

FEATURE

Lee Hart's Farmer Panel

Spring seeding conditions are a mixed bag across the Prairies **8**



FEATURE

Pea leaf weevil moves in to new territory

Be on guard in your field pea and faba bean fields **9**



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Practical production tips
for the prairie farmer

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INSECT MANAGEMENT

A NEW SPECIES OF MIDGE

Researchers say this new "anonymous" midge is not an imminent concern, but it's worth watching

This is a photo of the female of the new "anonymous" midge species.

PHOTO: AAFC, SASKATOON



By Angela Lovell

An anonymous midge species has been identified in Saskatchewan and central Alberta. The new species is similar to Swede midge (a species already present in Saskatchewan), but to this point does not appear to have caused significant, widespread damage in canola crops.

Researchers are still trying to find out more about the as yet unnamed midge species. "We've positively identified that it isn't Swede midge, and we've looked at a lot of other described species. So far, it has not matched up to any of those so we are very certain that it's yet to be described and is basically a new species," says research scientist Dr. Boyd Mori of Agriculture and Agri-Food Canada's Saskatoon Research and Development Centre. Mori first discovered the new midge in soil emergence traps. "We need one more field season to research it and maybe this fall we'll have a name for it."

Judging by what researchers have seen to date, they don't believe pro-

ducers should be too concerned about the anonymous midge, or Swede midge, another species that only began showing up in Prairie fields about 10 years ago, for the upcoming season.

Last season's warm, moist spring, which followed an exceptionally mild winter, provided ideal conditions for an explosion of Swede midge (and presumably the new midge species) across the Prairies. Crops emerged six to seven weeks early, favouring Swede midge, which has caused devastation in Ontario, where it can produce up to four or five generations, depending on conditions, in a single season. "We were definitely anticipating some surprises last season," says Saskatchewan provincial entomologist Scott Hartley. "A warmer spring than we'd had for a while, and the much earlier emergence of crops provided a longer period of time for something that has multiple generations in a year to attack, and we expected to see more of the symptoms that we see in Ontario."

See **NEW SPECIES** on Page 5 ►

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PLUS

I'll just have salad for dinner

Yes, even you. If it's a hearty one with pasta and meat like this Vietnamese salad **32**



CONTENTS **3** | COLUMNS **15** | CATTLEMEN'S CORNER **26**

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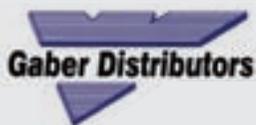
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CONTENTS



Simple tool for testing moisture

Michael Thomas describes hay-testing technique **26**



New aphid app

Ag Canada's first smartphone app will help farmers scout for aphids **10**



Seed treatment systems

Treat your seed on your own farm for \$1,000 to \$8,000 **22**

Crop Advisor's Casebook. 6	Machinery & Shop 21
Features. 7	Cattleman's Corner 26
Columns. 15	FarmLife. 31

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Finally! spring is in the air



Leeann Minogue

leeann.minogue@fbcpublishing.com

It's not easy to be enthusiastic about spring seeding when all of the weather reports are showing photos of snow on the ground across the western Prairies in late April. Thankfully, we didn't get caught up in the late-April snows. By the end of the month, there were only a few lingering snowbanks in the trees and sloughs here, but it was still too cold to start seeding on our farm.

Not that there was nothing to do. The local terminals have called in lots of wheat and canola, we're still picking up fertilizer and customers have been dropping by the

farm to pick up seed. The soccer season is in full swing (though many of the kids are wearing toques on the field to keep their ears from freezing).

As of now, we are cautiously optimistic about the growing season in southeast Saskatchewan. We seem to have the right amount of moisture. But, as we know from experience, at this stage in the game we don't even have a guarantee that we'll get our crop into the ground, let alone successfully off the field.

If you're still dealing with last year's crop, or waiting for the spring moisture to dry up, at least you're not alone.

Enjoy the spring. **GN**

Leeann



During the last week of April, it was still too cold to seed. Our neighbour was using the time to float on some fertilizer.

PHOTO: LEEANN MINOGUE



Agritechnica has approximately 2,900 exhibitors.

See Agritechnica with *Grainews*

Have you been waiting for your chance to see the world's largest farm machinery show? *Grainews* and Leader Tours have put together a tour to Germany just for *Grainews* readers. This tour includes two days at Agritechnica, and a visit to the CLAAS combine factory. There will also be a walking tour of Berlin, a stroll through Kassel and a tour of the Heidelberg Castle.

The trip runs from November 8 to 16, 2017.

This will be machinery editor Scott Garvey's fifth trip to Agritechnica. Scott will be along to orient guests and make sure you know where you want to go once we get to the show. I'll be hosting the trip — making sure everyone gets on the right bus each day, and answering any questions that come up during the week.

I'm intrigued by the visit to the DLG-Test Centre. This organization is funded by the German government, and does impartial testing on agricultural machinery and equipment and farm inputs. They say they are "the leading testing and certification service provider for independent and impartial technology tests in the agriculture sector." You can read more about this at www.dlg.org. (Switch from German to English with the flag in the top right corner of the screen.)

Visit www.leadertours.ca/grainews for the full tour agenda, pricing information and booking forms. Or, you can email Scott or me, or call Leader Tours at 1-844-370-7044 for more information. Leader Tours would like your confirmation deposits by June 15.

Leeann Minogue

FARM SAFETY

Use safety practices to avoid ATV rollovers

All terrain vehicles (ATV) 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 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 <http://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.

Give us your best shot!



Terry Yuzik from Wakaw, Sask. sent us this picture, along with this note: "Coffee break this afternoon and our little granddaughter, Miss Hadley Rae, decided to take a time out under the table and check out what's new in *Grainews!*"

I replied by asking if they thought she'd still be reading *Grainews* when she was a teenager, and Terry said, "Well there's a pretty good chance. She is a sixth-generation farmer and already is wearing her first pair of Carhartts."

Thank you so much for sharing this! We're sending you a cheque for \$25.

Send your best shot by email to leeann@fbcpublishing.com or through Twitter at @GrainMuse. 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

AGRONOMY TIPS... FROM THE FIELD

DON'T RUSH CANOLA INTO COOLER SOILS

Your flea beetle management strategy this season is going to depend on what type of weather conditions and soil temperatures experienced in the days leading up to seeding.

Striped flea beetles are going to be a significant threat to your emerging canola, and were responsible for about 90 per cent of the feeding damage we saw in fields last season.

If we end up having a cold, dry spring with cool soils — similar to 2016 — you're going to see limited plant populations struggling to emerge and getting overrun by striped flea beetles.

However, if we get warmer soils and an ideal amount of moisture, canola should be able to develop leaves quick enough to better withstand and outgrow flea beetle feeding damage by the time it reaches the first true leaf stage.

That being said, it's always good practice, when possible, to avoid seeding your canola too early and into cool soils. If cool soil temperatures persist, you may want to consider seeding other crops that can better handle low soil temperatures.

By waiting and seeding your canola into warm, moist soils, you increase the odds of establishing healthy, rapid growing canola plants that can better deal with the stress of flea beetle feeding. **GN**

Rob Bishop, seedcare specialist, Syngenta Canada.

FARMERSMATCH

Spring romance

Looking for love? The days of finding your ideal spouse in the *Western Producer* classified ads are long gone, but if you (or your child or grandchild) have been reluctant to turn to the Internet to find your mate, maybe you've been waiting for this new app.

FarmersMatch is an app for smartphones aimed specifically at "country" singles. It was exclusively designed for farmers, ranchers and other rural people who are looking for love.

This is a global app, and it's only a year old, so I asked the founder, Derek Ma, if there were many users from the Canadian Prairies. As of April, from Alberta, Saskatchewan and Manitoba there were 1,767 single women and 1,572 single men. Surely that's enough selection?

Find FarmersMatch in the app store for your Apple or android phone, or look up www.farmersmatch.com for more information. If this works out for you, feel free to invite me to the wedding!

Leeann Minogue

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INSECT MANAGEMENT

► NEW SPECIES from Page 1

DIFFERENT FACTORS ON THE PRAIRIES

Thankfully, damage from Swede midge was minimal last year, leading researchers to surmise that the difference in climate on the Prairies — a generally shorter growing season and a cooler spring — could be limiting the number of generations to two or three and preventing both species of midge from becoming more damaging pests in canola.

The first year that Swede midge caused notable damage in Prairie crops was 2012, but it doesn't appear damage from midge has increased since, so researchers are not sure if Prairie populations are stable. "We just don't know what they need on the Prairies yet," says Mori. "As part of a future study, we're hoping to delve into the life cycle of both this new midge, and Swede midge, to try and determine whether populations are increasing, decreasing or stable and if it is likely to have an impact for producers. Right now, it doesn't look like it, but if populations were to keep increasing, then every flower on the plant might be affected and if that happens, of course, there's going to be some yield loss."

Swede midge, from what researchers understand about its life cycle in Ontario, needs increased soil moisture, warm conditions and a rain event to prompt large emergence. Canola is highly susceptible to Swede midge through almost all growing stages, so with the long length of susceptibility, plus a large number of generations, it could have a dramatic impact on yield, as it often does in Eastern Canada. "The fact that we might only have two or three genera-

tions on the Prairies would definitely be helpful," says Mori. "It would be less opportunity for it to attack canola, and cause less damage."

A HARD PEST TO CONTROL IN CANOLA

There is as yet no economic threshold for Swede midge in canola, and current control strategies are limited.

The female midge lays her eggs on the actively growing tissue and when the larvae feed, they deform and crumple the tissue, and enclose themselves inside the tissue. So far, the only confirmed symptoms from the new midge species are bottle-shaped, galled flowers that form as a result of the larvae feeding inside the flowers. "That makes it hard for a contact insecticide to reach those larvae, so even if farmers spray they are not likely killing them," says Mori. "It's very difficult to time sprays to control adults, especially if we have multiple overlapping generations. Unfortunately, right now, controls in canola are lacking. There are two registered insecticides which have been used in Ontario for Swede midge, but as far as determining when to spray, that's really up to the grower and agronomist to make somewhat of an educated guess to try and do it."

Damaged flowers do not produce pods and seeds, but because there are a lot of other reasons why canola may not produce pods, including heat blasting or lygus bugs, it would be necessary to find the midge in the flowers to confirm they are the cause of reduced pod production.

Better management options for now, would appear to be planting as early as possible and longer rotations. "The faster farmers can get the canola crop to the early pod for-

mation stage the better, because that's really when it's no longer susceptible to Swede midge," says Mori. "Rotation is definitely key, as Swede midge can overwinter as pupae in the soil for longer than one year. If farmers have a short rotation, they may think it's okay to grow canola one year, followed by wheat, and then go back to canola, but there could still be pupae from two years prior in that field that are emerging. Unfortunately, we do see a lot more short rotations on the Prairies, but if we could increase these rotations again, that would definitely have an impact on Swede midge populations and many other pests also."

There's also some hope for biological control. Researchers have found two species of parasitoid wasps in Saskatchewan that could provide effective, natural control for midge.

"Right now we're not sure if these wasps are parasitizing both the Swede midge and this anonymous midge, so we want to do more research to see which species they are attacking," says Mori. "Last summer was the first year that they found parasitoids of midge in Ontario. They found one species and it's not the same as either of the two species found in Saskatchewan. Swede midge has been in Ontario for over 20 years, so it's quite interesting that it's taken over 20 years for there to be a parasitoid there, but it's taken less than 10 years for there to be parasitoids in Saskatchewan."

SPECIES COULD BE NATIVE

The wide distribution of the new anonymous midge species and the discovery that there are parasitic insects for Swede midge already present on the Prairies makes researchers wonder if the new midge might be a native spe-

cies that has developed new tastes. "It's pure speculation at this point, but to this point we have found the anonymous midge on quite a wide scale. We found it all across northern Saskatchewan and throughout east and central Alberta. Given that it has this large distribution, I'm inclined to think it might be a native species that has switched, and taken the opportunity now that we have so much canola grown, to develop on canola," says Mori. "It's slightly supported by the fact that there are two parasitoids that might be parasitizing it. If it's native you'd think that there would be some native parasitoids associated with it, so that could be supportive of the fact that it's native, but we're not sure. This summer we're going to look at some of the brassica weed species to see if it is also developing on them in the field, and determine if they could be an alternative host, or maybe the natural host, for this midge."

Mori emphasizes that farmers should remain vigilant, but not overly concerned about Swede or the anonymous midge for the present. "Luckily Swede midge was not an issue last summer, we didn't find any, but perhaps the places we put our pheromone traps may not have had the populations there. They could have been a few miles down the road," says Mori. "We advise farmers to be vigilant, and if they see large scale damage that looks like an insect pest, and that might be one of these midges, get in touch with us and we'll help figure this out. Meanwhile, we'll continue to research it and try and figure out if it will become an economic pest in the future." **GN**

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

DISEASE MANAGEMENT

Beneficial bacteria getting close

New products may promote plant growth and protect crops from disease

By **Julienne Isaacs**

Nitrogen-fixing bacteria are present in the root nodules of the majority of legumes, like soybeans and alfalfa.

Other "beneficial bacteria" can be found in symbiotic relationships with crop plants that promote growth, increase stress or pest resistance, or increase nutrient solubility.

Only in recent years have scientists been able to point to specific bacteria that can perform specific services for crops, and "bottled" them and sold them. But this February, the biological crop protection market was forecasted to grow at a rate of 11.33 per cent over the 2016 to 2021 period, driven by "agricultural productivity as well as increase in demand for chemical free crop protection solution [sic]," according to a Research and Markets study.

There's clearly a future in bacteria, and science and industry are capitalizing on it.

BACTERIA IN THE LAB

At Ze-Chun Yuan's lab in London, Ont., the Agriculture and Agri-Food Canada scientist has been working on isolating beneficial bacteria for six years. His goal is to develop viable alternatives to chemical fertilizers and crop protection products that lessen the strain on the environment — and producers' pocketbooks.

"On the plant pathology side, you have two ways to manage plant disease. You can use a pesticide, or you can use beneficial bacteria that can protect plants and maybe also produce some nutrients in the soil," he says. "It's a more natural process."

Yuan's program has seen some important successes. His team has identified three bacteria that have potential applications for crops. *Paenibacillus polymyxa* CR1 was the

first of these to undergo complete genome sequencing by AAFC.

This bacterium not only fixes nitrogen and produces a growth-promoting hormone, it also produces chemicals that can potentially protect plants against diseases and pests.

But it's only one of many bacteria that Yuan and his team are examining. "We have about 2,000, almost 3,000, bacteria isolated from corn and soybean roots or legume roots. We also have a lot from wheat," he says. "We just got a new freezer!"

The bacteria Yuan is interested in produce what are called "endospores," extremely resilient "packages" that contain the bacteria's genetic material and can survive under harsh conditions. For agricultural applications, this is a big advantage, says Yuan. The endospores, which are a few hundred times smaller than their "parent" bacteria, can be mixed with powder and sprayed on crops or applied

as biopesticide or biofertilizer seed coatings.

This summer, Yuan intends to test both methods in field trials on soybeans, corn and tomatoes. The trials will look at *P. polymyxa* CR1 as well as a handful of other bacteria.

The trials will be held at AAFC's research centre in London, but Yuan wants to collaborate with as many partners as possible, including grower groups and organizations, to expand the research to other Canadian provinces.

It might take a few years before *P. polymyxa* CR1, or some of the other almost 3,000 beneficial bacteria in Yuan's freezers, hit the market in product form. But Yuan is confident that they will. "We need a year or two to figure out what the best formulation is," he says. **GN**

Julienne Isaacs is a Winnipeg-based freelance writer and editor. Contact her at julienne.isaacs@gmail.com.

CROP ADVISOR'S CASEBOOK

Thin plant stand in this wheat field

By Dan Friesen

John, a Manitoba producer, asked me for a recommendation on an in-crop herbicide that would best suit the needs of his wheat crop.

It was the end of May when I made my way out to John's 3,000-acre farm near Starbuck, Man. I wanted to scout his field before advising him on crop inputs.

When I approached the field, I thought the wheat crop looked normal. However, the initial scout revealed the crop had a thin plant stand. After carrying out plant stand counts, I confirmed wheat plant density in this field was lower than average, with approximately 180 to 190 plants per square metre. As a result, higher weed pressure was being exerted on the crop.

At this point, I thought it was important to determine the cause of the thin plant stand. Examination of insect pressure and environmental stresses were good places to begin. John thought we should also look at seeding depth and fertilizer placement.

"Maybe I seeded too deep," he told me, "or applied too much phosphate fertilizer in the seed row."

That season, weather conditions had been favourable for crop growth. Thus, neither precipitation nor excess heat were factors decreasing plant stand density, and adverse environmental conditions could be stroked off our list.

In addition, we didn't find any insects, or evidence of pest dam-

age, that could be responsible for the thin plant population.

John and I dug in the soil looking for seed to determine the seeding depth of the crop. We found ungerminated seed at the correct depth, eliminating another possible source of decreased plant density.

Also, soil moisture levels were good, and John's seed drill has a two-inch spoon opener, ensuring the safe application of 77 pounds per acre of 11-52-0 (monoammonium phosphate) fertilizer, while also preventing salt toxicity. His drill also has mid-row banders for placement of 46-0-0 nitrogen (urea), eliminating the risk of seed burn due to additional salt or ammonia toxicity.

After ruling out these other factors, I knew we had to re-examine the cause of the ungerminated seed we had found earlier that day. I felt the ungerminated seed was at the heart of John's thin plant stand mystery.

Why was John's wheat plant stand density so low? If you think you know, send your diagnosis to *Grainews*, Box 9800, Winnipeg, Man., R3C 3K7; email Leeann@fbc-publishing.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**

Dan Friesen works for Richardson Pioneer Ltd. in Starbuck, Man.



Dan Friesen works for Richardson Pioneer Ltd. in Starbuck, Man.

Casebook winner

This issue's winner is Ross Verhelst. Ross, his wife Patricia and his two kids farm with his father and brother near Radville, Sask.

We're mailing Ross a *Grainews* cap, and signing him up for a free one-year subscription to the magazine.

You could be a winner too. If you know the answer to this issue of Casebook, email me at Leeann@fbc-publishing.com. We'll pool the answers and draw a winner for the June issue.

Leeann Minogue



Because the wheat crop had a thin stand, there was high weed pressure. Plant density was 180 to 190 plants per square metre. Ungerminated seed seemed to be the heart of the problem.

CROP ADVISOR'S SOLUTION

Canola is hung up on herbicide residue

By Samantha Sentes

From first sight, I was certain Kyle's canola field had been injured by herbicide residues hung up in his sprayer tank. The damaged plants exhibited delayed maturity, stunted growth, yellowing and purpling leaves, and damage to the main flowering stem. However, the most revealing clue to this case was the damaged area's pattern — which corresponded exactly to Kyle's first load of an in-crop, Group 10 herbicide, ending at the spot where he changed tanks.

The damaged area's green, stunted plants, located around the field's perimeter and on the back side of the field, stood in stark contrast to the bright yellow stand of flowering canola in the field's inner region. The damage pattern had a sharply demarked boundary, which included straight lines, not typically found in nature. However, this pattern corresponded exactly with Kyle's first tank of a herbicide application.

The previous crop Kyle sprayed with herbicide was a cereal. For me, this was confirmation that the symptoms exhibited by the injured

canola plants were caused by Group 2 herbicide residues in the sprayer tank.

Group 2 herbicide injury is a common problem in canola fields. Using proper tank cleanout procedures between different crops is essential to prevent sprayer contamination. Kyle cleaned his tank between herbicide applications, however, he must have missed some of the Group 2 herbicide residues.

Although there are many guidelines on tank cleanout procedures, the use of strong detergents, ammonia and multiple rinses is impor-

tant. In addition, remove and clean screens, nozzles and filters to prevent herbicide buildup in these areas.

Proper tank cleanout procedure is repetitive and time-consuming, but protecting the next crop from injury is worth the effort. Pay special attention to tank cleanout when using polyethylene tanks, as chemicals can become etched into the tank walls, making chemical products harder to remove.

In addition, some herbicides, such as Liberty (Group 10), are known to act as strong detergents, which can pull the smallest amounts of residue

out of sprayers, even after proper rinsing, and particularly when the components are polyethylene-based materials versus those composed of stainless steel.

In the end, Kyle's injured canola plants didn't die, but maturity was delayed. Yield in that portion of the field was also affected and was lower than the uninjured area. Rigorous and thorough cleaning of sprayer tanks may take more time, but saves crops from injury. **GN**

Samantha Sentes works for Richardson Pioneer Ltd. in Yorkton, Sask.

INSECT MANAGEMENT

Want better insect surveys? Help out

Provincial entomologists are looking to widen their insect survey networks

By **Melanie Epp**

Every year provincial entomologists hit the fields, setting pheromone-baited traps and monitoring insect activity. Your help with these projects could improve the information available in your region.

ALBERTA

Alberta Agriculture and Forestry insect management specialist Scott Meers relies on growers. "We have large areas to cover, so when we get input from growers and agronomists from across the province then we get much better coverage and much better surveys," Meers said.

And growers get something too: details about their own fields, especially those who work with entomologists year after year.

This year Meers is looking to widen his coverage for bertha armyworm, particularly in the Peace River region. "We feel we've been underrepresented up there," he said.

"We have reporting tools for cabbage seedpod weevil and for cutworms," he continued. "We'd really like agronomists to participate more by sharing numbers."

For cabbage seedpod weevil, participants are needed in south central Alberta and southern Alberta. Cutworm survey participants are welcome from anywhere in the province. Meers is also looking for soybean fields to monitor.

To participate, contact Scott Meers at: scott.meers@gov.ab.ca.

SASKATCHEWAN

The provincial insect and vertebrate pest specialist in Saskatchewan is Scott Hartley. Every year Hartley conducts a variety of insect surveys throughout the province. "It is primarily the bertha armyworm pheromone trapping where we require grower cooperators during June and July," Hartley said. "This is the only 'real time' survey during the growing season."

Interested parties should contact Danielle Stephens at pestsurveys@gov.sk.ca.

MANITOBA

Manitoba Agriculture entomologist John Gavloski is always grateful when growers offer their assistance.

Most of Gavloski's insect surveys are done to forecast later risks. These surveys include diamondback moth, bertha armyworm, and grasshoppers. "These trap or insect counts cannot be used to make decisions regarding insecticide applications," Gavloski said, "but when higher levels of these insects occur in the surveys, farmers and agronomists should give extra priority to scouting for potentially damaging stages at a later date."

As an example, Gavloski described pheromone trapping bertha armyworm in canola. The pheromone bait is used to lure in male moths, he said, but these are not the damaging stage of this potential pest. "It is the larvae, present in later July and into August

that potentially can be damaging," he said. "So trap counts are only meant to encourage scouting for larvae later in the season if needed, not to suggest that insecticides are needed."

Furthermore, fields that have high levels of moths in the traps may not actually have high levels of larvae. Traps attract the male moths. In the case of bertha armyworm, the crop stage at the time of egg laying can be important in how attractive the field is for female moths and how many eggs

are laid. It is not uncommon for fields with high trap counts to have low levels of larvae. Neighboring fields can end up with very different levels of larvae.

This year, Gavloski is involved in three projects where grower assistance could help.

The first involves cereal leaf beetle. While it is a potential pest, a parasitic wasp can help keep it below economic levels. "We have annually been monitoring where new populations of cereal leaf beetle are show-

ing up," said Gavloski. If there are no parasitoids established in the population, Gavloski will release some. Gavloski asks growers to contact him directly if they notice cereal leaf beetle larvae or feeding damage.

The second project looks at flea beetles in canola, and their predators and parasitoids. "We need canola fields for these studies," Gavloski said. "Ideally, within about a 90-minute drive from Winnipeg."

Finally, Gavloski is looking for

cereal fields where aphids can be counted starting in June. Gavloski and his team will look for predators and parasitoids that eat aphids, to establish an economic threshold for aphids in cereal crops that also accounts for their natural enemies. **GN**

Melanie Epp is a freelance farm writer.



To participate, contact John Gavloski at: John.Gavloski@gov.mb.ca.

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FARMER PANEL

Farmers facing mixed bag of conditions

Most farmers are on track for seeding, but many are dealing with last year's crop

By Lee Hart

On schedule with one-third of the crop seeded, still about a week away, and scrambling to get some of last year's crop harvested while working to get the 2017 crop in the ground — these are the range of reports from western Canadian farmers as of early May as they look at the cropping season ahead.

It is certainly a mixed bag of conditions across Western Canada. Several reports from producers contacted for the May Farmer Panel describe the season pretty well-on-schedule to slightly delayed across the country. Moisture is bordering on excessive in some parts of the prairies but if rain holds off farmers should be okay.

In southern Alberta seeding systems are running in the fields, while as you go further north up to 18 inches of heavy, wet snow on Easter weekend, followed by foot of snow about a week later is making it a greater challenge, especially for producers who still have varying amounts of last year's crop to get off the field.

As one farmer north of Highway 16 (The Yellowhead) put it, if the good Lord's willing and the creek don't rise, everything will get done — but only time will tell.

Here is how farmers across Western Canada describe their seeding season conditions as of May 1.

LORNE FLOYD ARBORG, MAN.

Lorne Floyd says conditions were cool and there was plenty of moisture in the Arborg area of Manitoba, about 120 km north of Winnipeg.

Floyd, who grows oats, soybeans and canola says seeding equipment was ready but he along with others hadn't turned any wheels yet as they wait for conditions to warm up.

"I'd say we're about on schedule with other years," says Floyd. "We usually don't start seeding for another week or 10 days, so I think things are looking pretty good. We're not too wet or too dry, but temperatures are below normal." They need a bit of heat in area.

Floyd plans to plant grain corn for the first time this year. He'll use his soybean planter to get the row-crop in the ground "and I'll wait to see what kind of crop we get before I think about a header for the combine."

RICK PROCYK FILLMORE, SASK.

Conditions were about "normal or average" for Rick Procyk in the Fillmore area south of Regina. Seeding equipment was ready and with a few dry days he will be ready to get in the field.

They had a delayed harvest in



Corey Loessin feels fortunate he got the 2016 crop off last fall. If conditions dry out and temperature warms a bit he should be on track for the 2017 seeding season on his Radisson, Sask., farm.

his area last fall, but got everything combined by Nov. 10. While it was wet last fall, as of early May he figured "a little rain wouldn't hurt."

Along with wheat, canola, lentils and soybeans he plans to seed some grain corn this spring. He won't be growing any flax, but will put in about 200 acres of corn.

"We thought we would dabble with a bit of corn to see how it does," says Procyk who farms along with his son Chris. "Hopefully in the next few days we will start banding some fertilizer for the corn."

Procyk has been growing soybeans for the past five years and it appears "to have a very good fit" in his area and is interested in trying new varieties.

COREY LOESSIN RADISSON, SASK.

Farmers need some warmer and drier weather in the Radisson, Sask., area, northeast of Saskatoon, says Corey Loessin.

With three snowstorms in the past week, he says conditions are a bit slow as they have plenty of moisture and "it has just been very cold." He usually starts seeding between May 1 and 5 and if the forecast holds for some decent spring weather, he expects seeding to be pretty well on schedule.

Loessin seeds about 20 per cent of the farm in pulse crops, about 30 per cent in canola and the rest in spring wheat and malt barley. He'll plan to grow some faba beans this

year after a couple of years' absence from his rotation. He will cut back on lentils. Faba beans have grown well in the past, and he is anxious to try a smaller-seed variety that should flow easier through the air seeding system.

He is maintaining his cereal acres although fusarium head-blight is an increasing concern. While some producers are considering tillage to reduce the prevalence of the disease, he doesn't see that as an option for his farm. He continues to select the best varieties and watch wheat and barley crop rotations.

"All in all, we are sitting in pretty good shape here," he says. "We were fortunate to get a crop harvested last fall. There are couple farms in the area that still have a few acres out. Now we just need it to warm up."

WILLIS BOSSAER NORTH BATTLEFORD, SASK.

Willis Bossaer says he usually doesn't start seeding until about May 10, so figures the season is on track for his farm near North Battleford.

It is a bit wetter than normal, so he will look to do some harrowing of fields as soon as conditions dry enough. "The higher ground is drying out pretty good," he says. "But we will have to wait before we can get on some of the lower spots."

He plans to be seeding barley, wheat canola, and peas this year

and still hadn't made a decision on lentils. He too was fortunate to get his entire crop combined last fall. There are some area farmers with badly lodged barley to combine.

ROD LANIER LETHBRIDGE, ALTA.

Rod Lanier wasn't gloating, but he was pleased to have about one-third of the crop on his Lethbridge-area farm seeded by April 30. With about 1,200 acres completed he seeded his durum wheat on hemp stubble and peas on durum stubble.

He hoped to get flax seeded later the first week of May and as one of long time hemp growers, it will be seeded last.

"Hemp is still a big part of our program here," says Lanier, whose rotation includes pulse crops, durum, hemp and flax. "Markets are still pretty good although with the activity in Korea that creates a bit of uncertainty," says. He is working with a couple different groups to get the market for hemp straw (fibre) off the ground.

JASON LENTZ BENTLEY, ALTA.

Jason Lentz counts himself lucky that he only has about 130 acres of ankle-high CPS wheat left in the field on his west-central Alberta farm near Bentley after the 2016 harvest. Others in the area have considerably more crop to deal with this spring before they start seeding.

Lentz isn't sure what he'll do with the CPS wheat, but chances are he'll just have to work it down.

"It has been a bit of slow spring, but conditions are starting to dry out," says Lentz who grows canola, malt barley and hard red spring and CPS wheat. "We usually don't start seeding until May 5 to 8 so if the forecast for good weather holds we should be pretty close to that."

They started some spring field work the last week of April, but had to pick and chose where they could work due to moisture. He says if seeding is delayed he may have to consider some earlier maturing varieties, seed more peas or more barley.

ROBERT SEMENIUK SMOKY LAKE, ALTA.

If it stops snowing and warms up a bit, Robert Semeniuk hopes he can start juggling the challenge of getting 900 acres of last year's crop off the field, while at the same time start seeding canola and cereals for 2017.

Semeniuk, who farms in the Smoky Lake area, northeast of Edmonton is among farmers in B.C., Alberta and Saskatchewan who collectively have about two million acres of last year's crop still in the field.

Semeniuk has about 800 acres of canola and about 100 acres of oats still in the field.

"I think the oats we'll just have to work in and the canola will have to be combined some how," he says. "We'll send samples away to see if it has any value, and if not about the only option I have is compost it. If there was only 40 acres worth you might be able to dump it in a fenceline, but we've got way too much. We'll compost it and put it back on the land."

Semeniuk, who still has a sense of humour, says he has put in plenty of sleepless nights trying to figure how to schedule everything. "It was looking in early April that we might have a chance to get at the combining, then we had a foot and a half of really heavy, wet snow on Easter weekend," he says. "And last week we had another foot of snow. So we are saturated here. We have to wait until things dry out a bit before we can start."

The part of the farm with last year's canola was the area he had planned to seed first. "We've had to change the schedule around completely," he says. "It is going to push the envelope but I believe we can make it work. I've got some extra help hired so when we can get on the land we'll be harvesting in some areas and seeding in others. We will make it work."

"First things have to dry out a bit. I don't think we will be turning a wheel before May 15." 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.

CROP PROTECTION

Pea leaf weevil moves into new territory

Pea leaf weevils are on the move. Know what you can do about them

By Melanie Epp

Pea leaf weevil numbers are on the rise. In fact, according to Scott Meers, an entomologist with Alberta Agriculture and Forestry, they're moving into areas where producers have no experience with them at all.

"We've seen a major expansion in the past several years of pea leaf weevil, especially up the west side of central Alberta," Meers said. "We're now finding pea leaf weevil well north and west of Edmonton, so that means it's moving into areas where people have no experience with it."

While it's not a strict forecast, Meers said experience shows that problem areas surface where heavy infestations were in the previous year.

Pea leaf weevil is a common pest in field peas and faba beans, primarily affecting crops grown in Alberta and Saskatchewan. Pea leaf weevil begins feeding as soon as the weather is warm enough. They can be problematic in a warm spring, especially if

their arrival coincides with crop emergence. The pest remains active until August, right through to the six- to eight-node stage, Meers said.

"A lot of weevils are active until August, but we're really concerned about the early stages," he said.

Of more concern, though, are the weevil larvae. They will go down into the soil and attack the nodules, Meers said. "The real loss is from the loss of the nodules and the resulting loss in nitrogen," he explained. "That's where the yield loss comes from. That, of course, is not as obvious unless you are actually digging up plants and looking for them."

HARD TO MONITOR

According to Hector Cárcamo, a research scientist with the insect pest management department of Agriculture and Agri-Food Canada, adult pea leaf weevils are difficult to monitor, especially since they tend to drop to the ground when approached. Their colour also makes them difficult to see against

the soil. For this reason, he suggests waiting quietly until weevils begin moving again. Weevils are most easily observed during the warmest part of the day, so late morning to mid-afternoon.

Threshold is determined by counting seedlings with terminal leaf feeding. "Probably the most obvious thing they will notice is leaf feeding," Meers said. "It looks like somebody took a hole punch and just punched out holes along the edge of the leaf, so you get these half-circle notches that are cut right out of the edge of the leaf."

Generally, leaf feeding does not impact yield; however, larval feeding on nitrogen-fixing nodules can. Only faba beans and field peas are at risk of yield loss.

There is a nominal threshold for pea leaf weevil in peas, Meers said, and that's one in three clam leaves. "By clam leaves, we mean the most recently emerged leaves," he explained. "The most recently emerged leaves are still folded together, so you have a pair of

leaves together and they look like they're a clam shell."

To assess threshold levels, look at those clam leaves and if you're getting, on average, one out of three — so 33 per cent — of the clam leaves with feeding damage on them, even a single notch, that is actually threshold level.

There is no nominal threshold in faba beans.

While threshold counts will help with the decision to use a seed treatment in the following year, the only real option for controlling pea leaf weevil is foliar insecticide. "The problem is we haven't been seeing yield response from applications of foliar insecticide," Meers said. "It stops the feeding, but it doesn't protect yield."

Insecticide will kill the weevils in the field, but eggs that have been laid will hatch and the emerging larvae will still feed. Meers doesn't recommend using a foliar insecticide unless leaf feeding is very extreme. **GN**

Melanie Epp is a freelance farm writer.



Pea leaf weevil is a common pest in field peas and faba beans, primarily affecting crops grown in Alberta and Saskatchewan.



When pea leaf weevils are feeding, it half-circle notches are cut out of the edges of the leaves.

PHOTOS: SHELLY BARKLEY

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INSECT MANAGEMENT

The new phone app for info on aphids

AAFC's first smartphone app will help farmers scout and sample for aphids and their predators

By Lisa Guenther

Agriculture and Agri-Food Canada (AAFC) is testing a new aphid app in the field this summer, which should be widely available by next growing season.

The cereal aphid app is the first smartphone app developed by AAFC, says Dr. Tyler Wist, a federal research scientist based in Saskatoon. It will guide cereal growers and agronomists through the scouting and sampling process, Wist says, and tell them whether crops are at a stage that leaves them vulnerable to aphid damage. It will base control recommendations on economic thresholds that will depend on the grower's comfort level with aphids, though 12 aphids per tiller will be the recommended target. The app will also include photos of the three most common cereal aphid species to help people identify them.

But the app's most interesting feature is that it will take into account the field's population of the aphids' predators, including lady beetles, green lacewing larvae, damselbugs, minute pirate bugs, and parasitoid wasps.

"Having natural enemies of aphids in the fields can prevent

the aphid population from reaching a damaging level and the app works to incorporate those natural enemies into the mathematical prediction model," says Wist.

Wist says the app will recommend people keep sampling until a proper sample size is reached. It will then recommend sampling again soon, recommend people not to worry about aphids, or suggest people consider an insecticide application.

Wist says the idea for the app came out of a project funded by the Pest Management Centre in 2012 and 2013. Researchers surveyed natural aphid enemies in cereal fields so they could incorporate those beneficial insects into the thresholds.

Wist adds they were inspired by a University of Guelph smartphone app, called Aphid Advisor, which looked at soybean aphids and their natural enemies. In 2015, Wist and his AAFC colleague Erl Svendsen received funding from the Pest Management Centre to refine the model that took into account natural predators, and use it in a smartphone app.

Wist says it's been a test project for how to develop these types of apps within AAFC. Several others were involved in building the app, he says, including Elham

Karimi, Kirby Frackleton, and Jackson MacDonald.

Wist and his students will be field-testing the app across multiple platforms this summer. Provincial entomologists Scott Meers, Scott Hartley, and John Gavloski will also be putting the app through its paces, along with agrologists recommended by the provincial agrologists.

SCOUTING TIPS IN THE INTERIM

Farmers and agronomists won't be able to download the cereal aphid app until next year. In the meantime, Wist has some scouting tips.

"Cereal aphids can be a problem wherever the winds bring them," says Wist. Farmers and agronomists should start scouting as soon as the crop is starting to head.

"Lately, we've been seeing aphids in crops from mid-July with a peak in the first week in August," says Wist. "That three to four week period is the most critical for aphid surveys."

When the migratory aphids land in a field, they might be confined to a few hot spots at first. However, once they start feeding and reproducing, they can spread through the field.

The first step is to figure out if

aphids have landed in the field. Scouters can use a sweep net in a few spots in the field. If they don't have a sweep net, they can tap plants over a white tray, to see if any aphids fall onto the tray, Wist says. Wist advises checking a few different areas of the field to try to catch any aphid hotspots.

If farmers or agronomists find aphids, Wist says they'll want to check more systematically by counting aphids on tillers. The economic threshold is an average of 12 to 15 aphids per tiller.

"This threshold is based on previous research on small cereals grains that indicated that this many aphids per head prior to the soft dough stage would reduce yield enough to warrant the cost of an insecticide application," says Wist. Once crop is past the soft dough stage, aphids can't damage yields and there's no need to control them, he adds.

Wist recommends looking at a total of 100 tillers per field. It's important to make control decisions based on the average over many tillers, rather than a few tillers that have many aphids, he adds. Agronomists and farmers should randomly select 20 tillers from five areas in the field, avoiding headlands and field margins. The sampled areas should each be separated by about 50 paces, he adds.

TOP THREE CEREAL APHIDS

There are several cereal aphid species found in the Western Canadian Prairies. English grain aphids and birdcherry-oat aphids are the most common, and often the most damaging. For example, the English grain aphid's reproductive rate doubles once it starts feeding on the heads.

Greenbug aphids are sometimes found in Western Canada as well. Wist says they cause additional damage to crops because their saliva is toxic to plants.

It's not essential to identify different aphid species for most scouting purposes, Wist says. But the app will use slightly different growth rates for each species.

Wist has also discovered that the main parasitoid wasp won't attack the birdcherry-oat aphid, but loves the English grain aphid. That particular insect makes up 98 per cent of the parasitoids that Wist has found so far. Wist is still monitoring aphids and running experiments in the field to figure out how important that parasitoid is in controlling English grain aphid populations, he adds. **GN**

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



PHOTO: LISA GUENTHER

Damselbugs are one of the beneficial insects that prey on crop pests such as cereal aphids. A cereal aphid app being developed by AAFC will take into account natural enemy populations when recommending control options.

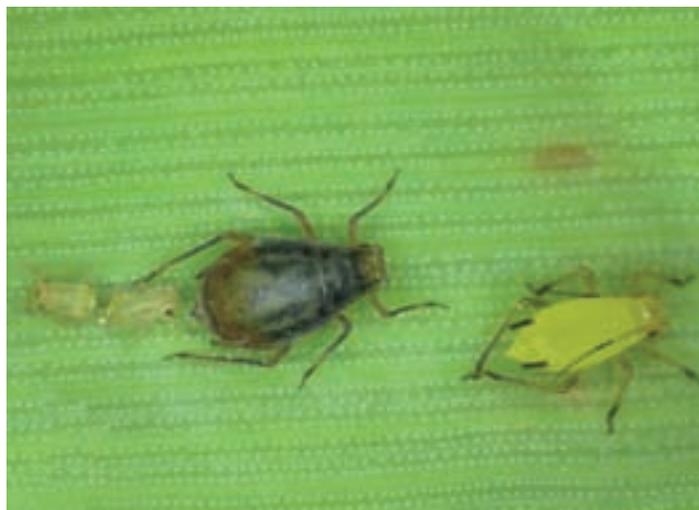


PHOTO: TYLER WIST

Pictured are a birdcherry-oat aphid (with offspring) and an English grain aphid. Both species can cause economic damage to cereal crops.



PHOTO: TYLER WIST

English grain aphids at different life stages. These cereal aphids double their reproductive rate once they start feeding on cereal grain heads.



PHOTO: TYLER WIST

A green lacewing larva chows down on an aphid. AAFC's new cereal aphid app will take into account predatory insects such as green lacewings when calculating economic thresholds.



PHOTO: TYLER WIST

A ladybird larva stalks English grain aphids. AAFC's new cereal aphid app will take into account predatory insects such as ladybirds when calculating economic thresholds.

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New Exhibitors, New Street, New Shuttle Routes



As **Ag in Motion** gains a whirlwind of momentum in its third year, attendees will see another site expansion to accommodate over 50 new exhibitors to the show this year.

This site expansion has created exhibit space for new companies like John Deere, Moody's Equipment - New Holland dealer and Redhead - Case IH dealer. As a result, farmers will have even more selection when looking for the right equipment for their farming operation.

The new street, located on the East end of the show site, also makes room for companies to expand and bring more equipment than in

previous years. Look for returning companies with bigger spaces, like Brant, Full Line, Unverferth Mfg. Co., Co-op and Ag Growth International (AGI).

Ag in Motion continues to grow in size to keep up with its exhibitor and attendee numbers. In 2017, the number of Meridian People Movers will be doubled and new routes will be introduced. Both attendees and exhibitors will be able to hitch a ride to and from the parking lots, as well as throughout the show site.

Plan your trip today. Visit aginmotion.ca for general information, exhibitor list, map and demonstration schedule.

Spotlight on Innovation

Farm equipment and livestock manufacturers, seed and crop protection companies, agribusinesses and more are bringing new technology to **Ag in Motion**. Introduced last year, the **Innovations Program** showcases the best innovations that agriculture has to offer, organized into three categories: Innovations in Equipment Technology, Innovations in Crop or Livestock Technology and Innovation in Agribusiness Service.

In the Innovation in Equipment Technology category, attendees will see improvements to agriculture equipment technology, as well as brand new concepts, to both the mechanics of the machines and the software that helps them do their job.

The Innovation in Crop or Livestock Technology category will showcase the latest

in genetics, non-mechanical improvements to pesticide application and improvements to the process of producing a crop.

Finally, agribusinesses will be recognized for their services provided to the industry in the Innovation in Agribusiness Service category. This category includes important functions like monitoring, marketing, insurance, delivery and other services required to operate a successful business.

All Innovations Program entries are being unveiled to the Canadian agriculture market in 2017 and will be exhibited at the show. The entries will be judged by an expert committee. Plus, farmers will be able to grab a ballot and vote!

Entries will be on display all three days of **Ag in Motion**. The award winner for each category will be announced on Thursday, July 20 at 3:00 pm at the show.



INSECT MANAGEMENT

Scout early for the best cutworm control

Cutworms may be poised to damage the 2017 canola crop. Be on the lookout for them

By Melanie Epp

Last year, higher than normal cutworm feeding was reported in several locations in major canola-growing regions. Cutworms have the potential to do incredible damage in canola crops.

There are five economically significant cutworm species in the Prairies: the pale western, red-backed, army, darksided and dingy cutworm. The first two are the most predominant species. Pale western is of more concern in the southern, open Prairie regions, particularly in Saskatchewan and Alberta. The red-backed cutworm is a bigger issue in the parkland belt and northern parts of the Prairies. Army cutworm is commonly found in Alberta and Saskatchewan, but less in Manitoba.

Scott Meers, insect management specialist for Alberta Agriculture and Forestry, said in 2016 in Alberta, "redback was the pre-

dominant species, and pale western the second most common."

In the region of Innisfail, Alta., where Canola Council of Canada crop agronomist Keith Gabert works, there was significant damage.

"Typically growers' concern and the level of awareness of cutworm issues increase when a neighboring grower decides to re-seed based on cutworm feeding," Gabert said. "This occurred in rare instances, but gets discussed a lot."

Canola was also under pressure from cutworms in Manitoba. While levels were variable and hard to find in some fields, populations were definitely noticeable in others. The highest level of damage appeared in the Northwest, where some canola growers chose to reseed.

SCOUT EARLY AND THOROUGHLY

Cutworms are most harmful when larvae are small and feeding

is regular. Since some species complete the larval stage earlier than others, it is important to know which species you're dealing with. During the first few weeks of crop development, scout every three to four days. If cutworms are detected, scout more often. Look across the fields for bare patches or wilted and collapsed plants. Cutworms prefer lighter, warmer soils, so be sure to check slopes and hills that face the sun.

While there's not way to predict which fields will attract cutworms, Meers said canola crops are the most susceptible, "because one bite and the seedling is dead, compared to other plants that can regrow."

"When scouting cutworms, squeezing them to expose bright green gut contents indicates an actively feeding pest," said Gabert. "A majority of cutworms with brown gut contents would indicate that the cutworms are

not actively feeding and may not be controlled well at that time."

The action threshold for cutworm is at the point of 25 to 30 per cent stand reduction. Before spraying, determine the pest's distribution, as it may be possible to target control.

SPRAY TIPS

Meers says growers should spray when damage to the canola stand takes plant populations below acceptable levels. He can offer no great advice on which stage of canola growth to protect, but he did say that seedlings are far more susceptible than well-established plants.

"I generally recommend evening spraying when possible," he said. Cutworms surface at night to feed above ground. "Redback is an above-ground feeder, while the pale western feeds below ground," said Meers. "This makes pale western harder to control with foliar sprays."

To get good plant coverage, use high volumes of water. Most of the insecticides registered for cutworms in canola work by contact and ingestion. If not hit directly with the spray, cutworms need to ingest the insecticide. The more plant surface area covered, the more likely that cutworms will take in the insecticide.

Since not all cutworms will surface in a single night, it may take several days before full effect of the insecticide is achieved.

"One of the newer control measures would be a seed treatment containing Lumiderm," said Gabert. "The insecticide's active ingredient provides extended control of cutworms that feed on treated seedlings. It's not possible, however, for me to predict which fields might benefit the most from this increased level of protection." GN

Melanie Epp is a freelance farm writer.

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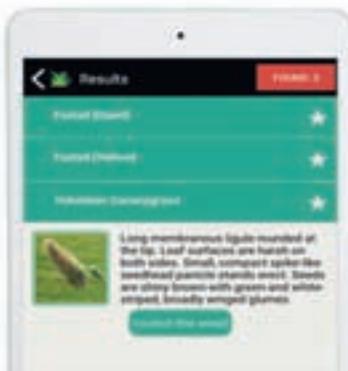
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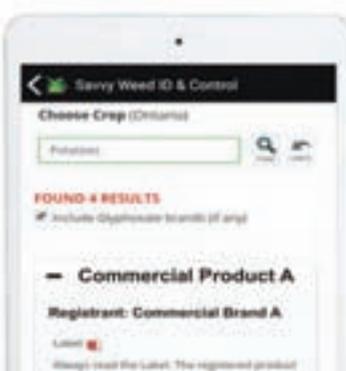
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INSECT MANAGEMENT

Be ready to scout and control flea beetles

Flea beetles move fast and do a lot of damage. Be sure to keep ahead of them in your canola crops

By Melanie Epp

Flea beetles are easily the most chronically damaging insect pest in western Canadian canola. Damage results in yield losses estimated at \$300 million each year. To limit damage, experts recommend acting early when an average level of defoliation level of 25 per cent or more is reached.

EARLY ACTION NECESSARY

According to Greg Sekulic, an agronomy specialist in the Peace region of Alberta, flea beetles are most damaging at emergence during the true leaf and cotyledon stage. For this reason, the first line of defense in protection against the destructive pest is a seed treatment, said Sekulic in a recent interview. Growers can recover without any negative impact on maturity or yield when 50 per cent of the cotyledon leaf area remains. But because flea beetles move

quickly, the recommended economic threshold is 25 per cent damage.

Sekulic recommends that growers regularly scout emerging canola fields. There are a few guides on the Canola Council of Canada's website that show growers what crop damage looks like at different stages. They should help determine the right time for a foliar insecticide application. "Anything registered is good to go," said Sekulic. "Just make sure you stay on labeled rates."

Over the past 30 years, the crop protection industry has spent an incredible amount of time and money trying to build forecasting models for flea beetle pressure, all of which have failed to predict specific regions, let alone individual fields that would be at risk. "Due to the variable nature their ecology, it's really difficult to predict with any certainty where they're going to be in higher numbers in spring," said Sekulic.

Sekulic says that he used to

advise growers to scout in the fall and plan spring management based on what they saw. "Now we don't anymore," he said. "We basically just advise that if you grow canola, an insecticidal seed treatment is far and away the safest means of protecting against flea beetle simply because we cannot predict where they're going to emerge at all."

NATURAL PREDATORS

With the understanding that the use of insecticides increases production costs, environmental risk, and the potential for increased selection pressure for insecticide-resistant flea beetles, researchers are looking to possible new management strategies. The hope is that a better understanding of effective predators in major Canadian canola growing regions may allow natural enemies to be included in the economic threshold recommendation. This could, in turn, reduce the incidence of over-spraying and the possibility of increased selection pressure.

As part of a project funded by Agriculture and Agri-Food Canada, Alejandro Costamagna, assistant professor in the Department of Entomology at the University of Manitoba, and a team of researchers have been looking into the natural enemies of flea beetles. They've developed DNA primers that are able to detect flea beetle DNA in their predators' guts. The problem is that, since they're very mobile, flea beetles are difficult to catch for both humans and predators. The researchers are in the process of testing the insects and will continue to process insects from the fields next year. Predators include ground beetles and spiders, some of which they think also feed on larvae and eggs in the soil. Again, this is very difficult for the researchers to monitor.

The other part of their research, said Costamagna, is examining landscape characteristics that could potentially limit flea beetle populations. "The rationale is that if you have non-crop habitats —

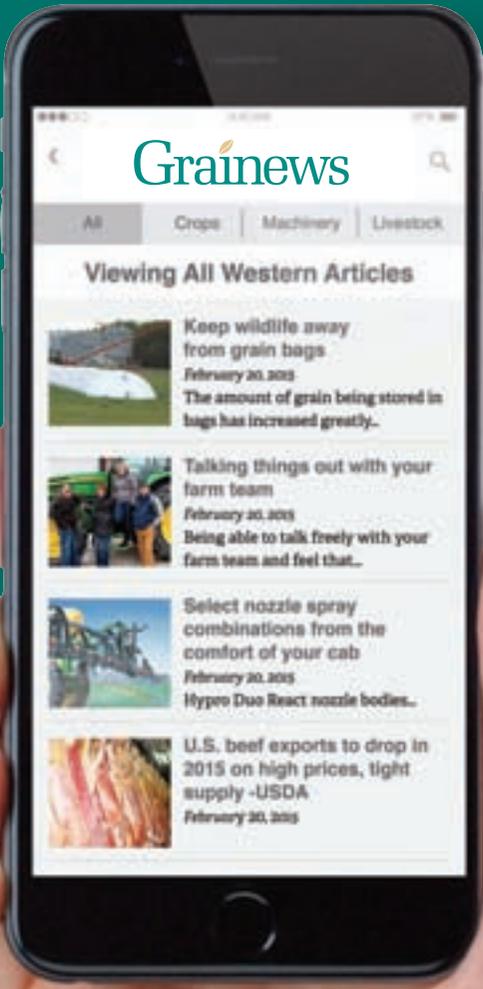
natural habitats — those will harbour good, sustainable populations of natural enemies and those will help to control the flea beetles," said Costamagna.

"For every field we sample, we map the landscape around it," he continued. "We look at crops and habitats up to two to three kilometres around it and then we quantify a lot characteristics in that landscape."

Costamagna said that while they have several fields in four major regions in Manitoba, Saskatchewan and Alberta, there is always a need for more. Producers who want to participate in the research project should contact Costamagna directly at Ale.Costamagna@umanitoba.ca.

Economic threshold trials are also being conducted, but it's too early to report on the results. For now, the best course of action is to stick with the 25 per cent economic action threshold recommendation. **GN**

Melanie Epp is a freelance farm writer.



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FARM MANAGEMENT

Increasing yields with natural landscapes

Researchers say maintaining some natural habitat next to your fields can bring yield increases

By Lisa Guenther

Researchers are looking at how natural landscapes can bump yield in nearby canola fields in Alberta, and they want your yield data.

Previous research, done at various locations around the world, has shown that native habitat bestows yield gains and cuts insecticide applications on neighbouring farmland, says Gregory Sekulic, agronomist with the Canola Council of Canada.

“But we needed to investigate that in Canada.”

The Canola Council is funding research based out of the University of Calgary to do just that. Last year was the first of the four-year study. Researchers identified 140 sites in southern Alberta to examine how landscape affects native bees, says Dr. Jess Vickruck.

Vickruck, a self-described “insect nerd,” recently defended her doctoral thesis and moved with her family from Ontario to Calgary to join the research team. She says she sees the study as a way to find conservation initiatives that benefit both farmers and beneficial insects.

This year researchers are expanding beyond pollinators to look at how



Adult syrphid fly, a pollinator found in fields and gardens. Also called the hoverfly because of the way it hovers around flowers.



A parasitoid wasp. Wasps can be very small and look similar to flies. But wasps have four wings, while flies have two wings.



Larvae emerge from a redbacked cutworm. The larvae are those of a parasitoid wasp called Copidosoma bakeri.



Amara beetles hunt and chew on cutworms at CanoLAB in Vermilion. Amara beetles belong to the Carabid family.

PHOTOS: LISA GUENTHER

landscape affects other beneficial insect populations. For example, they’ll be focusing on predacious ground beetles, along with parasitoids that target cabbage seedpod weevils. Researchers also plan to set up studies that exclude pollinators and other insects, to see how that affects canola pollination.

“It’s a very big project and it has lots of moving pieces. But it’s really exciting,” says Vickruck.

Sekulic says they’re looking for help from farmers located south of Edmonton, or basically anywhere within a three-hour drive of Calgary. The plan is to look at yield data collected at set points from natural areas near those fields. Sekulic says they’ll then build an

algorithm to calculate the spatial relationship between the natural landscape and the yield effect.

“Ideally a few hundred (fields) would be fantastic,” says Sekulic. “But we could probably start to build that algorithm with 50 or 60 fields.”

YIELD BUMPS FOUND

Much of the research on yield and natural habitat is out of Europe, says Vickruck. “And there’s pretty strong evidence to show beneficial insect communities influence yield in a positive way.”

Sekulic says they’ve used a British study as the backbone for this project. That study looked at yield boosts in three-year rotations of field beans, oilseed rape, and wheat.

Cropland was intentionally turned into natural landscape, at rates of zero, four, and eight per cent.

The highest yields came from fields where eight per cent of the land had been converted to natural cover, Sekulic says. “And to the point that at eight per cent ground cover, they were actually making more money on their total acres than they were if they had been farming their total acres.”

Back in 2002 and 2003, researchers studied the effect of natural landscapes on pollinators and canola yield in Alberta’s Peace region. The study, located near La Crete, looked at both non-transgenic and genetically-modified canola varieties.

Canola fields with plenty of bees had higher yields and better seed set. Researchers also concluded that natural land within 750 metres of the crop provided habitat to yield-boosting pollinators.

“We’re trying to refine that and put a value on those acres,” says Sekulic.

The idea is that “instead of losing money on land that’s really marginal, you could use that marginal land as habitat for good bugs that increase your yield across the field,” he adds.

Exactly how the study will play out in southern Alberta remains to be seen. Vickruck notes southern Alberta’s landscape is very different from agricultural areas in Europe. Southern Alberta’s fields tend to be larger and more uniform, and from what Vickruck’s read, there hasn’t been much work done with pollinators in those types of landscapes.

Help from farmers would be “greatly, greatly, greatly appreciated,” says Sekulic.

Sekulic adds that it’s a chance for farmers to participate in leading edge research, “the results of which could actually help them increase their profitability while reducing effort to do so.” **GN**

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

i Producers interested in participating in this research can contact Vickruck by emailing jess.vickruck1@ucalgary.ca. Farmers can also call her office line at (403) 220-3465 or her cell at (905) 359-7531.

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Cost: \$195

Medicine Hat Field Day – July 6

Farming Smarter Cypress County Site
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Cost: \$95

Wheat Stalk – July 20

Farming Smarter Lethbridge Site
9am - 4pm (includes lunch)
Cost: \$95

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11am - 4pm (BBQ)

Cypress Conference – Oct 26

Medicine Hat – venue TBD
9am - 4pm (Includes lunch)
Cost: \$195

Farming Smarter Conference – December 5 & 6

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watch for details on www.farmingsmarter.com

NEWS BITS

Protecting beneficial insects

Folks in crop production tend to focus on the pest insects. But usually most of the insects in a field are beneficial insects, says Dr. Vincent Hervet, pest management specialist with Alberta Agriculture and Forestry.

Parasitoids are just one type of beneficial insect farmers are likely to find in their fields. They are wasps or flies that lay their eggs on or in other insects. Unlike parasites, parasitoid larvae kill their hosts, in a horrific process that has inspired science-fiction writers for decades. Lifespans vary from a couple of weeks to over a year for the longest-lived species.

Adult parasitoids need to feed on nectar until they can lay their eggs. For example, while completing his Ph. D., Hervet studied a parasitoid that would only live a couple of days without food. However, when fed honey, it would live for a month, and parasitize hundreds of cutworms in that time.

Those adult parasitoids can find nectar from flowering crops. “However, many crops either don’t flower — if it is a cereal — or flower for a certain short window. And this actually breaks the life cycle of the parasitoid, if they don’t have a source of nectar before or after the crop flowers.”

“That’s why it’s important to try to keep flowers in the ditches,” says Hervet.

Ditches and hedges are also refuges for beneficial insects when farmers do spray insecticides.

“And so if you spray these hedges and ditches, then you eliminate these beneficials from these areas,” says Hervet. But if left undisturbed, parasitoids, ground beetles, spiders, and assassin bugs in the ditches and hedges will recolonize the field.

Lisa Guenther

HART ATTACKS

What a difference 100 years can make

The crop yields achieved by today's farmers would be a shock for our forefathers

By Lee Hart

As a new growing season begins, I am always impressed with the progress farmers have made in pushing the limits on crop production — striving to be more efficient, using improved agronomic practices and technology to increase yields and hopefully outsmart Mother Nature.

I worked on a story earlier this year that described some global record crop yields: 245 bushel wheat yields in the U.K.; 503 bushel corn in the U.S. Growing conditions in those areas make a difference, but it can be done. As the main contact for that story, agronomist Dan Owen, pointed out the yield potential is there in the seed, the question is how do you unlock it? As farmers head to the fields this spring many will be looking for that "key".

This takes me back to a less frantic pace when I was a kid growing up on an Eastern Ontario dairy farm. My dad probably did things bigger and faster than his father's generation at the turn of the 20th century. After all, my dad had a tractor, hay baler and combine in his modest fleet of farm machinery. Grandpa had horses and knew the business end of a scythe and sickle all too well. Yet there still seemed to be blurring or blending of their farming experience. Today's pace would make them shake their heads.

I don't believe my dad ever knew how many bushels of grain he harvested from a field. His measure of a good crop versus a poorer crop was determined by whether he needed to use the granary in one barn at our home farm or put the overflow in a second granary in grandpa's barn across the field — that was a good year.

Farming mostly from the early 1930s through to the late 70s roughly, he often planted one or two fields of oats. That might have been about 30 acres total and the rest of the farm was in pasture, hay or rough pasture or bush. In my early years he also often grew corn for silage for the dairy cows, but when the old stave silo began to fail that ended the corn business. It's sad... people build things then 100 years later they fall apart — did no one care about quality workmanship?

He seeded crops with a 10- or 12-foot wide disc seeder, with steel clad wooden-spoke wheels and two wooden seed boxes. The smaller box to carry grass seed sat in front of the much larger grain box that held the oat seed. A light chain harrow was attached to the back of the seeder. The field would be finished off with a steel drum roller, to pack the soil and push any rocks into the ground.

That farm always seemed to produce a new crop of rocks. The cropped fields would be plowed, disced and cultivated each year. That also meant spending a few days in the field with a tractor and a stoneboat collecting bigger rocks by hand, throwing them on the stoneboat, dragging the stoneboat

next to a rail fence line and adding a new batch of rocks to the fence row.

The pace of the farm didn't change much in the 20 or so years I was around the homestead, and dad wasn't doing things a whole lot different when he finally retired in the early '80s. I often compare my boyhood memories with today's agriculture like going from a stagecoach to a space shuttle.

When I was a kid, I don't think farmers, on our road anyway, tar-

geted a particular yield. They applied practices they had learned from their fathers, and made it work with what nature supplied. Today, I sometimes think agriculture is trying hard to tell nature what to do. And the fact is that Mother Nature doesn't take orders very well. **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.



PHOTO: SUPPLIED BY LEE HART

This is my grandpa, Ernest Hart, getting a field prepared prior to seeding a crop in late 1920s. I don't think he could have imagined an air seeding system 80 feet wide.

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REPORTER'S NOTEBOOK

Perfecting your pitch for farm reporters

These tips for passing on story ideas to reporters will help get your passions in print



Lisa Guenther

On a fairly regular basis, I receive story ideas from media relations people and readers.

Several factors go into whether or not a story makes it onto the pages of *Grainews*, and they're not all within the control of the person pitching the idea.

But some things are. Here are the ingredients for a solid pitch, and a few things that can spoil the soup.

KNOW THE MAGAZINE

Grainews' motto is: "Practical production tips for the Prairie farmer."

Before sending a story idea or press release, make sure the topic fits that guideline. If it does, send it

to the writer who covers those types of stories, or to the editor who manages that section.

My beat for *Grainews* is crop production and ag science in Western Canada. I don't regularly cover vegetable production, hydroponics, marijuana production (at least not yet), politics, or corporate corruption. I'm much more likely to say yes to story ideas or event invitations that are related to my beat.

If it's related to a story that *Grainews* has covered recently, try to think about how your pitch advances the story (i.e. how is it new or different from the story that's just run).

BE TRANSPARENT AND HONEST

Usually I have an idea where people are coming from when they're making a story pitch. A public relations person is working on behalf of a client. A reader might

want coverage on a problem that affects them somehow, or perhaps on a new product or practice they're promoting. All this is (usually) fine, as long I can figure out what is motivating the person, and take that into account when I'm researching the story and talking to people.

Sometimes someone contacts me who seems to have a chip on their shoulder, but I'm not sure why. If they're evasive about their relationship to the story, I'm wary. I've even had instances where I'm not sure the person contacting me is using their real name.

The last thing any reporter wants is to be manipulated into fighting someone's fight for them, especially if they don't even know who the source is or why they're upset.

Sometimes you'll see news stories where the source's identity is concealed. It's very rare

that we even quote unnamed sources in *Grainews*. And generally the reporter knows (or should know) the source's identity and background. They aren't truly anonymous, at least not to the reporter.

DON'T MAKE IT PERSONAL

Sometimes I receive story pitches from public relations folks that start with: "Good morning, Lisa, I hope you're well, etc., etc." These pitches seem personalized, so I feel obligated to respond.

But when I forward it to Leeann to see if she wants me to cover it, I find out other reporters (and often Leeann herself) have already received it. These kinds of pitches can potentially flood our inboxes. It would save us all time if the communications person would just send it to one person. Often Leeann is the best person, as she'll assign it to a reporter if it's a fit for *Grainews*.

I don't run into this problem with the press releases that have clearly been sent to a large distribution list. Typically I'll scan those subject lines, and if it looks interesting, I'll read the news release. If I want to write a story on it, I'll check with my editor. I appreciate receiving good old-fashioned news releases like that, especially when they're closely related to my beat. Keep sending them my way.

FEEL FREE TO FOLLOW UP

I get a lot of email and my email program has an aggressive automatic email filter, so I miss stuff sometimes. I also sometimes forget to respond. If you're hoping for a definite response, or if you invited me to an event you think I should cover, do follow up. I'll let you know either way. GN

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

GUARDING WEALTH

Signs of future risk in the stock market

U.S. government initiatives are raising returns on government and corporate bonds

By Andrew Allentuck

In the early days of the Clinton administration, Democratic Party strategist James Carville opined that, after death, "I'd like to come back as the bond market. That way, I could intimidate everybody." Bond prices determine bond yields and yields determine the weight of public debt — how fast taxes can pay it down, how affordable bridges and highways will be, and, for that matter, whether pension funds will thrive or die. Dull they may be, but bonds are the financial blood of public finance, pensions, and tax rates.

The 10-year U.S. Treasury bond, the world's bellwether debt instrument, has recently been priced to yield 2.38 per cent, a little down from its recent peak yield of 2.62 per cent on March 13.

Bond yields are about risk and inflation. In the case of the U.S. 10 year T-bond, it's also about risk, for U.S. inflation is a modest 2.3 per cent at annualized rates. For comparison's sake, the 10-year Italian state bond carries a yield of 2.26 per cent and British 10-year sovereign bonds, called "gilts," pay a modest 1.09 per cent with British inflation at 2.6 per cent. The U.S., it seems, is a bigger risk than Italy.

The stock market has been on a tear, up 12 per cent in U.S. dollar terms. Bond investors don't believe it. The bond market is forecasting risk and trouble for the American economy while the stock market is aglow with rhapsodic investors who believe Trump will raise corporate profits. Who is right?

On average, stocks are priced at almost 30 times earnings, according to the Case Shiller Cyclically Adjusted Price Index (CAPE). This is the highest level since the tech bubble at its most optimistic in 2000. Professor Robert Shiller, a Nobel laureate who teaches at Yale, denies that this number implies a crash is at hand. Shiller suggests this means one should cut stock holdings and hold more cash and bonds. Put another way, when your stocks or any other asset is booming, take a little money off the table and diversify.

STOCK MARKET RISKS

A lot of risks could derail stocks. First, there is momentum. The S&P 500 index has not had a serious drop since Trump was elected. Second, there is President Trump's wish for higher tariffs and trade barriers. This could reduce sales and profits for American companies. If the U.S. decides that American auto makers should not buy parts

from China, higher costs of American-made parts for Fords and Jeeps would either raise sales prices, cut sales or reduce bottom line profits. Trump is bad for topline business even if he can deliver tax cuts on the bottom line.

Eventually, Trump's policy of removing regulations to protect the environment will harm American output. Two recent executive orders from the White House — one, that coal mining companies need pay no penalty for dumping coal and waste into rivers and, two, that coal companies can mine on U.S. public lands, are symptoms of more regulatory rollbacks to come. Why does this matter? Because the un-priced or unpenalized use of resources ultimately empties the cookie jar.

The Trump position that environmental regulations should be eliminated is going to be counterproductive. The Paris climate agreements are history from a U.S. point of view. China and India are big polluters but there is doubt that they will back the Paris accords if Washington does not. Visa restrictions for Mexicans may severely limit output in U.S. agriculture, especially in California's fruit and nut belt. What drought has done in five years, Trump may equal in one, critics fear.

Some of this apprehension may be excessive. However, risks are rising. Trump proposes to reduce regulations that force banks to carry more capital to back their loans. That's a return to the wacky lending standards that allowed NINJA loans (No Income, No Job, No Assets) to be liberally dispensed to people with no fixed address and no money. That was the malpractice underlying the mortgage meltdown in 2008 that nearly wrecked global finance. Could 2008 happen again? Not exactly, but pyramids of risk on bank balance sheets with highly leveraged capital are an invitation to another disaster.

Risks are rising in the U.S. stock market. Stocks magnify that risk. Investors tend to trade as a pack when they see stocks zooming up or tumbling down. On the up side, they bet on momentum continuing. When stocks are crumbling, there is a race to get out of the musical chairs. Stock markets that crash with 10 per cent drops in a series of days, or worse as in 2008 or 1987 when there were double digit falls during panic days, can do it again.

THE ALTERNATIVE TO STOCK RISK

On top of high U.S. 10-year Treasury bond interest, corporate investment grade bonds

offer good returns and acceptable risk. For example, Canada's insurance giant, Fairfax Financial Holdings Ltd., has a 4.95 per cent Canadian dollar issue with a BBB investment grade rating that yields 3.65 per cent per year to maturity on March 3, 2025. That is 2.19 per cent more than an eight-year Government of Canada bond, which pays 1.46 per cent per year to maturity and about the same yield as one could get from a public utility stock. To be sure, there are tax differences. In non-registered accounts, stocks dividends are puffed up for calculation purposes. That process increases taxable income and so can cause Old Age Security benefits to be reduced or lost.

Bond interest is not grossed up and thus does not have any magnified effect on OAS. An investor can cherry pick corporate bonds with investment grade ratings and, if Trump does no greater harm than the market expects, U.S. government and corporate bonds purchases will wind up diversifying your risks and provide a tidy return competitive with stocks dividends but with far more security. GN

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

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Toban Dyck
tobandyck@gmail.com

I got some grease on me the other day. Heck. It looked as if I had bathed in the stuff. And, you know what? It felt great. I even got a few scrapes. The kind of scrapes you only notice later, after the work, when you're sitting down with a good book or while watching the game.

I still marvel at this lifestyle. The physical work of farming is a breath of fresh air and, right now, still early in the season, it's a ton of fun. The temperature is heating up, and the bugs haven't yet begun their quest to bite and/or annoy us.

The intensity of the seeding season has yet to hit my farm. We're getting ready, but not with haste. It's a slow and steady gear-up. It's been a nice pace, and I needed it to be given the full-time nature of my other work with Manitoba Pulse & Soybean Growers, which, as you may guess, is only getting busier and busier.

But, before the pistol fires and it's all hands on deck for this growing season, humour me for a paragraph or two. This is not a column expressly about carbon tax. Nor is it one on public trust. It's also not going to be one that argues to a point or conclusion.

THE DISCONNECT

Farm settlement history in Canada is not uninteresting. The Dominion Lands Act sought to divert people from moving to urban areas by offering quarter sections of land for a dollar. Rural Canada began taking shape, new farmers, themselves immigrants, accepting help from the indigenous population, who knew well how to grow food in this country's harsh climates.

You and I began farming here. Meanwhile the cities grew. Rural areas, largely cut off from density and the flow of information people living in the cities had access to, grew and developed on their own.

Fast forward 100-plus years and we're shocked at how people living in the city know very little about what is really happening on Canada's farms. But we shouldn't be.

Access to the amount of information we currently have available is a relatively new phenomenon. And the window it has created between agriculture and the rest of the world is an important beginning to a good relationship. But, right now, it's just a peephole and that, at times, is trickier to navigate than a brick wall.

We talk about public trust. But do we really mean, simply, bringing the public up to speed about what's been happening in the farming world over the past few decades? Which, in the big picture, is still recent history.

When these debates come up, it's never about how we as farmers can spin the public a yarn about the kinds of chemicals we use or what we're really doing to the land. No. The result of those discussions is

always how can we better let the public know the actual, real-life practices taking place on our farms.

THE INFORMATION

Someone living in Winnipeg may have never seen a combine. I know some of these people. I have shown some of them my farm, and it has blown them away. They had no idea about the scope of things out here. And they had no idea the kinds of decisions a farmer has to make.

But then, it's equally fascinating that many people living in the country have never driven down-town.

If I am to speak bluntly, the subtext of public trust is that we as farmers have done something untrustworthy to a friend that isn't around very often. And now agriculture is spending lots of energy and resources on mending that relationship, hoping the public will give it more attention.

As farmers are forced to react to policy coming down the national or provincial pipe, this disconnect is important to consider. We hope those in positions of power have a sense of what is happening on farms, but that isn't necessarily the case.

Peering through a peephole isn't enough. How a farm operates should be more widely known. And general agronomy should be, as well.

The window between the farms and the rest of the world will grow,

and as it does, hopefully public support for the things we do will grow, as well. In a perfect world, the reasons my ancestors paid a buck to live in the country would no longer represent a prejudice against city folk. And, in that same world, the public would know what we're up to and trust us to grow their food. **GN**

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



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UNDERSTANDING MARKET BULLS AND BEARS

Riding on the U.S. dollar rollercoaster

Swings in the price we pay for the U.S. dollar will impact profitability on your farm



Brian Wittal

bfwittal@procommarketingltd.com

Since the Board Room Bully took over in Washington in November, promising to revitalize the U.S. economy and provide more jobs and opportunities for Americans, we have seen a change in attitudes in the markets.

Just after the election, we saw

the U.S. dollar index jump to historic levels, based on hopes that Trump's plans for economic prosperity would become reality. Shortly after, the U.S. dollar index hit a high of 103.750 on January 3, 2017, it began to fall. Those in the Oval Office looked like they didn't know what they were doing and the economic plan to Make America Great Again looked more like a runaway train headed for a wreck. For the past six months, the U.S.

dollar has been on a roller coaster ride of up \$0.0425, down \$0.04, up \$0.03, down \$0.04.

A volatile fluctuating currency creates a difficult situation for manufacturers. Their costs fluctuate continually, which means their product selling price also changes. In a world trade environment, this can put manufacturers in a very uncompetitive situation. A volatile dollar also impacts the world grain trade. The U.S. is one of the world's

major grain exporters. When the U.S. dollar is high, U.S. grain selling prices drop to compete against sellers in grain-growing countries whose currencies are lower against the U.S. dollar.

This price drop only has a real direct effect on one segment in the supply chain: the primary producer.

Grain companies bid on sales based on current world market prices. Once a sale is made, they'll adjust bid prices to reflect currency

values and manage currency fluctuation.

Primary producers are left with all of the currency volatility risk. The farmer's choice is to whether or not to sell at the offered price. When selling grain is the only way to generate revenue, there is little choice.

HEDGING THE RISK

The U.S. futures markets allow American farmers to hedge their grains and their currency risk. Some farmers use these marketing tools to help manage their risk and lock in profitability, but these contracts are not cheap and many producers either do not know how to use futures contracts or can't afford the costs of putting contracts in place.

Canadian grain producers have been fortunate. When the U.S. dollar is high the Canadian dollar is low and that certainly helps to keep Canadian grains price competitive in the world market, allowing us to sell our grains at market prices with transactions done in U.S. dollars. Taking the currency change into consideration, returns to Canadian producers have been most often profitable for most farms over the past few years.

The bad news, of course, is that Canadian farmers buying machinery or inputs produced outside of Canada pay an extra 30 per cent with a lower dollar. This gets expensive and reduces farm profitability.

In a volatile currency market, some of the volatility leaks over into other markets such as grains; futures markets can get very bouncy. Producers who watch markets or want to reduce their risk and lock in profitable prices have limited options. They either do pre-pricing contracts or options or futures contracts (only on canola, in Canada.)

If you want to buy options or futures contracts for wheat you have to use U.S. futures markets. With currency markets as volatile as they have been for the past months, you would face a real risk of currency changes severely impacting your futures trade. You also need to consider doing a currency hedge to protect your grain hedge position, but this is not cheap.

Many producers likely don't understand hedging well enough to feel comfortable doing a grain and currency hedge strategy. This means they are left gambling on pricing grain at the elevator.

The bigger risk is that if the Canadian dollar was to rise dramatically, net returns on Canadian farmers' wheat sales could fall dramatically. You would have no way to limit the damage this could do to your farm's bottom line if you don't properly hedge all aspects that could impact your net returns. **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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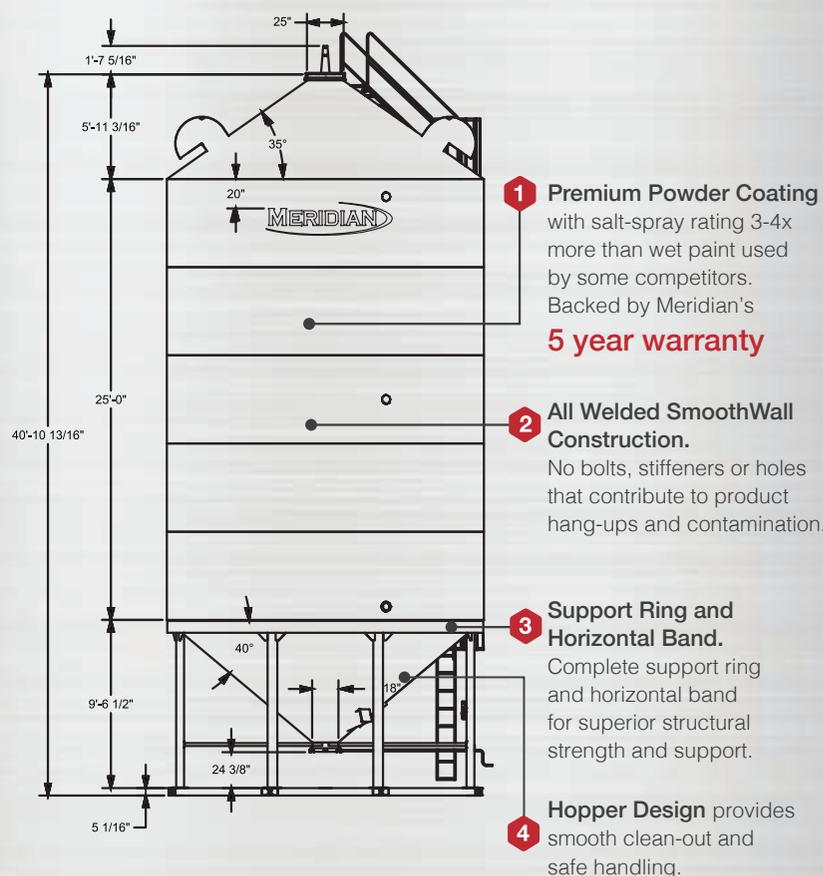
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4

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SOILS AND CROPS

Getting to the root of the matter

In the third of a three-part series, Les Henry looks at roots of field and garden crops



Les Henry

This is the final of a three-part series. In part 1 (April 11, 2017) I talked about the folks that provided very detailed diagrams of many plant roots to the depth needed to get the complete picture. Part 2 (April 25, 2017) was perennial pasture and hay crops and weeds and part 3 is field and garden crops.

WHEAT

Wheat was the crop that built our farming base and is still an important crop. Many still think that wheat roots end at a foot or two. Not so — more like five feet. (See Figure 1.)

Weaver went on to explain that the root system at harvest showed no great change from that at flowering. In my many years of soil probing, I've found that a wheat crop is done extracting soil water by late July when flowering is complete. From then on it is a matter of redistributing what is in the plant to the seed in the head. Many times we hear about a late rain being good for "crop filling" but late in the season, wheat's water use is from depth, not the soil surface.

Winter wheat was found to have a well-developed root system to a depth of 3.5 feet when 55 days old so it goes in to winter all set to "suck from the deep" when spring growth starts.

BARLEY

At the University of Saskatchewan, Pavlychenko compared wild oats to barley (Figure 2) and wheat. He made detailed mea-

surements of root type and length at five, 22, 40 and 80 days after emergence in the field. At 22 days, when they are duking it out for water and nutrients, barley had 3.7 times and wheat 1.6 times the seminal (primary) root length of wild oats.

That is why barley can manage to come through with a crop with wild oat competition but wheat not so much. With current cropping and herbicide availability, wild oats have been all but eliminated on many farm fields but vigilance is needed to keep them at bay.

CANOLA, LENTILS, PEAS

Much of the income from many farms comes from canola, lentils and peas but no root diagrams yet exist for those crops. With modern backhoes, trackhoes etc., it would be much easier to do the excavation now than it was decades ago but it has not been done. It should be.

The Agriculture and Agri-Food Canada Swift Current station has recently conducted field experiments comparing root habits of wheat to oilseed (canola, mustard, flax) and pulse crops (pea, lentil, chickpea). The crops were planted in cylinders with diameter of 15 cm, one metre in length. The cylinders were removed at four plant growth stages from seedling to maturity.

All pulse crops had much less density (mat) of roots than wheat but pulse root diameter was larger. Canola matched wheat for density with mustard less and flax much less. Root diameter of wheat and oilseeds was similar.

The restricted nature of the cylinders does not allow for a full

evaluation of what the plants will do in a field crop situation.

VEGETABLE CROPS

The document for information on these crops is: Weaver, J. E and Bruner, W. E. 1927. *Root development of vegetable crops*. McGraw Hill Book Co. All information here comes from that source.

I have a 15-year old plantation of 1,000 crowns of Jersey Knight hybrid asparagus that is just now in its prime so I have a special interest in this crop. It's rooted deep, and the horizontal roots of at least eight feet are the reason for the longevity.

Weaver's book also shows a diagram to let us know that our good old friend rhubarb has rooting habits much like asparagus. No wonder farmyards that disappeared many years ago show a few rhubarb sprigs as the last evidence of habitation. The farm I was raised on was bulldozed in mid 1970s and sprigs of rhubarb were still there in 2008 when we erected the cairn. Imagine all those years of summerfallow and all those herbicides — and it still motored on because of the huge and deep root system.

It was a great surprise to me to find that tomatoes root to at least four feet in just two months. Carrots by harvest root to seven feet, beets to 10 feet and good old horseradish to 14 feet. The biggest surprise was the width to which the roots extend. A total width of six to eight feet is not uncommon.

In my farm garden I use at least six feet between rows mainly to facilitate passage between rows with the rototiller. No wonder such good



PHOTO: KATHY KUTSCHERA

In my asparagus patch, September, 2012. Planting date was May 2002.

crops grow with so little water. I had no idea that roots could spread that wide. It also means that I should keep inter row cultivation depth to a minimum.

SUMMARY

To summarize what we have found out about roots:

1. Plant roots in general extend to much greater depths than generally believed. For the annual crops we grow, four to five feet is common and for perennial crops like alfalfa, grasses, vegetable crops and weeds, 10 feet or greater is common.

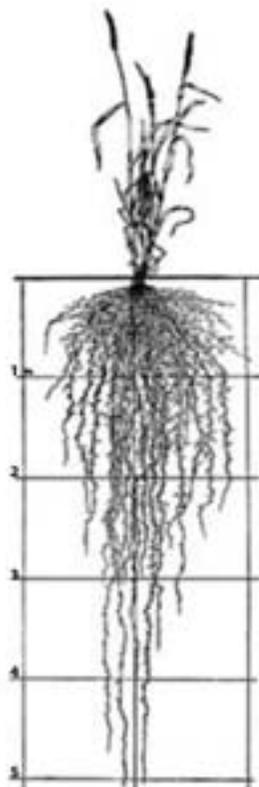
2. Many crop plants extend roots laterally to several feet. That means that row spacing is more a matter of weed control than access by the crop to moisture and nutrients.

3. Rooting potential is determined by the genetics of the plant but environmental controls modify rooting greatly.

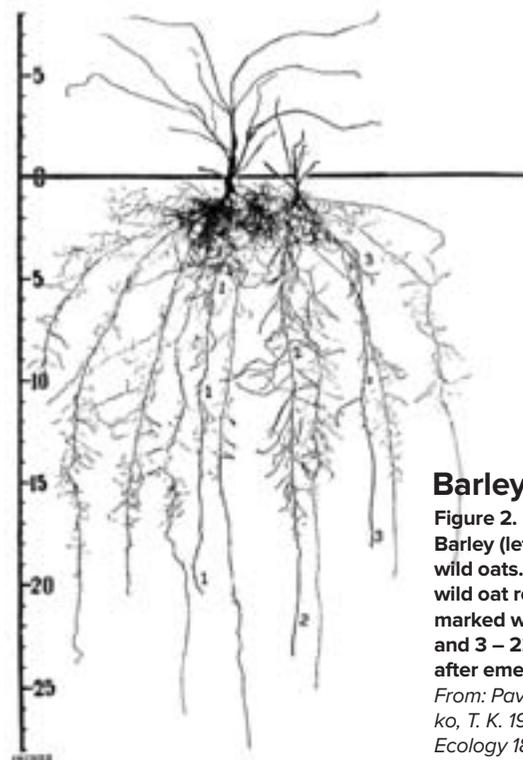
Moisture is the big one. Plants do not root through dry soil so if we have only a foot of moist soil that is the potential rooting depth until rain or irrigation happens.

4. As research on crop roots gears up, it must start with a thorough review of the literature and an understanding of root architecture and responses to environmental variables. More than greenhouse studies of roots in cages will be needed to enhance future field crop production. GN

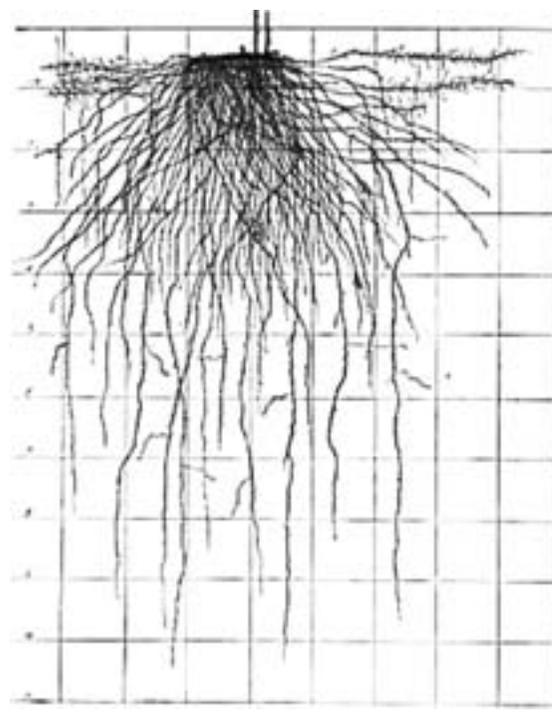
J.L. (Les) Henry is a former professor and extension specialist at the University of Saskatchewan. He farms at Dundurn, Sask. His book, "Henry's Handbook of Soil and Water," mixes the basics and practical aspects of soil, fertilizer and farming. To order a signed copy, send a cheque for \$50 (includes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



Wheat
Figure 1.
Wheat at flowering with roots to five feet.
From: Weaver & Bruner.



Barley
Figure 2.
Barley (left) and wild oats. The wild oat roots are marked with 1, 2 and 3 — 22 days after emergence.
From: Pavlychenko, T. K. 1937. *Ecology* 18: 62-79.



Asparagus
Figure 3.
Six-year old asparagus (not all roots shown). Depth is 11 feet; horizontal spread is more than eight feet.
From: Weaver & Bruner.

ON-FARM REC

New rifles from Winchester

More XPR bolt-action hunting rifles available for 2017

By Scott Garvey

U.S.-based Winchester Repeating Arms is giving hunters more rifle options to choose from this year, adding a couple of new models to its XPR line.

The XPR Hunter Mountain Country Range model gets a polymer stock decked out in the new Mossy Oak Mountain Country Range camo colours. It's available in several popular calibres from .243 to .338 magnum. Depending on the calibre, barrel lengths range from 22 to 26 inches. Average overall weight is 6¾ to 7¼ pounds, and suggested retail for these rifles is US\$599.99.

The new XPR Hunter Compact model also joins the line for 2017. This rifle offers a shorter, 13-inch length of pull that makes them ideal for younger shooters or



The XPR Compact rifles are available with regular or camouflage stocks.

The XPR Hunter Mountain Country Range models are available in calibres from .243 to .338 magnum.

PHOTOS: WINCHESTER

those with smaller stature. Average weight is 6½ to 6¾ pounds, and the barrel lengths are 20 inches or 22 inches. The XPR Hunter Compact will be offered in popular short-action calibres from .243 to .325 WSM short magnum calibres, and it'll be available in standard wood-look

stock or Mossy Oak Break-Up Country versions.

Suggested retail is US\$549.99 for the regular model and US\$589.99 for the Mossy Oak version.

Among the features Winchester has built into all new XPRs are its M.O.A. trigger system (which offers an enhanced trigger feel), Perma-

Cote matte blued metal surfaces to minimize glare, detachable box magazine, steel recoil lug, two position thumb safety and Inflex Technology recoil pad. **GN**

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

"Safe" storage



PHOTO: BROWNING

A new, wide-bodied gun safe from Browning can hold up to 65 long guns.

Canadian federal law requires that all guns be securely stored away when not in use, and what better way is there to do that and really protect them than put them in a specially designed safe?

Browning's Hell's Canyon extra wide gun safe is built for exactly that purpose. It features an 11-gauge steel body with "Pry-Stop End," 1¼-inch diameter chromed locking bolts on three sides of the door to help prevent break-ins. The safe also has "ThermaBlock" fire insulation, which provides 1,680 F, 90-minute fire protection.

Buyers can choose either a new automotive-grade gloss black or textured charcoal finish. To help avoid scratches and damage, the safe has a beige fabric interior, "Quick Access Barrel Rack and Scope Saver" with adjustable shelving and Pistol rack. Owners can squeeze up to a whopping 65 long guns (depending on gun sizes) into it, so this safe offers more than enough storage space for the average gun owner.

It's 60 inches tall, 56 inches wide and 25 inches deep, and with a weight of 1,055 pounds, no one is going to carry it away.

Suggested retail prices range from US\$3,249 to \$3,689, depending on options and finishes. For more visit www.browning.com.

Scott Garvey

ON-FARM REC

Bright light from High Noon

By Scott Garvey

Browning, the company many people probably more closely associate with firearms, has added six new LED multi-function lights to its flashlight and spotlight product line for 2017. Included in that group is the new High Noon USB rechargeable model, which offers brightness levels from 50 to 915 Lumens. That gives it an effective distance of 125 to 550 yards (114 to 503 metres), depending on the mode.

The High Noon Spotlight floats, and it's waterproof at a depth of three feet for up to 30 minutes. It uses a rechargeable Lithium-ion battery that is rated for 500 charging cycles.

To add to its versatility, the High Noon spotlight includes a USB charging port, which allows it to be used as a power source for charging other electronic devices like smartphones. It has a tough polycarbonate housing with rubberized "soft touch" finish and flexible rubber lens ring. A built-in, adjustable stand allows for hands free use, which could be really handy for in-field equipment repair jobs. Despite having all those features, it weighs in at just 14.5 ounces.

Suggested retail price is US\$109.99. **GN**

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



PHOTO: BROWNING



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SPECIALTY EQUIPMENT

On-farm seed treatment systems

Farm- and commercial-scale treatment systems on display at Saskatoon show

By Lisa Guenther

When should farmers consider buying their own seed treaters? It's a question growers were likely pondering during Bayer's SeedGrowth Solutions Expo in Saskatoon in late March.

Brian Ellis, a pedigreed seed grower from Olds, Alberta, said farmers who buy certified seed each year can likely get treated seed from a seed grower. But those who are cleaning and using some of their own seed might want to have their own seed-treating systems. In those cases, a 1,000 acre farm can probably justify spending \$5,000 on a good quality seed treater, he added.

Ellis also runs Graham Seeding Treating Systems, a company originally started by his neighbour about 18 years ago. It offers a range of

equipment suited to different-sized operations. Ellis had a display set up at the Saskatoon show.

"We have packages for very small growers, hobby farmers. Entry-level type treaters for guys that are making the step up from drippers to a better treating system, all the way up to our 40 to 50 bushel a minute treaters," Ellis said.

Packages start at about \$1,000. Those entry-level packages are "definitely a step in the right direction," he added, and they can be upgraded later on. The company's G40 package will treat 40 bushels of wheat and 50 bushels of barley per minute. It sells in the \$8,000 range.

G40 packages include a transfer auger, with a seed flow control kit to regulate grain flow to the treater. Farmers can also mount the applicator to the bottom of the hopper bin. The G40 package allows for a

single product application at a time, Ellis said, although farmers can also tank-mix micronutrients with the seed treatment.

"If they prefer to keep those products separate, we do have a double-chute addition, so we can apply two products sequentially through two separate nozzles," he added.

MORE SEED TREATERS FOR THE AVERAGE FARM

Ellis wasn't the only one with an on-farm seed treatment system on display at the Expo. Chris Larsen, who handles seed treater sales for Ag Growth International (AGI), also had seed treatment systems on-site.

AGI's 1041 Storm is aimed at the typical farmer who's treating seed on-farm and uses an auger-style seed treatment system.

"What's unique about Storm is

our ability to meter directly from a bin," said Larsen. "We fit seed-treating into an all-in-one process. We accurately metre through volumetric conveyance."

Proprietary software makes seed treatment "very easy for the user. It takes what used to be a very dirty and messy job — an undesirable job — and turns it into an easy job."

The 1041 Storm will treat 1800 pounds of grain an hour, or about 30 bushels a minute. And farmers can apply two products simultaneously.

Larsen added that the system uses volumetric conveyance, which relies on the density of the seed. "We built mathematical curves based on wheat, barley, oats, peas, lentils, and flax." By entering a density into the electronics, AGI guarantees the 1041 Storm will deliver within three per cent. "So you ask the machine to treat 50,000

pounds, it treats 50,000 pounds and shuts off."

Can-Seed Equipment's Jason MacNevin was also on-hand to show USC's LPH800 seed treater. The drum seed treatment system can treat roughly 750 bushels per hour, and it's meant for an average farm. The price point is comparable to an auger-style seed treater, he said.

Features include a manual control panel that allows farmers to dial in the chemical rate. It also has an atomizer chamber. "The seed will flow in, in a cone, and spread out. And 99 per cent of the seed will get treated in the atomizer chamber," he said. Farmers can apply up to four products at once. **GN**

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



Can-Seed featured the USC LPV seed treater at Bayer's SeedGrowth Solutions Expo. The mobile seed treater comes with an auto-tilting drum to ease clean out.



A prototype of the Graham Seed Treatment G40 system on display at the Bayer SeedGrowth Solutions Expo.



Show visitors check out AGI's new Storm at the Bayer SeedGrowth Solutions Expo in Saskatoon in March.

NEWS BITS

Seed treatment equipment for large operations

By Lisa Guenther

Company representatives showing their farm-scale seed treatment equipment during Bayer's SeedGrowth Solutions Expo in Saskatoon this spring also had information and treatment systems on display for operations treating larger volumes.

AGI launched its Storm Pro, a new commercial applicator, in 2017.

"It's fast. It's designed to go from bin to bin, yard to yard, quickly, efficiently. Treat as fast as you can and move on to your next customer," said AGI's Chris Larsen. It can treat 45 bushels per minute.

The Storm Pro is highway-towable and powered by a 34 horsepower power Perkins diesel engine. The mixer and conveyor are hydraulically driven. Users operate the system with a touch-screen control, or through a smart phone or tablet.

Can-Seed Equipment's Jason

MacNevin was showing a new portable seed treater, which was suited to a commercial facility. The LPV will treat roughly 2,000 bushels per hour, he said. The USC brand has offered mobile commercial seed treaters in the past, but this new model gets some changes.

"The previous models had the conveyor coming out the back, which always caused some challenges when loading trucks, if you're pulling up against a bin row." The new model has a new conveyor system that swings out the front, making it easier to pull a Super B alongside it.

It also comes with an auto-tilting drum to hold the seed in for a few extra seconds. "As the run starts taking off, it'll level off," he said.

When the run is close to finished, the drum will decline, to make clean up easier. The new model also includes clean-outs at the bottom of all the conveyors, to avoid contaminating the next run.

Darryn Thiessen of FarmChem

said KSI's Portable Seed Applicator is geared toward seed retailers and custom seed treaters. The unit comes with two 60-gallon seed treatment tanks. Surge hoppers feed seed into the KSI applicator. Thiessen said they've put together systems with eight chemical tanks, but the equipment design can accommodate up to 15.

The portable seed applicator can treat as much as 2,500 pounds of pulses or soybeans per minute, or 2,200 pounds of cereal seed per minute.

Graham Seeding Treating Systems of Olds, Alberta, also offers systems for larger operations, including some municipal seed plants in Alberta.

Company rep. Brian Ellis said they can pigeon hole applicators from the firm's G40 or G3 systems into just about any large-scale situation, then marry up the handling equipment to get the seed to the treater. Some plants have doubled up the G40s, so they can treat 90 to 100 bushels per minute.



AGI's new Storm Pro is highway-towable and complies with Agricultural Warehousing Standards Association guidelines.

ON-FARM REC

A little UTV bling

Can-Am offers custom accessories for its Defender UTV line

By Scott Garvey

Most new vehicles roll off assembly lines with some pretty great styling, but the aftermarket industry always seems to come up with accessories that make it possible to ramp up the cool factor. That not only applies to adding bling to the farm pickup, but the UTV that gets used for farm chores and hunting as well.

This year BRP's Can-Am brand announced it has teamed up with Arizona-based DragonFire, a component manufacturer, to offer a line of accessories that not only improve the looks of a machine but its safety and durability as well.

The joint venture has resulted in the release of seven products that can be bolted on to Can-Am's Defender models in an afternoon by anyone with a wrench. They come powder coated in black or "Squadron Green."

On that list of accessories are new, heavy-duty front and rear steel bumpers. They come ready to accept a 10-inch LED light bar or four-inch round LED lights. The rear has a step built into it to make getting in and out of the rear bed much easier.

There is also a new exo-frame protective structure that mates with those bumpers. It provides front and corner protection to the body and lights. That would be pretty useful in preventing scratches and dents from trees when trying to flush those reluctant cows out of the bush and keep them following the herd.

Add the bolt-on side runners that can prevent accidental body damage from rocks or terrain hazards and any Defender starts to get pretty resistant to abuse. There is also the rear bed roll bar that provides additional protection to the cab from rear cargo, which just notches up the rugged factor a little bit higher.

And for those days when you need to pack up a Defender to head out to a field and thin down a gopher population or go hunting during the fall deer season, Can-Am is also making Kolpin Stronghold Gear Rail systems to hold gun cases a bolt-on feature.

Stronghold Gun Boots can hold rifles up to 52 inches long with scopes, and best of all they can keep them secure from unwanted attention from young children or thieves.

These products are now available through Can-Am dealers. **GN**

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



DragonFire-brand protective roll bars, bumpers and rock sliders are now available for the Can-Am Defender models.



DragonFire accessories are available in black or "Squadron Green."

PHOTOS: CAN-AM

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ON-FARM REC



PHOTO: CAMSO

Rubber track manufacturer Camso has been supplying rubber belt tracks to the ag industry for years. Now, they are supplying track systems for recreational off-road vehicles too.

Turning to tracks

ATV and UTV track conversions add new abilities

By Scott Garvey

A few days ago I spoke to my neighbour who told me he just bought a track conversion for his ATV. "I can go where the snowmobiles were getting stuck," he said proudly. A couple of days later I saw some of his tracks across snow-covered terrain that no wheeled ATV could ever get through.

If my neighbour's experience is

typical, the cost of track conversions may be well worth it for anyone who wants to get much better winter performance out of an ATV. Ranchers and farmers who bale-graze cattle in winter pastures certainly come to mind as those who could use an ATV with the ability to get through deep snow. And unlike snowmobiles that can only function in good snow conditions, a tracked ATV or UTV can operate all year

round, with or without the track conversions.

Camso, formerly known as Camoplast Solideal, is offering bolt-on rubber track systems for a wide range of both ATVs and UTVs.

The company claims their ATV T4S track system will fit "99 per cent" of the ATV models currently on the market. And the ATV T4S can be used in all weather conditions, making it a true year-round option that can be left on machines all the time. But owners can easily swap their machines back to wheels with minimal effort whenever they want.

The track system is designed for machines that have a 300cc engine or larger, which is just about every serious machine on the market these days.

Last July Camso also introduced its UTV 4S1 track system for side-by-side UTVs.

The 4S1 uses a new mid-roller suspension system that minimizes vibration, and it uses a lightweight steel frame that adds strength but helps self-clean snow, mud and debris easily. It also provides for even weight distribution. The new system uses a sturdier tensioner adjustment design and it, too, allows for quick changes between tracks and wheels. **GN**

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

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A new track system from Can-Am



PHOTO: CAN-AM

New from Can-Am Accessories is the Apache Backcountry Track System, which is available from Can-Am dealers.

This year Can-Am introduced its all-new Apache Backcountry Track System for the brand's ATVs. According to the company, the new Apache 360 Track System delivers the highest ground clearance, most floatation and best deep-snow performance of any track kit now available.

The two-inch lugs on the 13.5-inch front track and 14-inch rear track supply the traction. The track system requires the installation of an Apache 360 Backcountry Mounting Kit, which is sold separately and is for winter use only.

What does it cost? The Apache Backcountry Track System has an MSRP of US\$5,349.99. The Apache Backcountry Mounting Kit costs US\$649.99.

Scott Garvey

ON-FARM REC

Ford offers optional switch packages

Adding electrical accessories to Raptor and Super Duty trucks gets easier



Ford Raptor and Super Duty trucks can be ordered with a factory-installed set of auxiliary switches for aftermarket accessories.

PHOTO: SCOTT GARVEY

By Scott Garvey

Want to install an additional driving light on your new truck, or maybe a bunch of them? How about an electric winch?

If you like to boost a truck's abilities by adding electrical aftermarket accessories, then Ford's Upfitter switch package is something you may want to consider adding to the options list if a new Raptor or Super Duty truck is in your future. The Upfitter switch group adds \$150 to the window sticker total, but it may be well worth price.

The option puts six auxiliary switches into the roof console, which allows an owner to more easily add aftermarket electrical accessories. New components can then be wired directly to the switches. So there is not need to worry about cutting up a new dash to find a place to install additional switches. **GN**

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

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— Volvo Trucks website



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FORAGE MANAGEMENT

Simple tool improves hay moisture test

With a compacted sample and an electronic tester, a more accurate moisture reading can be made in the field

By Michael Thomas

Packaging quality alfalfa hay can be a challenge. The hay industry is constantly pursuing new technologies to help the hay producer grow and package consistently high-quality forage. Machinery design has advanced in order to handle the hay as delicately as possible to minimize leaf loss. But, even with these advances, the proper moisture level is still the most effective means of ensuring leaf retention.

Today producers have hand-held moisture testers, many large balers have high-quality onboard moisture-testing equipment, and more producers are applying preservative to hay to stretch the moisture window in order to maximize leaf retention and maintain storage quality. Despite all of these tools at our disposal, a producer is still faced with the dilemma of determining the stem moisture of the hay in the windrow across the entire field.

Too dry and you lose quality to leaf shatter, too wet and you cannot compensate with enough preservative, or it becomes cost-prohibitive to apply enough to offset damage or fire.

The more producers know about determining the average moisture in the windrow, the better prepared they are to decide whether to bale. The age-old method of twisting a handful of alfalfa until it breaks is a good way to know the hay is dry enough to bale, but unfortunately by the time the hay is dry enough to break by this method it is too dry for good leaf retention without a heavy dew.

ELECTRONIC PROBES HAVE LIMITS

Another method is to insert an electronic moisture probe into a handful of alfalfa from the underside of sample windrows to get an idea of the mois-

ture. While this is a step up from the twist test, the probe will tend to provide data suggesting the hay is drier than it actually may be.

Electronic moisture probes function by passing an electric current through two brass contacts on the shaft and analyzing the conductivity. This conductivity is affected by the density of the material the current is passed through. A loose handful of hay that tests 14 per cent may actually be more than 30 per cent moisture when tested under the density conditions of the bale.

The relationship between bale size, moisture content and density is very important. Small 16- by 18-inch bales can safely contain 18 to 20 per cent moisture, half-ton bales 14 to 16 per cent, and one-ton bales should not exceed 12 to 14 per cent moisture.

Undesirable reactions start when moisture and density increase beyond these levels. White mould decreases palatability and may also cause livestock to abort or deliver underdeveloped fetuses. Browning decreases palatability and increases acid detergent fibre (ADF) and acid detergent protein (ADP) to unacceptable levels. This high moisture and density accelerate microbial growth. The microbes consume sugars and starches, leaving behind the structural carbohydrates, cellulose, and lignin which make up ADF. The heat generated by this process also damages some protein, reported as ADP, causing it to be indigestible by livestock.

To accurately test moisture samples in the past, producers relied on laboratory drying, Koster field drying, convection oven drying, and microwave oven drying. Determining the percentage moisture content of the sample using these techniques is based on the formula (wet forage weight minus dry forage weight) (divided by wet forage weight) (times 100). For example a 100-gram wet

sample weighing 86 grams after drying would have 14 per cent moisture.

These methods are very accurate and still should be used to calibrate electronic moisture probes, but they have limiting factors that make them undesirable to producers. It could take days to get the results of a lab test. A Koster field dryer requires a portable generator and several units are necessary to test multiple samples quickly. Convection oven drying takes 24 hours to run an adequate sample. Microwave ovens are fast, but the number of samples a producer can run at one time is limited and it is easy to burn the samples.

COLLECTING A COMPACTED SAMPLE

In order to compensate for these constraints and come up with a more efficient method of testing samples, University of Idaho researchers Ron Thaemert and Glenn Shewmaker developed an inexpensive tool to replicate the compaction and density of the hay in a bale. It can be made with a few simple supplies from the local hardware store.

WINDROW SAMPLING TOOL

Materials needed:

- 2 feet of 2-inch ABS pipe
- 3 feet of 1-1/4-inch PVC pipe
- 2, 1-1/4-inch PVC pipe caps
- 2-inch ABS cleanout adapter
- 2-inch ABS cleanout plug

To assemble the tool:

- Glue the end caps on the 1-1/4-inch pipe to create a simulated plunger.
- Glue the cleanout adapter on one end of the 2-inch ABS pipe.
- Screw the 2-inch ABS cleanout plug into the adapter to create a simulated bale chamber.

"Selecting the correct location in the field for sampling is not as impor-



PHOTO: MICHAEL THOMAS

Forage specialist Glenn Shewmaker demonstrates how to collect and place handfuls of hay samples in the tube. Pack the samples in tight and then insert the moisture sensor into the tube at different depths to get a field reading of hay moisture.

tant as the number of samples that are taken," says Shewmaker. "We suggest that you take at least 20 random samples for every 200-tons of hay across the whole spectrum of the field. This assures the producer that adequate representation of the entire field has been collected."

Keep in mind that irregularities in the geography of a field will effect drying: windrows from low areas could be wetter while windrows from high open areas tend to be drier.

"The common practice of irrigation prior to harvest is less beneficial than previously thought," says Shewmaker. "Not only is soil compaction increased, but drying time is increased by placing a wet alfalfa windrow on wet soil."

Once a sample location is selected, turn a portion of the windrow over and feel for the dampest hay in the sample area. Insert this hay into the testing tool a handful at a time until the tube is full. Place the collection chamber on the ground with the

capped end down and use the smaller tube (plunger) to compress the hay in the collection chamber, simulating the compaction of baled hay.

Insert an electronic moisture probe into the hay in the collection tube and record the moisture readings from four levels of the collection chamber – four, eight, 12 and 16 inches in depth. Next, average the readings to obtain average moisture of the sample area. Continue the process across the remainder of the field and average the data from all of the samples.

Care should be taken to clean the electronic probe after a few samples have been taken. As residue builds up on the probe it begins to reduce the accuracy of the reading. Also, probe readings should be compared to oven samples periodically to maintain that the probe is calibrated correctly. **GM**

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

FORAGE MANAGEMENT

Multi-benefits of multi-species

Collecting plenty of solar rays above ground benefits soil health below ground

By Sean McGrath

I am a big fan of diversity in both perennial and annual grazing situations. In some ways multiple species are more difficult to manage than less-diverse plant communities. In a multi-species scenario every action and in particular its timing will favour one species over another and shift the balance of power in the pasture.

The flip side of that is that well-designed multi-species pastures will have a diversity that increases overall yield, improves diet composition and reduces the risk from a variety of weather and production challenges.

I always think about the ground as

being like the surface of a mirror. What we see above ground is a reflection of what is going on below. At its most basic and simplified level, the parts of a plant that are above ground absorb sunlight and use the solar energy to convert carbon dioxide (yes, the taxable kind) and water into sugar. The sugar is then sent underground to feed bugs and fungi. They work with the roots to pull in nutrients like nitrogen, phosphorus and water for the plant to use for constructing proteins and other things that are not simple sugars.

When working well, this is an extremely productive partnership. Worth mentioning in this process is the special role of legumes, which also pull nitrogen gas from the air

and send it underground where bugs are converting it into plant-useable forms of soluble nitrogen. The fungus and bugs then steal this nitrogen for plants that can't make their own.

With this basic outline, it makes some sense that we want as much solar collection capacity above ground as possible and conversely we would like as much root capacity as we can get below ground. Additionally, since we have a limited number of days to capture solar energy we want a variety of plants that peak in growth from April/May through to September/October, or at least a spectrum of pastures that peak at different points of the year.

Different plants have different growth profiles. Some are taller

(wheatgrasses), some are shorter (bluegrass), some are green early in the spring (think crested wheat), some are better in the fall (Russian wild rye), some are nitrogen fixers (alfalfa, clover) and the list goes on. The important point is that each plant or plant species can cover different areas both above and below ground.

THINK OF AN UMBRELLA

While we may not be able to have a plant stem growing out of every square inch of soil, having a variety of plants in a stand allows the leaf canopy to cover more than the ground. A good analogy is an umbrella (perhaps not on the Prairies, but it is the picture that is important). The handle of the

umbrella only covers a small portion but the canopy when opened covers a much greater surface area. If we planted umbrellas that grow to different heights it is possible to have the canopies overlap and cover over 100 per cent of the surface area of the ground they are over.

Ideally the goal with a plant community should be to try to cover the ground 300 per cent or more with active solar-capturing leaves. To do this we need a variety of plant height, leaf shape and stem structures.

It is good to think about the underground aspect of our pasture in the same way. A simplified example of the root zone issue is on

Continued on Page 27 ▶

► Continued from Page 26

a lot of the commercially available alfalfa blends. Many are sold as creeping rooted, tap rooted and rhizomatous. This helps to distribute roots throughout various levels of the soil profile and provides an advantage across various weather situations. The same applies to grass species.

ACCOMODATING FIELD VARIABILITY

One of the other major reasons to consider multi-species grazing is the fact that most landscapes have some variability. Low spots may have more moisture or organic matter levels. Even soil type may vary in a single field. Including multiple species in a grazing mix helps to ensure that various areas are growing forage. It is not uncommon to see variation in relative plant species density across a pasture, even when it was all seeded to the same mixture and managed in the same way.

Multi-species mixes can help manage saline areas, sandy soils, slope or standing water. The gradient of species is much more effective in maximizing forage production than a human-defined line. For example, soil types may change gradually over the slope of a hill

and there may not be a defined line between the conversion from sand to clay. A multi-species pasture will have a gradual change in species composition up the slope, rather than a start/stop line between species.

Another key reason for multiple species is outside of direct production but can have an indirect effect on productivity. Multiple species and a patchwork of plants creates a patchwork of habitats for different wildlife to survive and thrive. This does not just include large animals, but also smaller animals like birds and bugs. While we often don't like to think about bugs in a positive way, there are a lot of insects that provide pretty valuable services such as cleaning up various worms and larvae of species that are harmful to our livestock or forage production, or accelerating the decomposition of manure into plant-available nutrients. Fly and grasshopper eggs on a poop plate anyone?

One of the interesting things I see time and again in our pasture-monitoring program is the difference in plant density and diversity in native versus tame plant communities. No matter what method I use to seed or graze tame stands, I have not been able to achieve the plant densities in our native stands and I am certainly not talented

enough to figure out how to achieve the plant diversity that is present in our native ecosystems. Native stands are very resilient and it is this resiliency that is the greatest asset in an established, tame forage stand. From drought resistance to biodiversity to increased production, multi-species plant communities are worth the extra management effort.

SOME GUIDELINES

While certainly blanket rules create exceptions there are probably two or three basic guidelines worth stating.

- Every stand needs a legume. Legumes fix nitrogen and help feed soil biology and other plants in the stand. Examples that we have used in tame stands include alfalfas, clovers and vetches. We have started using hairy vetch (an annual) as an addition to our swath grazing as well. For those worried about bloat, consider using a lower percentage of legume or adding sainfoin to the mix.
- We need to grab as much sunlight as we can over the year. This means we need species that respond to sunlight at different times, with a variety of growth patterns. A good example would be the difference between crested wheat (early growth), bromegrass (mid-season growth) and Russian



PHOTO: SEAN MCGRATH

This grass cage with rain gauge is on a multi-species pasture with three species of legumes and three grass species.

wild rye (late season). Even our annual crops include a variety of spring and fall/winter cereals in an effort to capture every ounce of sunlight we can get.

- We need to cover more ground above and below with a variety of structures. The plant canopy needs to cover more than 100 per cent of the area of the ground and the roots need to cover as much of the soil profile as possible. Remember that shoots build roots, and roots build shoots.
- We need to pay attention and

manage for the species we want. Because a multi-species system can be complex, we need to watch with particular attention to weak links and warning signs. This could include reduction in prevalence of a preferred grazing plant, loss of litter or bare soil. **GM**

Sean McGrath is a rancher and consultant from Vermillion, Alta. He can be reached at sean@ranchingsystems.com or (780)853-9673. For additional information visit www.ranchingsystems.com.

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THE MARKETS

Consumer spending favours beef market

Food prices have been down, so shoppers have more money for beef



MARKET UPDATE
Jerry Klassen

The fed and feeder cattle markets continue to hold value despite the year-over-year increase in beef production. Alberta packers were buying fed cattle in the range of \$175 to \$177 in late April. Wholesale beef prices have been surprisingly strong as beef demand continues to exceed expectations. Major economic indicators are fairly encouraging which should bode well for consumer spending throughout the summer period.

Feedlot margins have been hovering near historic highs over the past month. Feeder cattle prices have also strengthened but not to the extent of the fed market. Larger-frame, lower-flesh mixed steers averaging 925 pounds were quoted at \$172 landed in southern Alberta feedlots in late April. Feeder cattle prices are below the fed market, which doesn't occur that

often. In the short term, the fed cattle market will likely trade sideways and then soften in the third quarter. Feeder cattle prices are expected to stay firm throughout the summer and then come under pressure later in fall.

Cattle on feed in Alberta and Saskatchewan as of April 1 were 906,273 head, down four per cent from 941,140 head on April 1 of 2016. March placements were 185,763 head, up 15 per cent from March of 2016, while marketings were 135,750, up four per cent from 131,128 head last year.

RETAIL PRICES RATIONED DEMAND

I strongly believe one of the main reasons for lower cattle and beef values last fall was due to relatively strong retail beef prices. The retail market was rationing demand while beef supplies were building, and building rather quickly. It was a supply crunch hangover, which usually causes the market to overextend to the downside.

This year, retail prices are encour-

aging demand with ground beef down six per cent from year-ago levels and down 15 per cent from April of 2015. Secondly, prices are lower for all staple foods, allowing consumers more freedom to choose higher-priced items such as beef, and which is now cheaper than a year ago. The wholesale retail spread has moved back in line to traditional levels.

The feeder cattle market has been percolating higher with favourable feeding margins. Remember, cattle feeding is a competitive business. In the long run, feedlots will bid up the price of feeder cattle until there is no margin.

HEDGES NOT ADVISED

Feedlot operators have been hesitant to bid up the feeder market because the cash price for fed cattle is sharply above the futures market. However, as time goes on, there are ideas that the futures market has been undervalued for both live and feeder contracts. In any case, the feeder market will

U.S. QUARTERLY BEEF PRODUCTION (MILLION POUNDS)

Quarter	2013	2014	2015	Est. 2016	Est. 2017
1	6,172	5,868	5,664	5,935	6,340
2	6,517	6,183	5,857	6,187	6,640
3	6,608	6,179	6,068	6,468	6,870
4	6,420	6,021	6,109	6,623	6,650
Total	25,717	24,251	23,698	25,213	26,500

likely hold value with feedlot margins running over \$400 per head.

In central Alberta, Charolais-cross steers averaging 520 pounds reached up to a whopping \$240; similar-quality heifers weighing from 500 to 530 pounds were actively moving from \$200 to \$203.

Given the strong cash market, no hedges are advised for fed or feeder cattle. Secondly, the Canadian feeder cattle market is trading at a premium to the U.S. values. This is making it difficult for Canadian producers to hedge or buy price insurance for their production. On April 21, CME composite

price for 650 to 849 feeder steers, which is the official cash settlement price for the CME feeder cattle futures, was US\$138.05 and the May feeder cattle futures closed at US\$139.25. **GN**

Jerry Klassen manages the Canadian office of Swiss-based grain trader GAP SA Grains and Products Ltd., and is president and founder of Resilient Capital, specializing in proprietary commodity futures trading and market analysis. Jerry consults with feedlots on risk management and writes a weekly cattle market commentary. He can be reached at 204-504-8339.

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Nature's fly control program

Parastic wasps won't eliminate flies, but can reduce numbers



Debbie Chikousky

Spring has arrived and with it comes the new crop of flies. Since experiencing fly strike last year, controlling the fly population is more of a priority.

Last summer we began to notice not only were sprays not working as well as they used to, they are getting harder to find. This is due to tighter restrictions on chemicals. The flies are also becoming immune, making chemical control less effective.

Another option is biological control using fly parasites called parasitic wasps. This is not an eradication method, but a process of reducing the fly populations to a manageable level. These fly parasites already live in Canada. We are not introducing a new species by seeding our farms with inoculated fly eggs, we are just boosting their numbers.

Fly parasites, commonly referred

to as fly predators, are one of nature's control methods. Fly parasites are tiny wasps (the size of a fruit fly) that occur naturally, are mainly nocturnal, and do not harm humans, livestock or pets.

While there are other natural predators such as birds and spiders, the fly parasites are unique because they target the developing flies. Under circumstances normally observed in nature, these natural controls keep a balance in the fly population. When humans artificially increase the concentration of animals, we provide an ideal breeding environment for fly reproduction and the natural controls cannot keep up to the fly population explosion.

PARASITE MODE OF ACTION

The parasite females search for a fly pupa and can burrow up to six inches (15 cm) into manure or compost in order to reach the prey. They then deposit their eggs into the fly pupae and the young parasites will consume the fly pupae as nourishment while



PHOTO: FILE

developing into adult fly parasites. Each female will lay between 50 to 150 eggs depending on the species. These adults emerge fully grown and ready to search out more fly pupae and start the reproductive cycle again. Normally, this cycle takes 18-21 days depending on the species of fly parasite and temperature. The adult fly parasites also consume some of the fly pupae, providing a secondary method of reducing the potential fly population.

Producers have been reporting very good results using predator insects for fly control in many settings. The largest sheep producer in Manitoba has successfully adopted their use. There are also feedlots,

dairies and egg producers coming on board and are having a massive reduction in flies. That is not only making their neighbours happy — the less annoyed the livestock is, the higher their production.

A point to remember: a biological program should be started early in the year because it is easier to prevent an increase than to control a well-established fly population. Flies lay more eggs and have shorter life cycles than the fly parasites. If the problem is attacked early, the fly parasites have fewer pupae to attack, therefore they do a better job and fewer pest adults hatch out, resulting in fewer eggs laid.

REDUCING FLY NUMBERS HELPS

Some things to keep in mind to help reduce fly reproduction and help out the fly parasites:

- Flies require a moisture range of 35-70 per cent for successful larval development so keep manure piles as dry or as aerated as possible.

- Stir lagoons or seed the top crust with fly parasites.
- Repair all leaking water lines and try to reduce any wet areas, as these are natural fly-breeding grounds.
- The fly larval developmental cycle is about seven days so the manure should be dried out before that time. In a humid region, it is best to wait until cooler temperatures in the fall before spreading the manure.

The idea is that once released, the predators will keep breeding and eventually keep up with the flies. We would get a shipment monthly during fly season to keep our population high. If we can cut back on the ideal conditions that have been provided for the flies to overtake the natural predators here already that would be very helpful also. The people at www.goodbugs.ca have been very helpful at formulating a customized program. **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

'Mothering instincts' not always automatic

Only a few head to calve, but heifers need some extra attention



**Heather
Smith Thomas**

MARCH 26

We had our first "real" calf (since the premature baby) Wednesday. Zorra Rose (a first-calf heifer) calved a black brockle heifer calf quickly and easily. It was a nice afternoon so she didn't have to go in the barn. The calf was soon up and nursing, and Zorra Rose was a good mom. She wasn't due to calve until April 9; the calf was 17 days early, but strong and healthy.

We probably won't have any more calves for a day or two, but we started putting the most likely candidates in the orchard pen at night, where there's a good yard light, and we can see them easily from the house with a spotlight and binoculars.

APRIL 1, 2017

This past week was cold and windy with most nights below freezing. Andrea's kids were home for spring break and enjoyed helping with chores and feeding. Dani helped Andrea and me tag Zorra Rose's calf. Lynn had his last session of



Working on a section of new fence around a pasture where the heifers winter.

physical therapy Tuesday. Now he's supposed to keep doing shoulder exercises at home to keep strengthening and regaining range of motion.

Thursday was a little warmer. Robbie fixed leaks in the water trough above the house, using a rubbery coating. Friday he went with Andrea on her trip to Idaho Falls for her appointment with her pain doctor. That evening at a restaurant they met a Canadian couple from Saskatchewan who know Gregory and Heather. Small world.

My brother Rocky called that eve-

ning to tell us about a dead elk caught in the fence next to his house. He needed help to remove it. We called a Fish and Game officer who came today and looked at the dead elk and said that it was killed by a cougar; the cat was probably chasing it down the mountain and it hit the fence. The cougar had grabbed its neck, and slit open the abdomen to eat the liver, then left without eating more. We're hoping the cougar doesn't stay around because we have cows with new calves, and the Yoder's little boys could be at risk playing in that woody area.

APRIL 9

Last Sunday morning Lynn, Michael and Carolyn, Andrea and Robbie burned the ditchbanks along the field below our house. The heifers grazed there for several weeks and got rid of a lot of tall dead grass, but there was still a mat of old grass in the ditches that needed removing before we start irrigating. Rain early that morning made everything wet and difficult to burn. It took a lot of propane and diesel to keep the fires going, but also ensured that there would be no wind-blown sparks setting something else on fire (like our haystack nearby).

APRIL 17

We've had a lot more calves — mostly heifers and very few bull calves. Wednesday morning turned the corner on Deerling's attitude. Lynn helped me at 2 a.m. (and let Andrea sleep) and when we let Deerling out of the headcatch. She stood there for a few minutes and let the calf continue suckling, without kicking. At the next feeding we let Deerling out of the headcatch soon after the calf started nursing and she stood there calmly and let the calf continue. So we put the pair

in the second-day pens — out of the barn at last — in adjacent pens, where the calf has more room to run around and the cow can see and smell her more readily. At nursing time we fed Deerling in the corner next to her calf's pen, and let the calf come through the gate and nurse. This is easier than putting her in the headcatch, and one person can do this chore.

Yesterday was cold again. Deerling has made a lot of progress and didn't try to kick her calf after I left them together while I was doing morning chores, so I just left them together. They are now an official pair!

APRIL 24

We only have two cows left to calve — LilyAnn and a first-calf heifer, Gemini Cricket (a daughter of Emerald). This morning LillyAnn is restless, so maybe she's in early labour. It would be nice to have both of them calve soon! **GN**

Heather Smith Thomas is a longtime Grainews columnist who ranches with her husband Lynn near Salmon, Idaho. Contact her at 208-756-2841.

ANIMAL HEALTH

Several benefits to palpating heifers

An important tool in determining reproductive capability



**ANIMAL HEALTH
Roy Lewis**

Many commercial producers, purebred producers and heifer sales management are realizing the benefits of palpating heifers before breeding. A lot can be learned from the procedure, which can also be done at pregnancy checking. It involves a more thorough exam than simply determining if heifers are pregnant.

With the advent of very early-maturing breeds such as Gelbvieh, Angus, Simmental and others, it is not unusual for unwanted pregnancies to occur when breeding bulls are left out late. By palpating early, these pregnant heifers can be identified and removed from the breeding group. If they are not heavily pregnant (less than four months) abortion is a possibility as long as there is ample time for rebreeding.

My advice for heavily pregnant animals (seven months or older) is to calve them out. A fair percentage will calve normally. Palpating will at least identify them and give you an opportunity to segregate them. If you do abort them, keep in mind they need time to clean up for rebreeding. A percentage will not rebreed so it is a risk you take. If

aborted less than three months gestation I find they will clean up rather quickly (within a month) and be ready for rebreeding.

If pregnant ones are found, consult your veterinarian regarding stage of pregnancy and whether they should be aborted, left to calve or marketed. If you decide to abort, be sure and identify them in case they have problems. You may also want to repalpate them to be doubly sure that the abortion worked.

We are looking for several things when palpating open heifers. An intact uterus is necessary to conceive and evidence of cycling can be detected by palpating both ovaries. With large herds the records of twin calves can often be lost with the grafting of twins to cows which have lost calves for various reasons. Freemartins (heifer calf born twin to a bull calf) can be detected by palpation and eliminated, as often they have only a very rudimentary uterus, or none at all. Conversely in about five per cent of cases an intact uterus with two ovaries are present and these can be retained and most times will breed.

Keep in mind palpation is almost synonymous with ultrasounding and veterinarians will use whichever technique best suits them. Either technique in the right hands provides accurate results and increases conception rates.

EVALUATING THE REPRODUCTIVE TRACT

Various strategies for grading the development of the reproductive tract have been tried. These are based on the size of the reproductive tract and degree of development of the ovaries. Veterinarians basically want an adequately developed uterus with ovaries that show some sign of cycling. This is more critical when we palpate closer to breeding season. Keep in mind certain breeds develop earlier than others. This will be an adjunct to a synchronized breeding program.

Pelvimetry (measuring the pelvic area as it relates to calving) can also be performed at the same time as palpating. Both the Rice and Krautman pelvimeters are accurate in experienced hands. We measure the minimum height and maximum width of the pelvis. I am most familiar with the Krautman tool that calculates pelvic size in square centimetres and predicts the birth weight in pounds that a heifer could deliver with little or no assistance.

A cruder approach is to use your outstretched hand while palpating to at least identify very small pelvises and eliminate those animals from the breeding pool. All these techniques are used to avoid potential C-sections or hard pulls next spring by eliminating heifers with small pelvises. We can select for larger pelvises while still

maintaining moderate body size in our mature cows.

Palpating also uncovers misshapen pelvises, adhesions (scar tissue), kidney infections, cystic ovaries or other internal cysts and masses. The decision then becomes to market these animals or keep them as replacements.

WHILE YOU'RE AT IT

Next, the ear tags are checked and any prebreeding shots for IBR and BVD, including a multivalent blackleg and parasite control are given as prescribed by your veterinarian.

Weight is a good way to compare heifers so if possible run them over a scale. If any genetic tests are desirable, especially with purebreds, your veterinarian will grab a hair or blood sample as well. It is often desirable to avoid selecting the most rapidly growing heifers for replacements. Avoid the top five per cent. They are often more like males hormonally and conception rates are lower.

By tying in all these procedures with palpating you will be going a long way toward selecting sound heifers that hopefully will be productive and provide fertility and longevity to your herd.

If palpating was missed last spring you can incorporate pelvimetry into pregnancy checking in the fall to look for potential calving problems. If it's

done early enough to predict those that conceived in the first, second or third cycle, the pregnancies can be staged. We need heifers calving right at the beginning of the calving season or even a cycle earlier so they rebreed and remain in the herd their second year.

Any other conformational problems in the growth of the pelvis can also be determined at this time. If done early enough with an ultrasound, heifers carrying twins may be identified so they can be segregated.

Be sure to vaccinate the bred heifers for scours, especially if you are bringing them into your herd. Palpating while reading the ear tags makes it easier to get some of this useful selection information into your database along with the usual notations for feet and legs, body condition and temperament.

In the future with more genomic testing, we will no doubt add to this list by selecting for disease resistance, parasite resistance and even fly resistance. Selection for reproductive soundness by any means possible (palpation, ultrasound or genomics) is a necessary step in today's modern cattle operations. **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

Ten things farm moms really want

Regardless of age or stage in life many farm moms have things they would like to be able to express

By Elaine Froese

It would be fun for you to be a fly on the wall of my office when the calls from farm moms come in. They range in age from 33 to 93. Regardless of your age or stage as a farm mom, I bet there are things that you would like to be able to express to your farm team and family.

1. A voice for change. As the sons and daughters grow into capable farming adults the mom sometimes feels left out. Her role as nurturer and launcher has shifted. She may also be actively involved in the farm labour and management. But somehow she feels her voice is not heard. She sometimes feels that she doesn't have a voice in the legacy decision-making for the future vision of the farm. Are you going to have a family business meeting at the end of seeding to talk about the future vision of the farm now that the kids are back home farming?

2. Better communication. The

day-to-day affairs of running a farm are complex, but the wheels all turn more smoothly when people communicate directly to each other with clear, concise instructions and respect for the listener. Moms are often the sounding boards for spouses, children and in-laws. Use a learner mindset when you talk to seek understanding of the other person's perspective. Explain your intent, and why certain decisions are important. Be respectful of each other as you speak, and look each other in the eye.

3. Less refereeing and more resolution of fights. Most farm moms would love to give up their referee sweaters for life. That means adult founders speak directly to successors, and don't loop Mom into picking sides. You get the behaviour you accept. If you want folks to be more direct with each other and resolve their tensions, don't keep being the "person in the middle."

4. Love and affirmation. Moms have big hearts for all their children. When have you told your mom that

you love her? How have you showed her with your actions? Have you spent quality time with her? Do you pick out special gifts for her? Do you hug her?

5. Good mental health for all the family. Moms are willing to take family members to the doctor for mental health assessments, but those family members have to be OK with doing the work of being mentally well. Depression, anxiety, unresolved anger and early signs of dementia are on our farms. Let's talk about our concerns for mental wellness, and let's get treatment if it is needed.

6. Fun with friends and family. Give Mom permission to leave the farm for more than 24 hours. She likely has girlfriends, far-away family and sights over the sea to explore. Has she been holding back because Dad is always working and won't leave the farm? What does your mom consider a fun time?

7. Security for her financial future. I recently had a 93-year-old ranch woman in my seminar who was pleased that her financial affairs were

all in order. She was well taken care of financially and legally with her power of attorney and updated will. Does your mom have her name on farm assets? Can she say that she "has a purse of her own" to spend or gift money as she wishes? Every person deserves to have a personal wealth bubble to secure their future well-being as they age, and this goes beyond the meagre pensions from CPP and OAS.

8. Help with the heavy lifting. What I am talking about here are the physical tasks of maintaining a farmyard in decent shape. The farm's demands never stop, but your mom knows that beauty creates energy. Help her create more beauty in the landscape around her home or make it easier for her to maintain.

9. Her own tools. Farm moms love it when they don't have to walk miles to find tools for their jobs. I asked for a wheelbarrow, and a chainsaw for Mother's Day gifts, because I need decent tools to work with that were close at hand. Check

with your mom first if she is the type who would appreciate a new rake, spade, or screwdriver!

10. To know you are there for her. Today I witnessed a faithful son taking his aging mom her mail. He moved her to his town so that he could check in on her on a regular basis. Many of her friends have passed, but her family is there for her. Moms love to be rich in relationship; young and older women friends are important. What very practical things are you doing to enhance your mom's emotional support group beyond your family? Does your mother know that no matter what is happening on the farm that she can count on you to be there for her? **GM**

Elaine Froese empowers farm families to communicate and secure legacy. She farms in SW Manitoba near Boissevain. Visit www.elainefroese.com/ store for more resources. Tweet @elainefroese. Facebook "Farm family coach." Youtube "Farm family coach." Stay safe as you #plant2017.

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PRAIRIE PALATE

Just a salad for dinner?

Yes — if it's a hearty one with pasta and meat like this Vietnamese Salad



Amy Jo Ehman

You know that woman who goes out for dinner with her date (read: husband) and, despite a full and varied menu, orders a salad? OK, that's me.

I have nothing against a big bowl of pasta or a good steak (blue rare, please) or the seafood special of the day. I love it all. But I love a salad more. Mind you, I'm not talking about the house salad, you know the one, a mound of iceberg lettuce and a few wedges of hard, unripe tomato. A slice of cucumber on the side. That's the most boring salad in the world.

I'm talking about a full-bodied, multiplex, over-achieving meal in a bowl. A salad with meat, literally. Examples include a chef's salad, cobb salad, grilled chicken caesar and, in the category of signature salads, the mandarin chicken salad at Clark and Lewie's in Great Falls, Montana. I also love salads with steak.

A few years back, I wrote restaurant reviews for the *Saskatoon Star-Phoenix*. Yes, they paid me to eat out, once a week, anywhere I wanted within the city limits. A dream gig, no? Normally, I don't eat out that much, preferring to cook in my own kitchen. But this was work. Someone else was paying for dinner and paying me, too. I loved it.

Of course, there are many factors to consider when reviewing a restaurant. Does the restaurant have a theme? What is the backstory to that theme and how does it play out on the menu? What are the specialties? What are the fan favourites? Is there a local component or a world view? Is the service helpful? Is the decor clean? Does the food taste good?

I usually ordered three things off the menu, since a restaurant cannot be judged by its entrees alone. Appetizer + main + dessert.

Sometimes the appetizer was a salad; sometimes a salad came with the entree. If it was a house salad (as described above) I usually opted for the soup instead. Sometimes I

skipped both soup and salad and went straight for the fried zucchini sticks or crab cakes or coconut shrimp. However, I rarely ordered a salad as a meal. One salad does not a review make. (Although, now that I think of it, a restaurant review column based solely on the salad options would be a healthy alternative.) If I learned one thing by eating out once a week it's this: restaurants are fattening. Not just the food itself, but how *much* food. After a full year of restaurant reviews, when May rolled around, I discovered my summer wardrobe had shrunk since the summer before. Suddenly, I liked salads more than ever!

This Vietnamese salad is a favourite of mine, especially for dinner on the patio. It can be cooked ahead and assembled just before serving. And no restaurant bill. **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.

VIETNAMESE SALAD

You can make smaller (and more) meatballs. I make them larger so they don't fall through the grill.

1 lb. (450 g) angel hair pasta or rice noodles
1/2 c. carrots, cut in thin matchsticks
1/2 c. cucumber, cut in thin matchsticks
1/2 c. cabbage, thinly sliced
1 lb. pork or beef, or a combination
1/4 c. green onion, thinly sliced
2 tbsp. cilantro, finely chopped
1 tsp. sugar
1 tsp. fish sauce
2 handfuls of lettuce
Fresh cilantro and mint for garnish, chopped

For the sauce, mix together:
1 large garlic, minced
1 hot pepper, chopped (optional)
1 c. water
1/2 c. sugar
1/2 c. fish sauce
1/2 c. red-wine vinegar

Cook noodles in salted water. Drain, rinse and cool. Meanwhile, make the sauce. Boil two cups of water with a dash of salt. Add the carrots, cook just until they begin to soften, and remove with a slotted spoon. Rinse in cold water. Repeat this process with the cucumber and the cabbage. Drain the vegetables of cold water and mix them with the sauce. For the meatballs, mix the meat with the green onion, cilantro, sugar and fish sauce, plus a dash of salt and pepper. Mix well with your hands until the meat becomes smooth and sticky. Form into 10 meatballs and press to flatten. Cook on a grill or skillet until nicely browned. Add the meatballs to the sauce and vegetables. To serve, place the lettuce in a wide bowl. Top with noodles. Scoop vegetables and meat from the sauce and place on top. Pour sauce over all. Sprinkle with chopped cilantro and mint.



PHOTO: AMY JO EHMAN

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FIT TO FARM

Help for those tight muscles

Here's some techniques to try to help loosen up that tense tissue

By **Kathlyn Hossack**

Ever have a tight neck after a stressful day with no one to rub it for you? Good news! You can release those tense tissues on your own – not quite as relaxing – but it will make you feel better.

Soft Tissue Release is a form of massage that involves finding pressure points in a certain muscle and then taking that muscle through its range of motion (or stretching it) while maintaining pressure to “release” the tissue. Here are some techniques to try.



The neck is a common area to tighten up.

First – the neck. This is a common tight spot, and with it can come headaches and migraines (see a professional if pain lasts longer than a few days). Start by placing your finger with moderate to strong pressure where your trapezius muscles lift off the shoulder (the triangle-looking muscles at the side of the neck). Then, move your head to the opposite side. Continue these movements, moving the fingers up and down the muscle, and moving your head to the side and forward. You should feel a mix of a stretch, and pressure on the muscle. Continue this for 10 to 15 reps up and down the muscle, on both sides. You should progressively find that you're getting more range of motion with each movement.



You'll know you've located the correct area in the shoulder as it is a common tight spot.

Next – the chest muscles, specifically the pectoralis group. Place your thumb in the front of your shoulder. You'll know you've found the spot as most people are very tight here. Feeling for that band of muscle, bring your arm to 90 degrees and stretch it backwards. You can use a doorframe or wall to aid in this if you'd like more intense stretch. Move in and out, and up the muscle to different points for 10 to 15 passes, aiming for more range of motion each time.



Applying pressure on the forearm can help the muscles that contribute to carpal tunnel.

Last – the forearms. Start with your fingers applying strong pressure anywhere along the muscles running from the elbow to the wrist. Move your wrist (of the arm you're putting pressure on) into flexion and extension (bend it and extend it). Keeping the elbow straight, you'll get some stretch and the feeling of a massage into the length of the muscles on either side of the forearm. An awesome break for these muscles

that are the common culprits behind carpal tunnel, tennis, and golfer's elbow.

These techniques are designed to relieve tight muscles, but are not meant to replace appropriate treatment or assessment by your doctor or other health-care professional. Be sure to check in with your athletic therapist, physiotherapist, MD, RMT, or other movement professional if tightness or pain persists.

Be sure to also be hydrating appropriately, as tight muscles are often also a sign of poor hydration habits! **GN**

Kathlyn Hossack is an athletic therapist from Winnipeg. She owns and operates Katmah Training, a mobile therapy and education service focused on preventing and rehabilitating injuries and chronic pain. She can be reached at katmahtraining@gmail.com.



SPRING HAS SPRUNG!

It is a great time to make sure a **safe play area** for kids is ready for the up and coming season!

A safe play area is a planned, designated location with limited exposure to such hazards as traffic, agricultural production and environmental concerns.

Designate these play areas by boundaries or physical barriers.

For more information on safe play areas visit www.agsafetyweek.ca/build-a-safe-play-area.html

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SINGING GARDENER

Planting and raising raspberries

Plus, sauerkraut from crock to jars and making refreshing rhubarb slush



Ted Meseyton
singinggardener@mts.net

Planting raspberries — and memories of Prairie songs. Also, yours truly had a chance to talk with gardener Margaret Gluska from Cranberry Portage, Manitoba. She's seeking seeds for Pilgrim tomato and apparently they're as hard to get as pulling hens' teeth.

As I get older, thoughts sometimes return to childhood days. A number of Prairie songs from my memory bank have surfaced that I've been singing lately. One tune in particular that really touches my heart is: "There's No One Like Mother To Me."

I bid my *Grainews* readers howdy and welcome with a tip o' the hat. In my mind's eye I visualize you waving back to me. You're a great bunch and thanks for being who you are.



PLANTING RASPBERRIES

Soil preparation, preferably a season in advance, is really important, especially for big-scale commercial growers. It is better to wait a year if you're dealing with twitchgrass, quackgrass or whatever unwanted plant growth there is. When grasses and weeds are eliminated, a future raspberry plantation will be easy to deal with and looking good for many years down the road.

Purchase certified disease- and virus-free raspberry stock and plant as early as possible, preferably on a cloudy or drizzly day. Within the row, canes should be about 60 cm (24 inches) apart, with rows two metres wide and up to three or 3-1/2 metres apart when mechanized equipment is used. Of course, home gardeners can make adjustments according to their space available.

RASPBERRY PESTS

Be on the lookout for Spotted Winged Drosophila (*Drosophila suzukii*) (SWD), a vinegar fruit fly of East Asian origin that lays eggs both in unripe and ripe fruit such as raspberries, strawberries, blueberries, cherries and plums. Eggs hatch about three days later and maggot-like larvae feed on fruit to emerge as adult flies about a week or more later. By contrast, what we call the common indoor and outdoor fruit fly (*Drosophila melanogaster*) feeds on overripe and decaying fruit. Infestations in recent years have been spotty in some areas of the country including Manitoba since summer of 2013 and Ontario. But, like the lily leaf beetle, the drosophila can spread its wings and may show up elsewhere. Growers should monitor for this pest, correctly identify it and take steps to minimize populations.

Thoroughly pick all near-ripe,



Shown are stalks of German Wine rhubarb ready for harvest. Ted says it's time to make a low-cost refreshing beverage and provides easy-to-follow steps for "No-Fuss Rhubarb Slush."

ripened and infested fruit from the fruit-bearing canes and berries dropped to the ground. Do this frequently, possibly more than once each day. Carefully remove and destroy the unwanted fruit to prevent flies from feeding on it and hatching more larvae. Bury it away from growing site at least a couple of feet deep. Crushing or composting the fruit and leaving it on the soil surface won't work, as more drosophila will emerge.

Some research has shown that bagging fruit in plastic or covering it with plastic and exposing it to full sun for a week kills all eggs and larvae. But this could be an awesome undertaking on a large plantation and you don't want to overheat or cook the fruit. Draping the blossoms carefully with lightweight white floating row cover is another option and makes a useful insect barrier. Such material is available at some garden centres and dollar stores and provides protection against maggot flies, flea beetles, thrips, aphids and other pests without heat buildup. However, it also impedes bees and other pollinating insects. Fasten the material securely with clothespins or other clips so the fabric doesn't blow off.

I recall one case of a rural raspberry grower who burned an entire raspberry plantation to the ground in an effort to get rid of an SWD infestation.

Another common raspberry pest that's been around for a while is the cane borer. The sudden wilting of the tip of a cane indicates that the borer is at work. Prune off cane at least 15 cm (six inches) below the bottom of the wilt and destroy the part removed. If you do nothing, the pest will burrow down through the cane and destroy the crown. If young canes wilt in late spring and early summer, the cane maggot is doing its dastardly deed. Control is the same as for the cane borer. Both the raspberry fruit worm and the raspberry sawfly are other pests that can cause periodic trouble. Hanging Safer's Sticky Strips and/or Sticky Sticks near tops of canes is

another option to reduce presence of flying pests.

RASPBERRY DISEASES

Viruses can be troublesome for some varieties. There's no real cure other than to purchase different resistant plants. A virus displays itself by fruits becoming smaller with each passing year. Also the canes and leaves take on a lacklustre appearance and finally die completely.

Orange rust (also found on some roses and hollyhocks) is common on wild raspberries and some cultivated red and black raspberries. The disease manifests itself by bright-orange spores on canes and undersides of leaves. Leaf curl causes new leaves to curl downward and inward toward the cane. If leaves on new canes are mottled with yellow streaks, mosaic virus is often to blame. Raspberries are often susceptible to verticillium, a common disease that also attacks some tomato varieties. Anthracnose is a fungus disease which occurs on raspberry canes as grey blotches with purple edges. The recommended control is lime-sulphur or other sulphur-based sprays.

SUBJECT: TOMATO SEEDS MISSING IN ACTION

The above headline came from Leonard A. Gluska, president of L.A.G. Holdings Ltd., Cranberry Portage, Man. He wrote: "I am actually farming and in the feed grain marketing business, with trucks that transport the feed grain from farm gate to market, which are livestock producers and feed mills. So that is where my true green thumb is applied with a lot of related perseverance and emotion.

"My good wife Margaret begins reading *Grainews* with the back page; need I say more. She asked me to email you to ask if you could point in the direction of a source for seeds for Pilgrim tomato. You could text her at 204-271-1524 or respond by email at lgluska@mymts.net or phone her at 204-472-3684 (landline) and maybe engage in a conver-

sation with another passionate gardener. Thanks."

Ted replies: Here's a short account of my conversation with Margaret. She told me: "I had beautiful, beautiful, bright, big red Pilgrim tomatoes that ripened in my garden. I bought them as bedding plants in Dauphin one year, and another year in Yorkton. Now they say they can't get seeds anymore. I'd like to start some myself if I can get the seeds."

I asked Margaret what else is going on. "I grow enough produce of everything and share with a lot of neighbours. I grow my own potatoes such as russets, Norland and Viking from one year to the next.

"I also grow gladiolus, and all kinds of flowers including big sunflowers. The good Lord let's me produce more than I need so I willingly share them at no cost. I can about 40 quarts of tomatoes every year and make about 100 quarts of dills — lots of salsa and freeze corn."

Our conversation turned to Margaret's method for making sauerkraut. "About 10 pounds of shredded cabbage and about 2/3 to 3/4 cup of coarse salt. I kind of go by taste to make sure I have enough salt or not too much and a little pickling spice. I put it all in layers in a crock and let it sit for three, four or five days or a week or more and then I pack it into jars with new rubber rings and top them off with about an inch of hot boiling water and let sit again for about a week. Then put jars in a canner filled with hot boiling water for about 10 minutes to stop the fermentation. Remove jars and tip them over for three or four days to make sure they're sealed and no leaks, then turn jars upright and place in storage. My mom made sauerkraut that way; it keeps and stays nice and white."

NO-FUSS RHUBARB SLUSH

I hope your rhubarb plants are doing marvellous in a sunny garden. Rhubarb is the featured ingredient in this homemade beverage.

Keep a pitcher full of rhubarb slush chilled in the fridge. It's one of the least expensive ways to satisfy thirst other than plain water. This recipe is the creation of a professional home economist. A big thank you to Karla and the good folks at Fruit Share Winnipeg. Some modifications shall follow the recipe for those desiring to make it less sweet.

Ingredients:

8 cups rhubarb, washed and diced
2-1/2 to 3 cups sugar (your choice)
8 cups water
1/2 cup lemon juice
1 4-oz. package strawberry jelly powder
Lemon-lime soft drink such as 7-Up

Method:

Place first four ingredients in a large saucepan and lightly boil for 10 to 15 minutes. Strain off liquid and use the rhubarb pulp to add to the compost pile. Add and stir in one (4-oz.) package strawberry jelly powder. Freeze in an ice-cream pail, or appropriate containers. Remove from freezer one hour before serving or while still slushy. Combine equal parts of lemon-lime soft drink and rhubarb slush.

A Couple of Modifications

The following reduces the amount of sugar used and enhances the rhubarb flavour. Substitute one envelope of unflavoured gelatin instead of strawberry jelly powder. Mix with club soda instead of lemon-lime soft drink. That's it.

Here's notable feedback from someone who tried it. "This slush is delicious! I made it as is, but next time I may try the modification. I was just going to compost the pulp, but my son said, 'No don't — it's good! I used the rhubarb pulp in place of applesauce in a recipe for low-fat muffins!'"

NO-COST PAYING FORWARD

Have you had a kindness shown? Pass it on, pass it on,

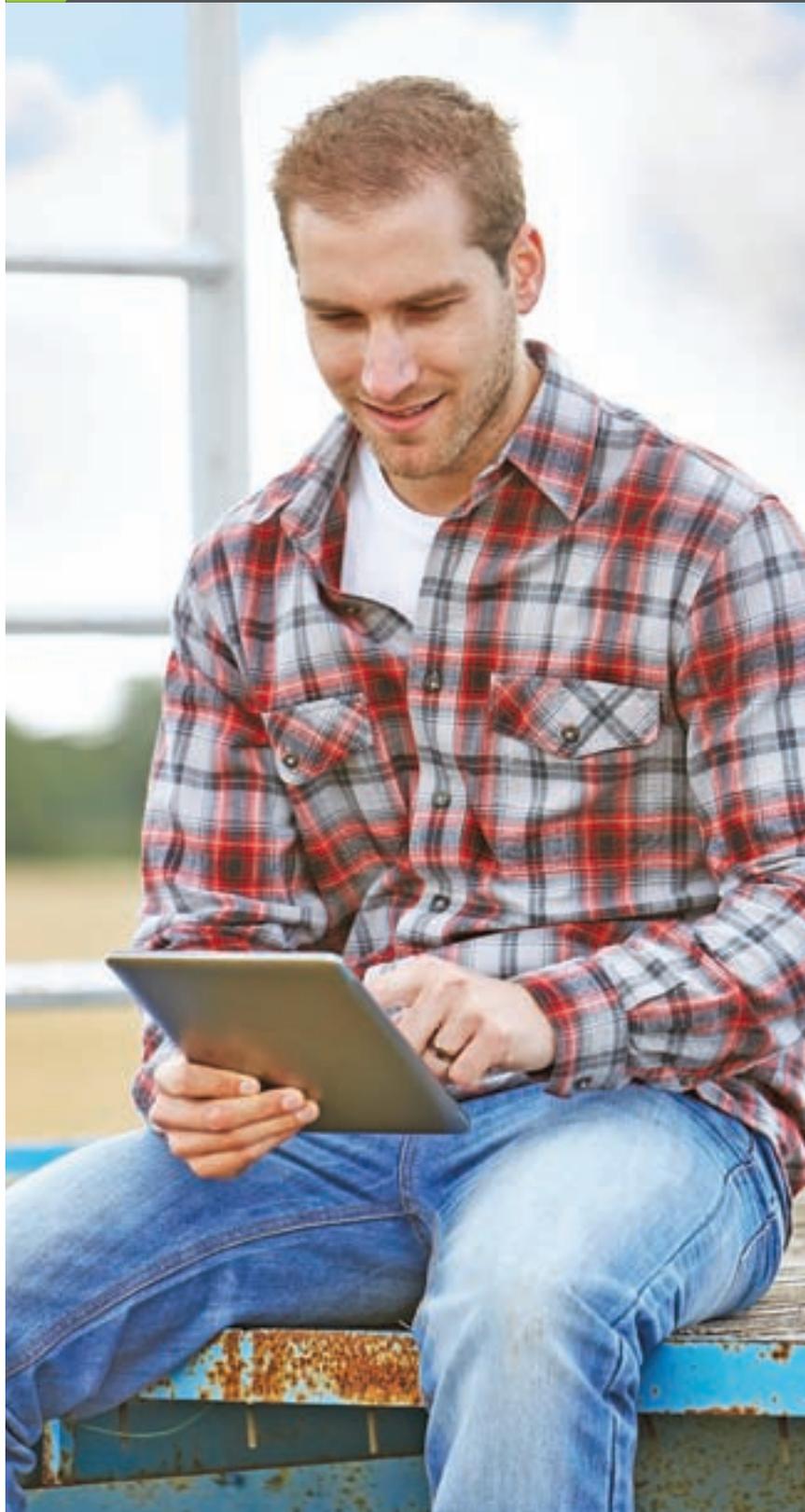
'Twas not given for you alone, pass it on, pass it on,

As it travels with you down life's road, pass it on, pass it on,

Comfort, joy and respect show, pass it on, pass it on. GN



This is Ted Meseyton the Singing Gardener and Grow-It Poet from Portage la Prairie, Man. I'm born in Canada, it's a me with golden canola, a waving sea, veggies and flowers in gardens galore, splendour and beauty, so much to be grateful and thankful for. singinggardener@mts.net



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