + and Temp. 15 – 30 C)						
	2010	2011	2012	2013	2014	2015*	2016
July	24	6	23	6	13	12	23
Aug 1-20	13	1	7	5	16	8	12
Total	37	7	30	11	29	20	37

* July 2015 had many days with thick smoke from northern forest fires

SOURCE: LES HENRY

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SHOP CLASS

How to build a custom tool box, Part 1

We turn an old truck hood into a one-off shop storage box, in the Grainews Garage

By Scott Garvey

The 1960 Ford F-600 truck sitting outside the Grainews Garage with a body that was far too rusty to repair made us wonder what to do with it, so we started looking at what parts we could salvage and what we could do with them. One of the things that was still in good condition was the hood, which has a great vintage style to it. Using it as a lid for a unique, one-off tool box became the plan.

The first step was to cut the front section off to give it the right depth. Making the box about 22 inches deep seemed about right. To get rid of the excess hood length we ran a tape line at that measurement across it to act as a cutting guide.

There were several ways we could have made the cut, but it was important to get a smooth, even edge. So we opted to use a cut-off disc on an angle grinder.

We wanted the tool box to fit into the bed of a pickup, giving us the option to use it there if we wanted. But that meant the old truck hood had to be narrowed by about 12 inches (30 centimetres). It wasn't possible to just cut a slice out of the middle of the hood. That would ruin its lines. The only place where it could be cut was on the outer sections, making it necessary to make two cuts and take about six inches out

of each side to keep it symmetrical. Doing that would allow the hood to retain its basic design and give it the proper dimensions.

Lines were marked out on both sides of the hood to make those cuts. Running tape to mark lines makes an easy-to-follow guide, but we used a Sharpie to draw a cut line as well, in case the tape came off.

With all the cuts made, the hood was now in three sections and needed to be put back together. This is where having a good selection of clamps — and a lot of them — comes in handy.

The trick was aligning and massaging all the sheet metal so it would meet properly and could be welded back together to create a seamless appearance. The trouble is, although we cut the flattest section we could, there were compound curves at the front of the hood that were now misaligned because of the six inches we chopped out. Removing those section also raised the sides of the hood up compared to the front centre section when they were reattached.

To get the sides welded back on, pie-shaped relief cuts had to be made through the front curved portion. That, combined with a little hammer and dolly work to shape the remaining metal, allowed the hood shape to fit together correctly. The joint was butt welded so it could be made



This hood salvaged from a 1960 Ford truck will become the lid for a customized workshop toolbox.

invisible not only on top but also underneath if we wanted to go that far.

Once the welding was finished, the weld bead was ground smooth with the surrounding metal using a flap disc on the angle grinder, which made it invisible.

To put a new back on the hood, which would also make it rigid and help retain its shape, it was stood

up on a piece of 18-gauge sheet metal lying on the shop floor. The contour of the hood was then traced onto the metal so the exact hood shape could be cut out.

The new back was welded to the hood and metal strips with a 90-degree bend were welded to the underside for reinforcement at the joint and to stiffen the back section.

A little body filler was used to smoothen out any uneven sections and the entire hood was sanded down to bare metal before getting a coat of primer.

Next time, we get on with building the box. **GN**

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.



Cut 1: After determining how deep the box will be, the front section of the hood is cut off.



To keep the original hood shape but make it narrow enough to fit into the bed of a pickup truck, two sections had to be cut out.



The hood was clamped back together and butt welded to make a seamless joint. Repositioning the metal on the compound curves required making several pie-shaped cuts.

NEW EQUIPMENT

New fertilizer applicator from Summers

Customizable tool can incorporate up to three types of product simultaneously

By Scott Garvey

For those who want to incorporate fertilizer other than during seeding operations, North Dakota's Summers Manufacturing has introduced a new machine to the marketplace to help accommodate that: The VT Flex applicator. It's a fully customizable fertilizer applicator, according to the company, that will allow placement of up to three fertilizer mediums (dry, liquid and anhydrous ammonia) at high rates simultaneously. And it can do it at speeds up to eight miles per hour.

To cope with fields that have a heavy trash cover, the VT Flex applicator uses a front row of coulter blades, which can be ordered with one of five different blade options. The low-disturbance application knives can be configured for 15-, 20-, 22- and 30-inch row spacing. And placement depth can be adjusted separately from the coulters depth. Behind the knives, independently mounted disk levellers can be adjusted to optimize soil sealing.

The VT Flex applicator is compatible with most makes and models of air carts capable of applying up to 700 pounds (318 kilograms) of granular fertilizer per acre. Anhydrous ammonia tanks can be pulled behind the unit. It can also accept almost any liquid fertilizer tank setup from pull-behind carts to tractor saddle tanks.

The applicator offers a machine-levelling feature, which allows for tool-free adjustments. And it has a single-point setting for depth control. It's currently available only in 60-foot working widths with green or red paint to suit your preference. According to the company, all VT Flex models are custom built and they can only supply pricing information once all options and features are figured in. **GN**

Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.



The VT Flex applicator from Summers is custom built to match the exact needs of a producer, according to the company.

PHOTO: SUMMERS MANUFACTURING

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For more information visit summersmfg.com/sprayers-applicators/vt-flex-applicator/

CLASSIC MACHINERY



Case IH released a limited number of 4430 and 3340 sprayers wearing a special paint scheme to celebrate the Patriot's 25 year production mark.

PHOTO: CASE IH

Special edition machines in 2016

Our look at a few of the unique offerings brought to the machinery market last year

By Scott Garvey

You may have noticed an apparent contradiction on this page. Up top we've put this article under the "Classic Machinery" heading, yet this feature is all about models that appeared in 2016. No. It isn't a mistake. So, why did we do it?

We're taking a quick look over our shoulder at what "special," limited production machines were made available to farmers in 2016. Yes, we're only a few weeks into 2017, but those machines now represent what might best be described as modern classics. Hence, the classic machinery heading.

Eventually, the unique paint jobs and features on these limited production machines will make them rare and possibly highly sought after — at least for those with a big enough bank roll to consider something like a very-high horsepower tractor a collectable item. (Those of us with just a bookshelf to display collectibles will have to settle for scale models of them.)

Every year there are at least a couple of "special edition," limited-production machines made available to buyers, and 2016 was no exception. Here's a quick round up of what farmers could have parked in their garages if they wanted a really unique machine. **GN**

Scott Garvey is machinery editor for Grainews.
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CASE IH

Case IH celebrated 25 years of Patriot sprayer production with the fall release of limited-edition 4430 and 3340 models. In keeping with the silver anniversary theme, these sprayers get a unique red and silver livery. They come equipped with Michelin rubber, Raven Industries technology and Wilger COMBO-RATE nozzle bodies as standard equipment.

The red brand also marked another anniversary in 2016: 20 years of Quadtrac tractor production. The company's display at the U.S. Farm Progress Show included a blinged-up Quadtrac special anniversary edition tractor parked beside a pristine, 20-year old example of one of the first models ever to head out to a dealership. Case IH is building only 30 of the anniversary machines.

PHOTO: SCOTT GARVEY



JCB

UK-based JCB celebrated an anniversary in 2016 as well. It was 25 years since the first Fastrac ag tractor rolled off a production line in Great Britain in 1991. Before that the brand was only known for building light construction-related equipment. According to JCB executives, the limited production 4000 Series silver ag tractors were sold out very quickly after being made available to customers.

PHOTO: SCOTT GARVEY



VERSATILE

We've shown you the Legendary Limited Edition Versatiles in the pages of *Grainews* before, but they're worth another look. With a stop-you-in-your-tracks paint scheme, the original announcement was made very late in 2015 and orders were still being taken into early 2016. The keys for all 50 machines were presented to their owners at a special event just outside Winnipeg late last summer.

PHOTO: SCOTT GARVEY

MANITOBA AG DAYS

COMBINE CYLINDER REVERSER SYSTEM

Hydraulic wrench designed to make clearing plugs easier



Arnold Innovations of Manitoba now offers two different hydraulically-assisted combine cylinder reverser wrenches.

By Scott Garvey

As a farmer, Richard Arnold, who describes himself as heading research and development and Arnold Innovations, turned his own observations about the difficulty of clearing plugged combine cylinders into a small business. Arnold Innovations now produces two hydraulically assisted cylinder-reversing wrenches to make that job easier.

Richard and his son were promoting their products at Manitoba Ag Days in Brandon in January.

"I actually farm as well," he explained. "The inspiration came from my experience running CX combines"

"The first product we built was the AI 100 CX reverser, which is for New Holland CX Series combines. It's a hydraulically driven ratcheting de-slug wrench for the main cylinder. So if you plug your main cylinder instead of using a factory wrench and using manpower, you're using hydraulics."

The wrench system mounts near the combine cylinder hub. Whenever the operator plugs the cylinder, it's just a matter of lifting the wrench into place on the hub and activating a hydraulic spool valve to turn the cylinder back to clear the slug.

"It's permanently mounted on the side of the combine where you need to use it," he said. "Then it's just a case of lifting it up and attaching it. You turn on the hydraulic supply valve and then we have a spool valve mounted under the steps to actually run the hydraulics. We're only using the stand-by pressure on the combine, which is about 450 p.s.i. So it's very safe to the combine components."

With the success of the first model designed for CX combines, the Arnolds have now developed a second wrench designed specifically for Claas Lexion combines.

"The CX version runs at \$3,500, regular price," he said. "And the Lexion one is \$4,000 for a high pressure kit. There are two kits for the Lexion, a high and a low pressure. The low pressure is \$3,600."

"We direct retail, and we have dealers as well. We've sold 55 of these in the past year and we've had some very good feedback."

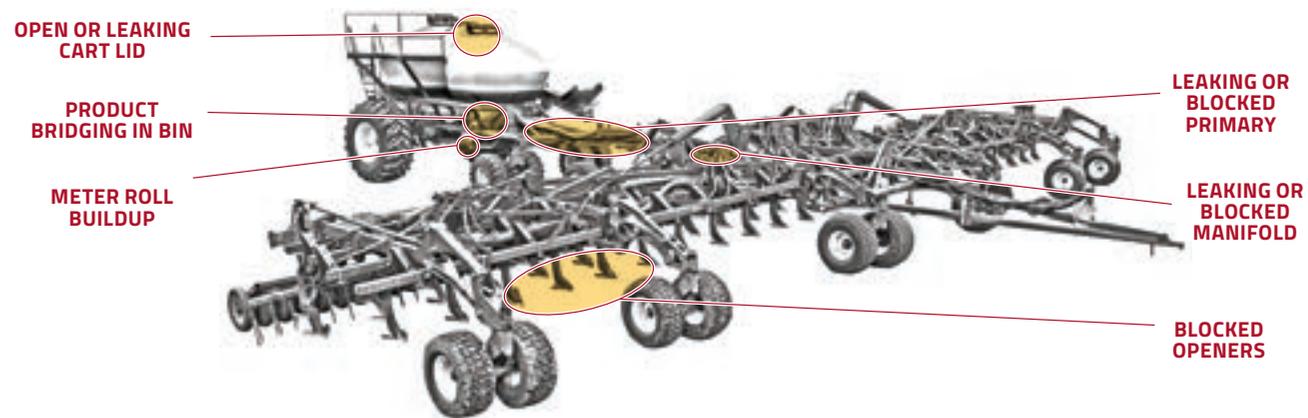
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TILLAGE

WIDER FIELD CULTIVATORS FROM UNVERFORTH

Three models offer different capabilities

By Scott Garvey

Unverforth Manufacturing has broadened the available working width range of its Perfecta field cultivators, which can now be ordered in sizes from four to 40 feet. The company claims the Perfecta models blend tillage, levelling and finishing actions into one implement. The new, wider sizes use a floating wing design that can rise up to 15 degrees and lower by five degrees to follow field contours.

Three rows of high-clearance S-tines provide tillage up to six inches deep. There are three different tine styles on each of the models: the 10, 12 and 14. The model 10 uses 1 1/4-inch by 1/2-inch S-tines with 2 3/4-inch

goosefoot shovels. The model 12 gets 1 3/4- x 1/2 -inch heavy-duty S-tines with four-inch sweeps for better penetration in heavier, unworked soils and rocky conditions. Heavy-duty, edge-bent tines are standard on the model 14.

Behind the tines, an adjustable levelling bar breaks up clods and levels the soil with a choice of spike or diagonal round teeth. A 12-inch diameter rolling basket then mixes and levels. Gauge wheels across the machine's width maintain an even working depth.

Buyers can color match their Perfecta to red or green tractors with a high-gloss powder coat. **GN**

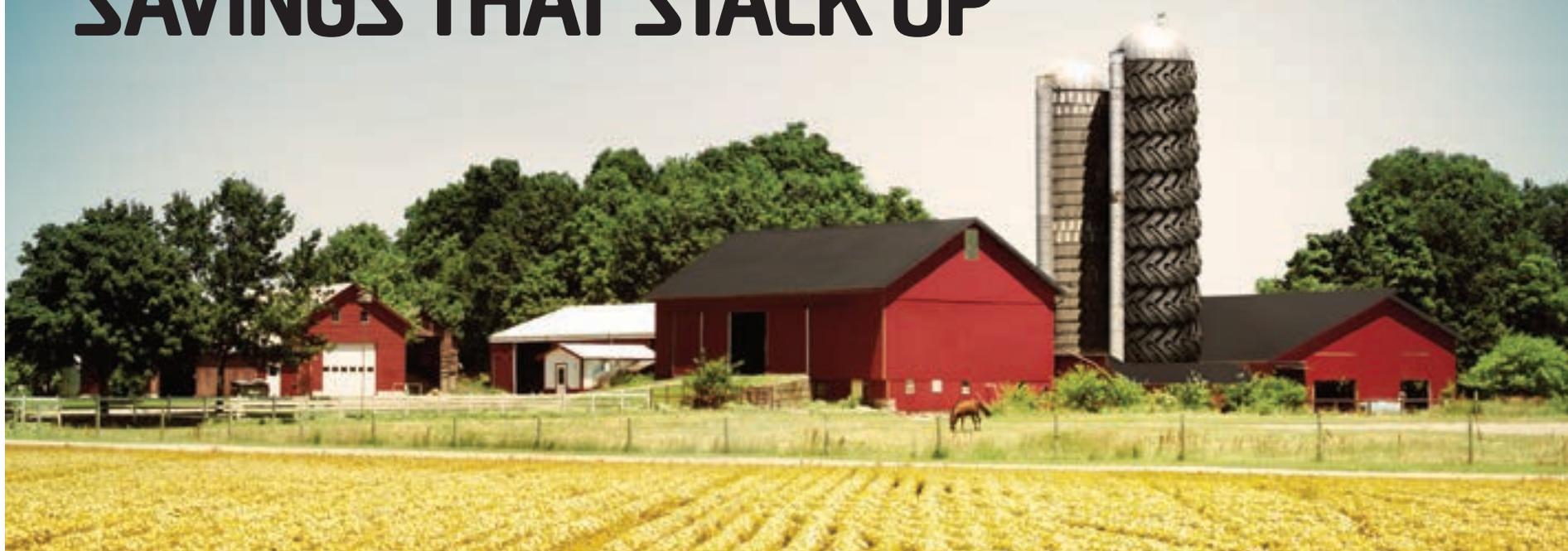
Scott Garvey is machinery editor for Grainews. Contact him at Scott.Garvey@fbcpublishing.com.



Unverforth Perfecta field cultivators are now available in widths up to 40 feet.

PHOTO: UNVERFORTH MFG

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MARKETING CATTLE

Getting ready for sale day

Cattle are important, but don't overlook facilities and sale barn

BY MICHAEL THOMAS

As the snow begins to melt, giving way to mud and green grass, livestock seed stock producers make preparations for their upcoming annual production sales.

They have made the long lists of items necessary to prepare for a successful production sale and they are checking them twice: writing newsletters and personal letters to previous customers containing all of the latest high-calibre genetics included in this year's offering; generating promotional material for advertisements in livestock magazines, newspapers, and flyers; scheduling groomers, ring men, auctioneers, brand inspectors, helpers to work the cattle through the sale barn, helpers to work the sale records, and helpers to prepare and serve the food and beverages that make all good sales memorable.

But, if you are one of these seed stock producers, don't let the mountain of clerical preparation cause you to overlook the preparation to the physical facility that will allow you to orchestrate a safe, professional, appealing, and successful production sale.

As with any product or service that we, the buyer, are interested in today, we associate quality of a product or service with the appearance and performance of the presentation of the product or service. The last thing you want as a producer is to lose the rhythm of the sale while you take a break to repair some part of the facility in the back end or sale ring before you can continue the sale. Besides the potential dollars lost while you get everyone back to buying your animals, a breakdown can also pose a safety risk to the help and possibly the buyers and spectators.

A few years back I attended a bull sale near Columbus, Montana and



A clean, dry, well-bedded secure sales ring contributes to overall presentation.

midway through the sale a bull broke out of the ring, climbed into the stands, and ended up going through the lunch room before exiting the building through an open door and leaving the premises. Fortunately no one was seriously injured and the ring was repaired within a few minutes, but many of us buying bulls that afternoon bought good bulls for less than they were worth while the auctioneers attempted to get everyone back into the frame of mind to bid on bulls.

PROPER FACILITIES MATTER

Jim Skinner, owner of Skinner Angus Ranch, is a recently retired second-generation Angus seedstock producer. His family has raised and sold purebred Angus cattle near Salmon, Idaho for more than half a century.

"I believe a production sale needs to be as safe and comfortable for the buyers and livestock as possible," says Skinner. "Safety needs to be your first concern. You have created an environment where you have combined cattle that have never been exposed to so much pressure from their surroundings and all the extra people in a confined space. So you need to make every effort to keep the people and the cattle safe from preventable accidents."

Skinner says it is important to go over the pens, gates, alleyways, chutes, and other areas that will be used before and on sale day, checking for damage and weakness.

"You'd be surprised how easy it is to forget to make sure the alleys and chute are in good order before the groomers or the soundness-test guys arrive," he says. "Something as simple as a malfunction in the chute or alley can really throw a kink in your program and cost you time and money."

Regardless of what pens, alleys, and gates are constructed of, cattle are hard on facilities. Walk through the facility and make sure they are secure. Check hinges, latches, pulleys, and pull ropes on slide gates. Don't overlook the doors or gates leading into and out of the sale barn and the ring.

"Walk through the system the way the cattle will go on sale day — into the ring and back outside," says Skinner. "Make sure there is no mud or manure piled against a gate or door that could be frozen on sale day."

Look over the sale ring containment structure, permanent or temporary panels, and make sure that there is no chance that a cow or bull can break through into the audience.

Take time to check the physical structure of the sale barn for damage.

Make sure the walls and roofing are secure. Missing siding or roofing can make sale day very uncomfortable on a rainy/windy day. If your sale barn has a heating system, check to make sure it is operational.

"I liked to touch up the paint on the sale barn from time to time to prevent damage from weather, and this gave us a chance to look the building over pretty good," says Skinner. "Plus I feel a nicely painted sale barn adds a professional touch to the operation."

Many production sales take place during variable spring weather. Reasonable effort should be taken to ensure pens are bedded with dry material and walkways in viewing areas are cleared of snow and mud. Gravel and wood shavings work to provide a dry surface for the buyers and spectators while viewing cattle in the pens.

"Most years it was wet and muddy at the time of my sale in March," says Skinner. "Wood shavings spread through the pens and walkways keeps the mud down. It's safer for everybody, and people are much more comfortable when they are not trooping through ankle deep mud. Also, it is important to spread wood chips or shavings in the sale ring to give the cattle a little bit better traction. Also keep a fresh supply on hand to freshen the ring after the cattle run the chips or shavings off a little. It's hard on the cattle when they come in and fall down, and no one wants to see that."

FOCUS ON BUYER COMFORT

Skinner says in sale day preparation, second only to safety, comes the comfort of the buyer. He believes it is important to keep a clean set of pens, alleyways, and sale barn free of unnecessary objects that detract from the event and can create safety hazards. Walkways in the sale barn should be open with good footing. Seats should be dry, free of dirt and dust.

Serving tables should be in an accessible area with enough room for buyers and spectators to move about freely.

"My sale barn served as a machine shop during the off season," says Skinner. "So it took a bit of effort to clean out everything that was in the way of the sale. And, with the bay doors open a lot while we were moving machinery in and out, a fair amount of dirt and dust blew in onto the seats in the stands. We wiped them down ahead of the sale. Most folks don't want to sit in all that dirt."

Another purebred Angus seedstock producer, Steve Herbst, owner and manager of Nelson Angus Ranch, located near Salmon, Idaho, says he puts effort into producing good cattle, so they should be presented and marketed accordingly.

"As seedstock producers, many of us spend a great deal of time breeding these animals to perform for the buyer, and take pride in that effort," says Herbst. "It is important that we make every effort to display this in every aspect of our operation... right down to the quality and presentation of sale day."

So in final preparations for your production sale, don't forget the importance of reviewing all of the physical facilities, including the sale barn, associated with the sale. Don't be afraid to let a little of the pride in all the hours of hard work that goes into breeding good cattle shine through. If you have taken the time to make your sale safe and comfortable, we, the buyers, are much more likely to recognize your hard work breeding a quality bull or cow that will provide that special trait we are looking for to improve our own herd. **GN**

Michael Thomas operates Thomas Ranch along with family near Salmon, Idaho. Contact him at: Thomasranch@centurytel.net

THE MARKETS

General movement toward higher production

Feeder cattle prices may not get much better than they are right now



MARKET UPDATE
Jerry Klassen

Feeder cattle prices were hovering in the range of \$158 to \$160 in mid-February, slightly lower than month-ago levels. The markets are relatively strong and I'm expecting the yearly highs to occur over the next month.

First-quarter beef production is coming in marginally lower than anticipated, but supplies are building. The recent cattle-on-feed report and USDA cattle inventory report confirm the aggressive herd expansion south

U.S. QUARTERLY BEEF PRODUCTION (MILLION POUNDS)					
Quarter	2013	2014	2015	Est. 2016	Est. 2017
1	6,172	5,868	5,664	5,935	5,980
2	6,517	6,183	5,857	6,187	6,645
3	6,608	6,179	6,068	6,468	6,700
4	6,420	6,021	6,109	6,623	6,675
Total	25,717	24,251	23,698	25,213	26,000

of the border. This will cause fed cattle markets to trend lower from the April through August period.

Feedlot margins have been quite healthy over the past couple of months with break-even pen closeout values near \$140. We've seen a rebuilding of equity in the

feedlot sector, which has spilled over into the feeder cattle complex. Tan medium-flesh steers averaging 900 pounds were quoted at \$163 in central Alberta; higher-quality 800-pound steers have sold from \$160 to \$163 across the Prairies while mixed steers

averaging 600 pounds were selling from \$188 to \$192. Feeder cattle prices are also expected to grind lower moving forward as feedlot margins narrow and the fed cattle price adjusts to the surge in beef and pork production.

The USDA cattle inventory report confirmed the aggressive expansion over the past year. Beef cows that have calved were 31.210 million head as of January 1 2017, which is up three per cent or one million head from last year. It's important to remember that most of these cows are relatively young. The 2016 U.S. calf crop was 35.082 million head, which was also up three per cent or 1.0 million head from last year. More

calves born equals more feedlot placements equals a year-over-year surge in beef production. Lower prices are on the horizon so don't expect the markets to strengthen.

PRODUCTION IS INCREASING

The USDA estimated Jan. 1 cattle-on-feed numbers at 10.6 million head, which was relatively unchanged from year-ago levels. However feedlot placements in December were up a whopping 18 per cent over year-ago levels. The accompanying table shows the projections for quarterly beef produc-

See PRODUCTION on Page 49 ►

ANYONE CAN START FARMING

Valuable information in pocket notebook

There's always a risk of turning something into a pet that should go down the road



Debbie Chikousky

Over the years it has become very clear to us that every farm runs differently. They have to. Each and every farm is its own entity. The land is the same as your neighbour's, but yet different. This holds true for the water and the livestock, and especially the farmer. Each decision is made on your own past experiences and your own personal financial situation and moral belief system.

The foundation of how a herd is to perform starts and ends with which animals are chosen to stay in the breeding program. The years have taught us that if we are not careful, our decisions can easily breed in a lot more work and expense than needed.

Once a decision is made on a breed that will work on your own unique farm, you need to set your specific expectations. If the livestock is being raised to make an

income, this means an expected profit per head. You will consider your own management system, how individualized you will focus your care. The least effort that is put into each individual, the easier it is to care for the herd.

This concept is hard to accept because the ones that require the most care tend to become pets. Then other not very productive traits can be overlooked because they are pets. For our operation there have always been a few pets. What cannot happen is that the pets do not pay for themselves in some way.

For example, I have a black wether (castrated) lamb that we retain because he is black. We are establishing a wool product line so his fleece is desirable, but he will never reproduce. If at any time he becomes aggressive or doesn't stay in the fence, his fleece will no longer be profitable, because he is not only eating feed that could be used by a productive ewe he is taking up time that is needed for caring for new lambs and other projects.

IMPORTANT FARM TOOL

This concept extends into all areas of livestock production. This is why a tiny little notebook that fits in the breast pocket of a T-shirt with a tiny pencil is a very important farming tool, especially when there is more than one person involved in your operation.

On ours the culling of replacements starts at weaning. Females are usually kept on the merits of their parents. Does her dam hold her weight well on the inputs available on your operation? Is she easily fertile? Does her family display parasite resistance and longevity? Does she easily deliver her young and repeatedly have strong viable babies, every year? All of these answers are found in that notebook. The answers must be yes.

Reassessment occurs before breeding. At that time if a female is not well-grown enough to be bred she moves to the meat stock side of our operation. At this time her parents are also under scrutiny. The

questions are 'why would a female stay that didn't raise a replacement' and 'why is a male staying if he didn't improve on the previous generation?' The next cut involves open animals. Unless there is a very good reason, such as it is the male's fault that females are open when they have been exposed for a season, they do not stay. They are shipped before pasture season or moved to the terminal side of our operation.

Then there are those that just don't raise young. Replacements can be chosen from these but carefully. There is no second chance for those who are aggressive to the young, because over the years we found that they just did the same thing the next year. The ones that refuse a young one and it has to be artificially raised usually go, though there have been 'first-timers' who have gone on to raise amazing babies, and have lots of milk to feed them. Some farmers will force the issue of refusal; for us it is too much work and usually it is not overly safe for the humans.

Another trait that is not desired is a plain bad disposition. These animals are dangerous to the farmer and to other stock. Research has shown that a bad disposition results from genetics, learned behaviour from other cattle, or from being mishandled. This is another trait that should always be recorded in the notebook.

A few years back it became clear that there were animals in our operation that could easily live, actually flourish, on what feed we could produce, with the shelters we could provide. Then there were the ones that couldn't. They were the ones that needed the extra groceries and care. Those were the ones that were phased out. The stress level decreased, the expenses decreased and therefore the profit increases. There is still a lot of improving to do but there always is. GN

Debbie Chikousky farms with her family at Narcisse, Manitoba. Visitors are always welcome. Contact Debbie at debbie@chikouskyfarms.com.

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RANCHER'S DIARY

Wildlife put pressure on cattle feed

On the home front, health issues to deal with



**Heather
Smith Thomas**

JANUARY 25

With such cold weather in December and January we've gone through a lot of firewood. If it ever warms up, we can let the fire go out at night to save wood.

Tuesday was Emily's ninth birthday. We all had dinner at Andrea's house. The elk are still coming into our field, pawing through snow and eating the rest of our pasture, and eating Alfonso's haystack along the road. They eat with his cows when they're fed, and tried to get in with our young cows to eat at their feeder but Andrea's dogs scared them away. Robbie shovelled snow off the old barn roof (so weight of the snow won't collapse the roof) and Charlie shovelled snow piles away from the barn doors. Robbie used a snowblower to remove snow from our house roof. Several roofs in our area have collapsed with the weight from two feet of snow, so we thought we'd get some of the weight off our roofs before we get more.

FEBRUARY 2

We had another siege of extremely cold weather for a few days and had

to plug in the feed truck each night so it would start in the mornings. On Saturday 30-plus elk were lounging on the hill above our field again and another group on the other side of our place.

On Monday Robbie, Michael and Nick started on the fence-rebuilding project for Willow's pen. They took out the old fence and put up a tall pole to route the electric wire across to my hay shed so they could do away with the electric wire around the old pen. Robbie used the tractor and loader to lift out the old crabapple tree stump. That old tree blew down many years ago and needed moved so we can rebuild the fence, where the big stump took the place of the smashed fence.

Yesterday was very cold and windy so the guys didn't work on the fence. Wind blew big drifts across our driveway so Robbie plowed through them. It was still snowing this morning when Andrea and Lynn drove to Idaho Falls for her pain doctor appointment and his arthritis doctor appointment. Robbie helped me feed the cows. The doctor examined Lynn's shoulder (hurting for several weeks after it popped out of joint and back in again) and told him some of the attachments are torn and he might need surgery. Lynn came home in a fancy sling that helps immobilize the arm and shoul-



Our neighbour Sy Miller with his jackhammer post pounder, setting posts for our new horse pen.

der, so he won't keep moving it too much and hurting it more.

FEBRUARY 8

Friday morning I discovered a bunch of whitetail deer had gotten into our haystack below the driveway, by going under the old flatbed truck. The truck is next to the stack and we'd attached one end of the plastic netting to the truck, to keep deer out of the hay. They'd gotten in anyway, tore up a lot of hay, then knocked down the netting to get out. They waste a lot more hay than they eat. We don't mind as much when they eat hay with our cows in the field (because the cows clean up everything the deer don't eat), but we try to keep deer out of our stacks because

they pull out hay, tromp on it, poop on it and waste it. Andrea helped me remodel the netting around the stack so the deer can't get in again.

Early Saturday morning I went to feed the horses and found six elk eating at my haystack. A two-point bull wouldn't leave until I ran up to them and started clapping my hands. There were 15 more elk on the hill above the main road. They'd eaten and torn up all the bales I'd laid out for feeding horses, and ate on bales in the hay shed. They left piles of poop in the mess of torn-up hay bales. I chased them out of my stack and into the field, and then they had trouble getting back through all the fences.

The next two nights I turned on all our yard lights including two on the end of my hay shed, to try to deter them. They didn't come back into my hay, but went in with the young cows the next night and ate hay out of their feeders and left a big mess.

The past few days were warmer — thawing in the afternoons, for the first time in many weeks. Yesterday the guys started back to work on Willow's new pen. Michael took the flatbed trailer down to Millers and hauled Sy's tractor and post-pounder up here. Andrea and I moved Dottie, Ed and Breezy to the pens by the calving barn, to be farther away from the loud noise of the hydraulic jackhammer pounder.

We didn't want any of them to freak out and crash into a fence.

Sy plowed the deep snow away from the fenceline. The ground underneath was not frozen — even after all the bitterly cold weather. Sy used the tractor to pull the old posts out of the ground, then set new posts in the new fence line. With the jackhammer pounder, he set 40 posts in an hour — with Nick lining them up and Robbie working the chain to pick up and place the posts where they needed to go.

It snowed all night; we had six inches of new snow. We're glad we got the posts set yesterday! Michael's tractor had a flat tire this morning, so he was glad we'd plugged in our tractor. He brought his feed truck down here to load a couple of our bales.

FEBRUARY 15

This week, Andrea and Robbie went to Salt Lake for her doctor appointment — a specialist to check the bone spurs in her neck. The doctor said she doesn't need surgery at this point, for those, but her shoulder problem does need attention. She'll need that checked next. **GN**

Heather Smith Thomas is a longtime Grainews columnist who ranches with her husband Lynn near Salmon, Idaho. Contact her at 208-756-2841.

THE MARKETS

► PRODUCTION from Page 47

tion. First-quarter production is similar to year-ago levels at 5.9 billion pounds. However, second-quarter production is forecasted to finish near 6.645 million pounds, up a ghastly 458 million pounds over 2016.

The USDA is expecting similar year-over-year increases in the third and fourth quarters. I also need to point out there are also projections for a record large fourth-quarter pork production estimate.

The Canadian cattle herd has not experienced the significant growth as our U.S. counterpart. The 2016 calf crop is expected to come in at 4.350 million head, up from 2015 crop of 4.298 million head. The number of beef cows that have calved from Jan. 1 2011 through Jan. 1 2016 has dropped by 216,000 head, but we are expecting minor heifer retention to spur on the marginal expansion.

Keep in mind the expansion is relatively small in the grand scheme of things so that market influence is negligible. Alberta and Saskatchewan Jan. 1 cattle on feed numbers totalled 858,129 head, down eight per cent from Jan. 1 of 2016. December placements were 93,999 head, up three per cent over December of 2015.

As of mid-February, the April live cattle futures were trading at \$113 while the June contract was at \$104 and the August contract at \$101. The market is factoring in the larger beef production with lower prices in the deferred positions. I've men-

tioned in my previous article the factor known as the 'constellation of prices,' whereby the nearby contract pulls up the deferred contracts. Although the June contract is at \$104, the market likely has down-side potential.

Feeder cattle are currently priced so that feedlot margins are near break-even for the summer period. Again, as of mid-February, the May feeder cattle futures were at \$121 while the August contract was at \$123 and the November contract was at \$121. The current environment is probably the highest prices we'll see for feeder cattle this year.

Remember, the current fed cattle market pulls up the feeder market in the deferred positions. This is kind of a gift for cow-calf producers and backgrounding operators to hedge or take some price protection on their fall marketings.

I also want to point out the upside potential for the feed grain markets during the summer and fall period. Barley has been trading in the range of \$158/mt to \$162/mt delivered Lethbridge and next summer and fall, the market has potential to be \$20/mt to \$30/mt above current levels, which will also weigh on the feeder cattle market. **GN**

Jerry Klassen is manager of the Canadian office for Swiss-based grain trader GAP SA Grains and Products Ltd. With a strong farming background, he is also president and founder of Resilient Capital, a specialist in commodity futures trading and commodity market analysis. He can be reached at 204 504 8339

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DAIRY CORNER

Controlling hairy heel warts in dairy cattle

A clean barn is part of preventative measures

BY PETER VITTI

Since the new year, I have travelled to many dairy farms across Western Canada and conducted a personal survey about lameness in dairy cattle. At each visit, I asked producers "What was their biggest cause of hoof problems?" Almost unanimously, their answer was "hairy heel warts!" This is no surprise, since multiple surveys conducted over the last few decades, mapped its spread across North American dairy farms. Fortunately, early detection, constant vigilance and prevention is the key to controlling this major hoof disease.

Hairy heel wart, also known as strawberry foot disease, is a digital dermatitis which affects the heel tissues above and proximal to the meeting of the hoof claws (interdigital space). It's a rather insidious virus, specifically a bacterium in the spirochete family called *Treponema*. It is highly contagious and can spread rapidly to susceptible animals such as dairy cattle around calving, first-calf replacement heifers and malnourished cattle. Interestingly, some infected cattle do

not show clinical lesions, yet are contagious carriers often to break with disease later on when they become stressed. Wet conditions and poor manure sanitation play a significant role in its spread throughout the dairy barn.

SYMPTOMS

Close inspection of the photo of this cow's hoof illustrates the early stages of hairy heel wart, which is literally a raw hole, prone to bleeding when broken open (strawberry warts). As these growths mature, they become larger (2 cm) lesions with hair-like projections giving hairy heel wart its name.

Needless to say, hairy heel warts are an extremely painful condition for dairy cattle, which affects hind hooves in 85 per cent in confirmed cases. Dairy producers may first observe that afflicted cattle tend to walk on their toes, because the developing warts may also cause abnormal heel overgrowth.

Such dairy cows also do not perform well. For example, a lame dairy cow with hairy heel warts in early lactation often has a reduction in milk production by 20 to 50 per cent. It's likely a matter that a lame lactating cow



This is an actual picture of hairy heel warts taken by a dairy producer.

PHOTO: PETER VITTI

doesn't want to go up to the feed bunk. As a result, it reduces the dry matter intake (DMI) that provides dietary energy and other essential nutrients. In some hairy wart cases, such a reduction in DMI may cause a severe negative energy balance; a rapid and abnormal breakdown of bodyfat to ultimately end in detrimental metabolic ketosis.

Fortunately, over the years I have seen that many hairy wart problems can be successfully treated. Medicated soluble powder recommended by the herd's veterinarian is often applied

directly to the lesion and then the hoof is wrapped with an elastic bandage. In a few days, these once limping animals seem to be walking and up to the feed bunk as if nothing ever happened.

PREVENTION

As a dairy nutritionist, I believe in preventative medicine against hairy heel warts, which in this case means making the dairy cows' skin around the hooves healthier and the hoof horn harder by nutritional means. A few years ago, I instructed a dairy producer to add four grams per head per day of zinc methionine to his lactation dairy premix, which in turn was added to his daily milking TMR. After seven months of zinc addition, a successful reduction in general lameness including hairy heel warts was observed. Even the hoof trimmer made the comment — the condition of the skin around the hooves and general hardness of the hooves in the cow herd had improved.

Aside from this nutritional testimony, I am also an advocate of having cows biweekly walk through a clean acidified copper or acidified copper-zinc sulphate foot bath. This routine can be tailor-made to one's situation,

which should help disinfect cow herd hooves, which in turn should prevent the spread of hairy warts.

Proper foot care should be parallel with good sanitary barn conditions. I know of one producer who runs alley manure scrapers in his free-stall barn more frequent than most people normally practice. Another producer, whom operates a robot-barn, washes the concrete pad and metal grate under each milking station. In both cases, the lactating cows' feet are notably cleaner and hairy heel warts are not much of a problem compared to my other barn visits.

Whether it comes to turning on the scrapers or washing down the barn each day or even treating each case as it pops up, dairy cows need our help when it comes to controlling hairy heel warts. Healthy cows should easily stand on their feet and go up to the bunk at their leisure. When they are able to eat their fill and without the pain of hairy heel warts, they are able to contribute to optimum milk performance. **GN**

Peter Vitti is an independent livestock nutritionist and consultant based in Winnipeg. To reach him call 204-254-7497 or by email at vitti@mts.net.

ANIMAL HEALTH

Don't semen test bulls too young

What are these droplets in young bulls really telling you about semen quality?



ANIMAL HEALTH
Roy Lewis

Many commercial producers and purebred seed stock cattlemen often start to question the appearance of lots of droplets appearing on the semen evaluation forms of young bulls.

It can lead to frustration when bulls have to be retested. These droplets collectively are probably the most numerous defects we as veterinarians see when performing breeding soundness exams (semen evaluations) in the spring. It may help producers to have a better understanding of what the presence of proximal and distal droplets represent.

There is no doubt, on average, we see many more droplets in young immature bulls that are just reaching sexual maturity (puberty). To start with, these bulls are less active. Especially when bulls are not housed close to cycling females, these droplets in semen really are a very frequent occurrence.

One must realize a few important facts. When maturing in the testicles epididymis (little knob at the bottom of the testicles), 100 per cent of the sperm start with a proximal droplet. This is wiggled or shook off as the sperm matures and travels through the canals within the epididymis. Because the sperm with droplets are not mature, fertility is affected.

THE STORY ON DROPLETS

There are essentially two types of distal droplets — those severely affected (pathological) and those that will be shook off later (physiological). In a study by Dr. Jacob Thundathil at the University of Calgary Veterinary Medicine (UCVM), he found the percentage of droplets in ejaculated sperm declines in the time between collection and when it is chilled to be frozen and put into straws for artificial insemination.

This time interval is only three or so hours. If we extrapolate this, the same thing must happen with natural breeding. As the sperm is swimming up the vagina and into the uterus, a number of these distal droplets are shook off and left behind. As a result the distal droplets aren't near as serious a defect as the proximal ones.

As mentioned, all sperm when formed start with a proximal droplet and during maturation in the canals of the epididymis, these become distal droplets and then are shed in the normal chain of events. If we do see lots of proximal droplets, they are often associated with other sperm defects such as head defects in a number of cases.

Droplets are really the main cause of many young bulls failing their first semen evaluation, especially when tested at a very young age. That's why it is not recommended to test a beef bull before 12 months of age. Bison mature even much later, so 18 months for them is the minimum age. On average, the timing or age factor is why only

about 50 per cent of 12-month-old bulls pass. The passing rate is elevated to 75 per cent by the time they are 14 to 15 months old. Many very young bulls that fail on initial semen tests pass in subsequent tests one to two months later.

It is difficult for veterinarians to predict ahead of time which young bulls will improve greatly. The only way is through retesting them. In my opinion, it does help if young bulls are housed close to cycling females. They will ejaculate off the senescent semen, which ultimately speeds up the improvement in semen evaluation.

DROPLETS DISAPPEAR WITH AGE

With the veterinarian documenting the morphological defects on the semen evaluation form, you can see over time if improvement is happening. The most dramatic change toward improvement I have seen involved a young bull with essentially 100 per cent proximal droplets, but over several months the percentage kept decreasing and eventually he had excellent semen as a two-year-old. He was a show bull and the question always comes up about whether he was too fat, or inactive or there was some other reason, which may have added to his issue for sure.

When we encounter lots of droplets in mature bulls (which is much rarer) veterinarians usually are cognizant of other defects that accompany the droplets to determine the overall prognosis.

Again, the proximal droplets are a much

more severe an issue than the distal droplets, realizing a certain percentage are shed before the sperm contact the egg in a natural breeding situation.

As producers evaluate semen reports, if most of the defects in a young bull are distal droplets and he still passes the semen test (overall defects are less than 30 per cent) there is a very good chance those defects will lessen with maturity and usage.

Over the years we have upped the ante by testing bulls at younger ages. In some instances bull sale dates have remained the same yet the purebred producers are calving later which translates into veterinarians testing younger and younger bulls.

When selling bulls off the farm, test as bulls as late or as mature as possible. The warm spring weather, with cows cycling close by, makes for an easier time in evaluating sperm, as opposed to the dead of winter when many bulls are little more than one year of age. Even one to two weeks older makes a big difference.

If semen evaluation is done later, the pass rate will be higher and it will be easier on everyone including the bulls. Don't ask your veterinarian to evaluate bulls less than one year of age. Waiting will benefit both you and the bulls. **GN**

Roy Lewis is an Alberta-based veterinarian specializing in large-animal practice. He is also a part-time technical services vet for Merck Animal Health.

SEEDS OF ENCOURAGEMENT

Winning the talent wars to attract the best team

Here's some tips from Donald Cooper on creating a better culture on the farm



Elaine Froese
www.elainefroese.com

Eight essential steps to attracting, engaging and leading a top-performing team" was presented by my speaking colleague Donald Cooper at the FarmTech 2017 conference in Edmonton. I appreciate Donald, who at age 75 has decades of business life experience for how he translates creating a better culture on our farms.

Much of this article are his tips, with my edits. Download many useful templates at www.donaldcooper.com/fbt/.

We hate to lose money as farmers, but do we understand the costs of losing a valuable employee who works well on our farm and is part of the team? Cooper wants us to understand the costs of retraining, and the cost of losing a great employee.

Are you a talent magnet? Don't stop looking.

1. CLARITY is the first step. What is the job description? What is our vision? What do we commit to become? Cooper is really big on commitment, which is different than motivation. Commitment means there is action at your business to accomplish what you set out to do; you are not just "trying."

2. Mission is the action we commit to do each year to move towards our vision... the extraordinary bottom line we commit to generate. How do we commit to behave along the way? Cooper talked about becoming bitter about your job, and then comes death! He would prefer that we show up on our farms with passion.

"You get to choose your journey," says Cooper. "Choose passion." Are your lights of joy on? No one will love your business more than you do.

Farmers need COMMITMENT to act. Are you keeping your promises for action on your farm?

"When we change our language we change our culture," exhorts Cooper. I agree.

"Lean and mean are not helpful words," he says "Let's be lean and kind!" It doesn't rhyme, get over it.

What is our purpose?

Our customer purpose is to help _____ to _____.

Our investor purpose is to generate an ROI of at least _____ per cent.

3. Take ownership of the problem. You can only solve problems that you take ownership of! The best people have to work for somebody, and you have to deserve them. "Whining is not very effective," says Cooper.

4. What kind of ag business would the best people want to work for?

5. Specifically, what must we do to become that kind of business?

Good people want opportunity to grow, clear honest, consistent communication, a positive uplifting environment with values they can be proud of, and recognition of work/life balance.

Make jobs more engaging and make people more productive.

How can you enrich jobs so that people are not bored?

Young people are smarter and better informed.

Work/life balance is important to them.

They know they have career choices.

Collaboration is the key word for young people.

They want to know "why?"

They feel entitled.

Determine the specific skills, qualities and experience required.

We become what we hire.

You can't build an extraordinary business by hiring ordinary people!

Do you know who you are looking for?

6. Talent issues to explore:

Knowledge experience;

Positive attitude and personality;

Judgment and maturity;

Ambition;

Physical requirement;

Fit with our culture, values and standards.

How are you playing the deck you got?

Where do we find the people with the qualities we need?

Where have you looked successfully? Other businesses, online?

Cooper suggests giving your farm business card to people who serve you well, and invite them to take a look at working for your farm. Great businesses are on a mission to make a great difference in the world.

We hate to lose money as farmers, but do we understand the costs of losing a valuable employee who works well on our farm and is part of the team?

7. Getting the interview right: Ask better questions:

- What did you like and not like about your previous jobs?

- Why did you leave?

- What would you like to get out of this job?

- What would you like to get out of your career?

- What would you like to be doing in three years?

- What would make this a great working experience for you? (Write a script to help you out to be a better interviewer.)

Test your candidates. Check references!

Here's a creative way to check references by leaving a voicemail:

"Would you rehire the person, and if not what would the concerns be?" Reference checker says "Only call me back if they were great!"

Create an introduction, training and ongoing communication for your employees.

Teach your history and share your vision.

Live by values that people can be proud of.

Share your results. Let them know they are part of a winning team.

Create a career path for those with the desire and ability.

Celebrate and reward success and deal with non-performance.

We cannot grow our businesses without growing ourselves.

"Train them so well that they can leave and then treat them so well that they don't want to leave," says Sir Richard Branson.

Make sure you are explaining why you were doing what you are doing. (We do this first for this reason... etc.)

People cannot read your mind! Communicate and then involve and explain your WHY. You get their ideas and input, and we learn from them by listening and we honour them. You want people to be more than informed, you want them to be committed.

Create regular idea fests three times a year. Do you capture great ideas from you team?

Challenge them to operate more efficiently, safely. Reward them with cash, e.g. \$50.

Do you give opportunity for your team to challenge and empower themselves?

Create a sense of urgency. Say, "By when can we agree that this will be completed?" Turn procrastination into insubordination. Create a culture of accountability.

Every person on your team is part

of your value or part of your problem! Are people able to be rescued or not?

8. Create a culture of celebration Acknowledge, reward and celebrate success.

Cooper believes that we have four currencies in our lives: money, time, feeling safe, and feeling special.

A recommended good read is *1501 Ways to Reward your Employees*, by Bob Nelson.

Give a thank you every day to your employees. Believe that you make a difference. **GN**

Elaine Froese, CSP, CAFA, CHICoach empowers families to communicate better and resolve conflict. Visit www.elainefroese.com/store to find more resources. Like her on Facebook at "farm family coach" or follow @elainefroese. Send mail to Box 957, Boissevain, Man. ROK OEO.

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PRAIRIE PALATE

Edible flower gardening

Flowers not only look good in the garden, lots of them make great eating



Amy Jo Ehman

Some people prefer to grow flowers and some people prefer to grow good things to eat, but me, I like to do both at once. Edible flower gardening.

Here are good reasons to eat flowers:

- Flowers taste good. Think of peppery nasturtiums, tangy tangerine marigolds, sweet red clover and the blossoms of herbs.
- Flowers are good for you. As tea drinkers already know, flowers have healthy attributes such as calming camomile and echinacea for colds. Flowers from vegetables "going to seed" can have the same nutritional aspects as the vegetable itself, such as broccoli florets gone to flowers and overgrown arugula.

Of course, it's nigh impossible to buy edible flowers at the grocery store (and you should never eat the

flowers sold there for esthetic purposes). But lucky for us, culinary flowers are easy to grow. They don't need much space, they look lovely in the garden and, for those who prefer flowers in the front yard, they do double duty as an edible flower bed.

Here is a list of my favourite edible flowers based on their status in a Prairie garden:

- Perennials: Johnny-jump-ups, borage, thyme, chive, tulips.
- Planted from seed: scarlet runner bean, basil, radish, arugula, nasturtium, zucchini.
- Bedding plants: tangerine marigold, lavender, dianthus (a.k.a. pinks).
- Picked in the wild (or the neighbourhood): clover, wild rose, lilac, caragana.

Some of you may notice the dandelion is not on this list. Back in the day, a great deal of wine was made with dandelion flowers, and I'm a big fan of eating the leaves, but I've yet to find a means of serving them for dinner. I'm still looking.

As a note of caution, some garden flowers are considered poisonous, such as potato and sweet pea, so do your own research if you wish to eat a flower not on this list. And never eat a flower that has been sprayed. Above all, my favourite culinary flower is the zucchini. They are sunny in the garden, versatile in the kitchen and, by eating them, the best means of controlling the output of the zucchini harvest. In Mediterranean countries they are stuffed and deep fried, baked in sauces and stirred into risotto. In season, you can find them for sale at farmers' markets.

Here are a few tips for picking and preparing zucchini flowers. There are male and female flowers. Zucchini grow from the female flowers so don't pick all the female flowers or you will get no zucchini. On the other hand, don't pick all the male flowers as they are required to fertilize the female flowers. I like to pick a mix of both. How to tell? Two ways: the inside of the male flower has a

single stamen, while the inside of the female flower has a more complex-looking stigma. Also, male flowers are attached to stems, while female flowers are attached to baby zucchini. It's best to pick zucchini flowers in the morning when they are fresh and wide open so you can insert your fingers and pinch off the stamen or stigma inside. I like to pick the female flowers with the baby zucchini still attached. Do this carefully as the two will separate if roughly handled. Or, you can snap off the flower and leave the zucchini to grow up.

You may be asking, Why is she writing about edible flowers this time of year? Like many of you, I am planning my garden. You can find more ideas for eating flowers on pinterest at ajehman.com/edible-flowers. **GN**

Amy Jo Ehman is the author of *Prairie Feast: A Writer's Journey Home for Dinner, and, Out of Old Saskatchewan Kitchens*. She hails from Craik, Saskatchewan.

STUFFED ZUCCHINI FLOWERS

6-8 zucchini flowers
2 tbsp. chopped fresh basil (or a mix of herbs such as parsley, thyme, marjoram)
2 tbsp. grated Parmesan cheese
1/4 c. good-quality bread crumbs
1/2 c. water or beer
1/2 c. flour
1 tsp. baking powder
1/2 tsp. salt
Vegetable oil

Stir together the herbs, cheese and bread crumbs. Make a batter with the water, flour, baking powder and salt. The batter should be thick enough to coat the flowers but thin enough that you can roll the flowers in it without tearing them. Add more liquid as needed. Meanwhile, in a saucepan heat 2 in. (5 cm) of vegetable oil on medium high until the surface of the oil shimmers. Cup a flower in your hand and, using a small spoon (I use one of those souvenir teaspoons you find in second-hand stores) scoop some filling into the flower. Fill the body of the flower only, up to the point where the petals separate. Draw the petals together, twirl them closed and set aside. Fill all the flowers before cooking them. Roll each flower gently in batter and slip it into the hot oil. Do not crowd the flowers or they will stick together. Depending on the size of the pot, you will probably need to do this in 2 or 3 batches. When lightly browned on the bottom, flip and cook the other side. Remove cooked flowers and set them on paper towel. Sprinkle with salt (optional). Serve immediately.

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FROM THE FARM

Caring for orphan animals on the farm

Usually we have a dropped-off pregnant cat or abandoned dog but what to do with a young bird?



Debbie Chikousky

Many orphan animals have come to spend time on our farm over the years. They are usually pregnant cats and abandoned dogs, needy creatures dropped off close to our yard that we care for and find homes for, but rarely have there been little birds. Our goal is to help them fully recover and move on to live the lives that were meant for them, away from here.

One of our most memorable guests was a little sparrow. We named it Birdie Bird, and through that bird we all learned a lot. Birdie Bird's adventure started on a very warm spring day. The yard was mushy behind the barn so when we let the cows that had calved out for water they were leaving indentations in the dirt. On one of the trips back and forth a tiny little sparrow was found in one of these indentations by our younger children. They asked Dad what to do with it and he said to bring it to Mom because she would know how to fix it. They did.

These were the days before Internet, and as it was a weekend, Natural Resources was closed. How would we learn how to feed it?

There I sat, all alone, with a very ugly little peeping creature in an empty tissue box without a clue as to what to do. I had tried to save these little birds many times in my life, since a child, and never could. What I realized is that at the very least I knew what hadn't worked, and I did know how to raise a chicken, so we would start from there.

Once it was established that this little one had no injuries, the family tried to find its nest – the ideal solution when a bird is this young. Rarely do the parent birds refuse the returned chick, especially if the person wears latex gloves when they handle it. Since the nest couldn't be found, this was not an option.

These were the days before Internet, and as it was a weekend, Natural Resources was closed. How would we learn how to feed it? An older lady told us that her mother used to hard boil chicken eggs and mix in cornmeal for grit and fed her chicks with that for years before commercial chick starter was available.

We decided to try this, making sure the consistency was mushy but not runny, so the bird wouldn't choke. Using a syringe we fed the little one by drops, and it very quickly let us know when it was hungry.

Heat was the other need. A combi-

nation of a heating pad on low heat under the tissue box (which we kept covered with a rag) and its homemade nest worked well, as long as a light bulb was over it too. We added a little nest for the first while made of raw sheep's wool.

Some approximate temperatures to use for a guideline are:

- Unfeathered chicks – 90 F;
- Chicks with some pinfeathers – 85 F;
- Fully feathered chicks – 75 F.

It is not safe to drop plain water into a

chick's beak so they depend on what is in their food for hydration. Check hydration by looking inside the bird's mouth; it should look moist. A dehydrated bird will usually have reddish-looking skin. Or you can pull the skin up on the back of its neck; the skin should spring back as soon as you let it go. As the little one grew, adding applesauce to its chick starter/egg yolk mush worked very well. A hydrated bird is active, happy and grows feathers quite quickly.

Once they are feathered a recycled

bird cage is perfect for keeping them safe. They learn to eat from a dish and learn to fly. Every time Birdie Bird was flying around the house and someone would be sitting and reading, it would sit on the edge of the book and join in, enjoying the human company.

Since Birdie Bird we have had other opportunities to help little birds, but none have been quite as memorable. **GN**

Debbie Chikousky farms at Narcisse, Manitoba.



PHOTO: DEBBIE CHIKOUSKY

If anyone was reading a book, the little sparrow would love to sit on the edge and join in.

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SINGING GARDENER

Start thinking about potatoes and tomatoes this month

March is the time to sprout spuds and start seeds



Ted Meseyton
singinggardener@mts.net

March is a good month to begin sprouting potatoes and starting tomatoes. Also, will be sharing Part 1 of excerpts from two pages of a handwritten letter. Top that off with where to buy late blight-resistant tomato seeds. There's a song that says, "I need attention bad." Did I get yours? Thank you folks for attending my classroom of words here in *Grainews* where the focus is "all for gardening and gardening for all."

Next, I'm taking a moment for my tip o' the hat salutation. It's my way of acknowledging everyone joining me on this page and a greeting that says: howdy good people. Glad to be with you again and welcome readers.



THE WHOLE SEED POTATO SPROUTING METHOD

This method comes from a reader located about 120 kilometres east of Edmonton who prefers not to have her name mentioned. Get some cardboard boxes. Cut all sides down to about five to seven cm (two or three inches) high. Do not cut the potatoes. Leave them entirely whole. Remove all sprouts if there are any. Spread potatoes in single file inside prepared cut-down boxes. Keep potatoes separated as much as possible and set each box in natural light and it doesn't have to be the brightest light.

Here's her quote: "You need no dirt, no water, no paper, no nothing. Just whole potatoes that are separated in single file in a box. That's all you have to do. Wait until they sprout leaves. There are no sprouts in the usual sense of the word. They just grow leaves. Plant 'em in ground at the appropriate time. You can do two or three batches for early, mid-season and late plantings."

FROM GRANUM, ALBERTA — A HANDWRITTEN LETTER

"Jan. 20-2017. Hello Ted. Thank you for the garden page. I read it first. Regarding wireworms in the Jan. 10 issue. Many years ago, I waited forever it seemed for the corn to come up. Then I started to scratch in the dirt where corn had been planted. Wireworms, all sizes in every corn seed; some contained up to three. I uncovered all four rows of corn, decapitated countless numbers of worms. I still catch a few worms and keep watching for the click beetles. There is in the



PHOTO: COURTESY W.H. PERRON

In recent years, late blight has been a common issue among a lot of home tomato growers. Mountain Merit has good resistance to multiple diseases including high tolerance to late blight. Compact determinate plants produce a concentrated set of medium-size red tomatoes mid-season during a harvest window of four to five weeks.



PHOTO: TED MESEYTON

It's a diverse natural world with thousands of different ground beetles located throughout N. America. No accurate identity is provided for this specimen. It appears to be a predator but looks don't tell everything. Consult your agricultural rep or a referral when seeking to determine predator or pest habits of any specific ground beetle located in your garden or field.

garden a very speedy, shiny black beetle that is almost the same size as the click beetle. Upon closer inspection I noticed it has powerful-looking jaws and I wonder if it is a predator."

Notes from Ted: More excerpts from said letter shall be continued next column with name withheld by request. The writer is better than 80 years of age. While I, Ted, can't be absolutely certain, my guess is the "shiny black beetle with powerful-looking jaws" (referred to in the letter) just might be a member of a certain bunch of Fiery Searcher ground beetles. Many in the group are extremely beneficial common ground beetles that feed on slugs, cutworms, caterpillars, wireworms, snails and on and on. Such habits have also earned them the less exotic name "caterpillar hunter." When handled, some can give off a very unpleasant smell. Perhaps it's their body odour from consuming such a variety of soil insect pests.

LATE BLIGHT-RESISTANT TOMATOES

My focus next is on a selection of three hybrid named tomatoes that are known for their high degree of late blight resistance. Vicky Berg has had close to 25 years of intense experience both in home gardening and a deep understanding of dealing with gardeners' needs and expectations at her job. She wrote the following to me.

"Hi Ted, Here is a brief paragraph on my growing experience. Mountain Merit — I found that this tomato has one of the best all-around disease packages of tomatoes; not just late blight. The fruit is larger than Defiant but not quite as flavourful.

"Defiant — The flavour of Defiant is the best of all late blight varieties that I have tried. It isn't as big as Mountain Merit but it still gives an abundance of six-oz. fruit."

The third variety in this group is Mountain Magic. It is described as an excellent-tasting compact-type cocktail tomato. Dark-red fruits appear in concentrated sets or clusters, are tolerant to cracking, great for salads and eating out of hand and get this — have a long shelf life.

All three have been well tested in trials and are highly resistant to late blight. The key factor is to "spread the word" to garden centres, nurseries, garden clubs and the general public that growing late blight-resistant tomatoes in their home gardens can help reduce transmission of plant disease. It's also of immense benefit to potato farmers as blight is a costly disease that affects quality of their crops.

If you, the reader and as a gardener, grow or have grown other tomato varieties that have demonstrated good disease and late blight resistance and wish to share with fellow readers, let me hear from you.

Check at local garden centres for such tomato seeds and inquire at greenhouses and plant sellers for started plants of named varieties. Also, there are seed catalogues that list one or more of aforesaid. Here are some sources:

Early's Garden Centre, Saskatoon, Sask. S7J 0S5, phone 1-800-667-1159; has Defiant and Mountain Merit.

West Coast Seeds, Delta, B.C., V4L 2P1, phone 1-888-804-8820; has Mountain Merit.

W.H. Perron, Laval, Que., H7P 5R9, phone 1-800-723-9071; has Mountain Magic and Mountain Merit.

Vesey's Seeds, Charlottetown, P.E.I., C1A 8K6, phone 1-800-363-7333; has Defiant, Mountain Magic and Mountain Merit.

THE WOODEN BOWL

A frail elderly man went to live with his son, daughter-in-law, and four-year-old grandson. His hands trembled, eyesight was blurred, and he walked with faltering steps. The family ate together at the table but the elderly grandfather's shaky hands and failing sight made eating difficult for him. Peas rolled off his spoon onto the floor. When he grasped the glass, milk spilled on the tablecloth. The son and daughter-in-law became irritated with the mess. "We must do something about Father," said the son. "I've had enough of his spilled milk, noisy eating and food on the floor!"

So the husband and wife set a small table in the corner where Granddad sat and ate alone. Since Grandfather

had broken a dish or two and dropped cutlery, his food was served in a wooden bowl. The four-year-old watched it all in silence.

One evening before supper, the father noticed his son playing with wood scraps on the floor. He asked his son: "What are you making?" In a child's voice the boy responded, "Oh, I am making a little bowl for you and Mama to eat your food in when I grow up." The four-year-old smiled and went back to play.

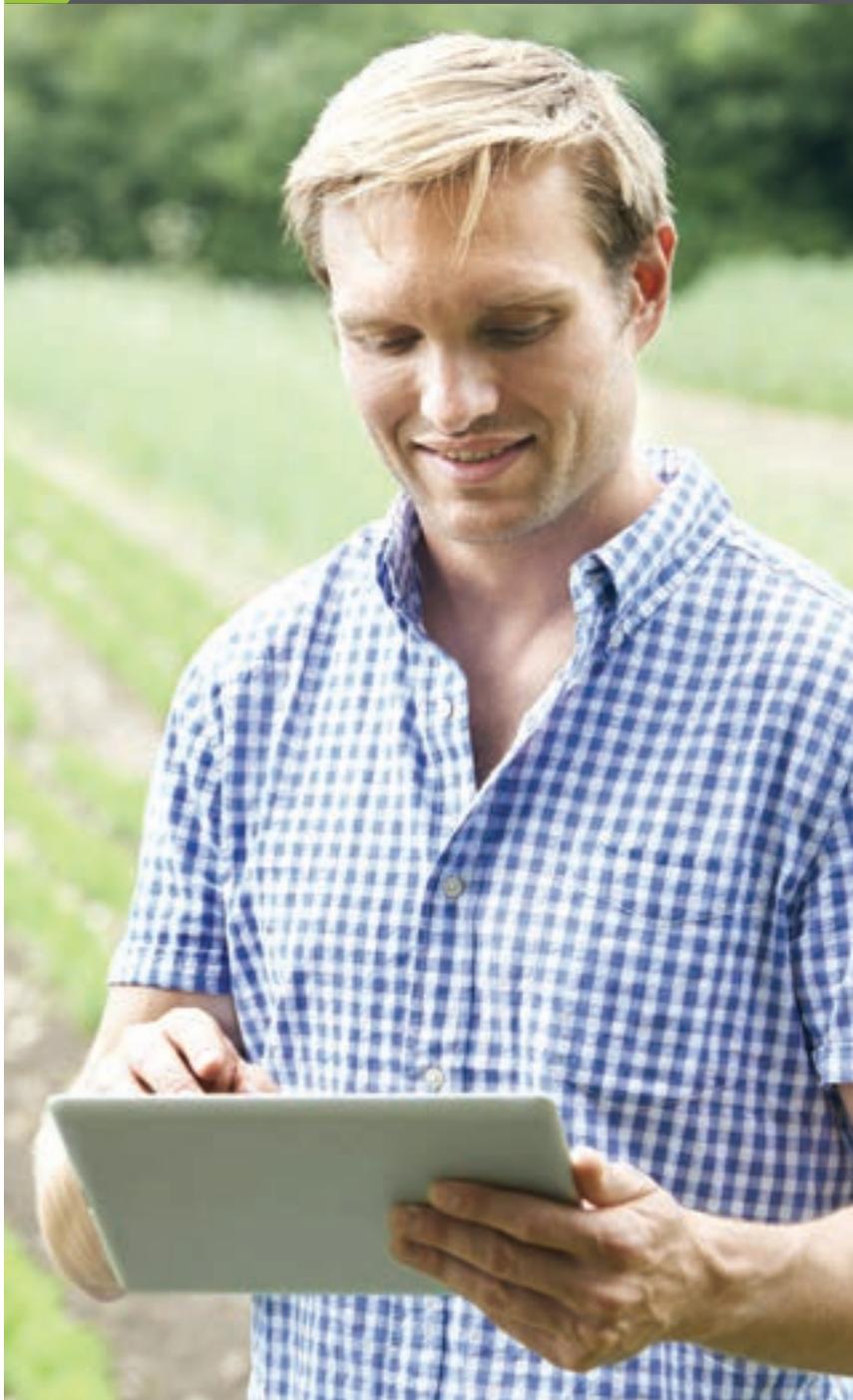
The words struck the parents so profoundly and deep that they were speechless and tears began streaming down their cheeks. No words were spoken, but they knew what must be done at once.

That evening the son took his dad's hand and gently led him back to the family table. For the remainder of his days Granddad ate every meal with son, daughter-in-law and grandson as a family, thanks to the wisdom of a four-year-old. "And a child shall lead them." After that, neither the husband nor wife ever cared again when a fork was dropped, milk spilled, the tablecloth soiled, or peas rolled. **GM**



This is Ted Meseyton the Singing Gardener and Grow-It Poet from Portage la Prairie, Man. You can discover more about a person in a day of action and work than during a year of idle conversation. singinggardener@mts.net

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