NOVEMBER 2020

Kipling Fire Department hosts grain rescue training

BY KEVIN WEEDMARK

AND VICTOR VAN DER MERWE
Inside the Kipling fire hall, firefighters
gather around a mockup of a grain bin as
one volunteer sinks into the wheat so they can learn the best way to rescue someone

in that situation.

Kevin Puffalt of the Kipling Fire Department said the event was organized through the Canadian Agriculture Safety

through the Canadian Agriculture Safety Association.

"The (grain rescue) unit is out of Manitoba. CASA put it together and they are organizing the training," says Puffalt. "They are the ones I spoke to through the department to organize this. They put together the training, they provided the trainer. You may have seen them in the past at Agribition and trade shows.

"The theory side is taught first, and the practical side is taught here.

"Eleven members of the Kipling Fire Department are being trained this weekend and we have two other fire departments that have come for training.

that have come for training.
"Typically every first and third Tuesday
of the month we organize some training.
In this case we brought in the trailer and In this case we brought in the trailer and the trainer to provide some additional training. We've never been trained in this before. The best part of the training might be simply the fact you are made aware to a higher degree of the importance of safety, getting the word out that the safest thing is to not get in the bin.

"It cost more than \$2,000 to bring out the trailer and the trainer, but we get a lot of support from the community, and we got sponsors to help with the cost of these training sessions."

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Kipling Fire Chief Ken Nordal said the training brought new skills and new awareness to the local firefighters.

"This is all new to us, and it's impor-tant," he said. "When I first joined the de-partment 30 years ago, there was a young lad who went into one of the dust collec-tors in an elevator and was overcome with

dust.

"I think it's important that our guys get an understanding what to do if you are in that situation. Without the basic instruction and guidelines, you just wouldn't know what to do. "We try to do training every second week. That has been more difficult during

Covid, because we try to restrict the num-

bers."
Nordal said the Kipling Fire Department

is getting more calls every year.
"Our call numbers have gone up for the last seven years," he said. "We are getting a lot of stubble fire calls, grass fires, we've

been getting a lot of accidents.
"We do a lot of STARS landings and as
STARS become more prominent in the
province, STARS is the number one call

right now." Melville Fire Chief Tyron Morgensen led



Firefighters were trained in grain rescue in a series of training sessions in Kipling November 20 and 21.

four training sessions for firefighters from Kipling and surrounding communities November 20 and 21 through the Cana-

dian Agriculture Safety Association.

"A couple of years ago, CASA was getting going with this program and we organized a train the trainers program in Melville, and because the grain rescue unit was there and set up. We trained our guys and a bunch of fire departments around us," he

said.

"So periodically we do some training programs. We did White City a couple of weeks ago, and Kipling this weekend. I think we've had some other departments come in and Kipling itself, so it helps out different departments. Fire services is always out trying to learn new techniques and out the base of the progression with her second out the second of the seco and get the thought process going with lots of people, in regards to rescue and what to

do to get people out of a bad spot. That's how I got involved in it. I've been in the fire services for 30 years. I didn't know anything about farmland or grain or what-not because I grew up in the Yukon. So, I came to Saskatchewan where agriculture is a main industry. So, for me to learn about grains and hazards was awesome for me.

"Most of the guys I am dealing with today are farmers and understand grains and farm machinery, but not all members of fire departments understand that concept, me being one of them. So when I took the training it was quite the eye opener for me to realize just some hazards that are there. So we try and pass that knowledge around. The training does not have to do with strictly grains. It is basically anything you can stack. Grains, fertilizers, gravel are all hazards.

"The main focus here are the hazards "The main focus here are the hazards that are involved with the grain, and the thought process of what we can do to get somebody rescued out of the grain in the event that they get themselves into a situation. My main focus as an instructor is that they understand the hazards and what we can do safely, because fire fighters or fire rescue personnel need to go into a bad situation to mitigate the problem, so a bad situation to mitigate the problem, so if somebody is inside a grain bin, how are we going to get them out of there? And the process here is to train in an environment that is safe, so the farmers and fire fighters understand what it is like to be stuck in the grain. Here, in a safe environment they get to experience the pressure you feel when you are in the grain, and that it is not just a matter of walking your way out, sometimes you are in there pretty solid. The main stuff today is how we can rescue somebody safely, and understand the hazsomebody safely, and understand the haz-ards of the grain itself. "I am just here to take that theory they

have learned already and put it into a practical setting. This trailer, the way it is set up works pretty well in that respect. It is a really good program, I can't say enough

about it.

"Grain is a danger. If kids see a grain truck sitting they think it's a great place to climb around, and the next thing you know and not realizing it, they fall into the grain, and that can be trouble.

"Now if it is a grain that is conducive to not sinking you are okay, but if it is canola or flax or something like that, you are in a world of hurt. So, even awareness in people that aren't necessarily rescuers is importhat after three same testals is impor-tant. There are dangers people should be aware of and there are precautions people should take so that we don't have to rescue people. If I don't have to rescue anybody, I am a happy man. If I unfortunately get into that situation I want to be able to do it in a safe manner where I don't get hurt and my guys don't get hurt and this training we are doing is to do exactly that."

Continued on page B8 18

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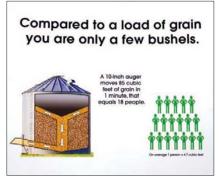
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These three panels were on display at the grain safety demonstration, showing what can happen when a person sinks into the grain.







Above left and right: These photos show how to rescue someone using special equipment if they sink into the grain. Metal panels are pushed down around the person to create a tube and isolate them, above left. The grain is then augered out of the tube, right, and the person is lifted out once the level of grain in the tube is reduced.





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Left: One of the firefighters volunteers to sink down into the grain up to his chest then wiggle his way out from side to side, a technique that can be used to rescue yourself once you sink. Some grains are harder to get out of than others. While wheat tends to stick together, canola and flax are much more slippery and people sink much more quickly.



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Canadian Agricultural Safety Association

'Safe work is productive work'

By Victor van der Merwe

Local Journalism Initiative Reporter

Accidents happen on farms. The goal of the Canadian Agricultural Safety Association (CASA) is to limit these accident, or to use the correct term, "incidents" according to Robert Gobeil, an agricultural health and safety specialist with CASA cialist with CASA.

"For starters I am going to try and steer you into using the term 'incident' versus 'accident', just because the word 'accident,' tends to give the impression that the incident was unavoidable, it was an act of God, kind of situation, and it is pretty rare that there is an incident on the farm that is not preventable," said Gobeil.

The good news is that it seems that incident and injury

rates are in a steady decline.
"We collect the Canadian agricultural injury reporting data. One of the reports that I just looked at, which is the 1990 to 2012 report. We have more current reports, but not as comprehensive. I think it shows a good representation of things. In that report, we are looking at an average over the 23 years in that report, we see an average decrease of 1.1 per cent, in injury and incident rates across Canada. It does not sound like much, but over 23 years that is 25 per cent, roughly. That is a great trend and from what we can tell that trend is continuing," said Gobeil.

Influence for other industries

It is down to the changing times that rates of these inci-

dents and injuries are going down.

"I think there are a few reasons for that. If you look at some of the farming statistics across Canada, Í don't have stats in front of me, but (a lot) of farmers do not consider farming their main work activity anymore. So, it is more of a second occupation, not a primary one. There is also more safety coming into agriculture from other sectors, just because people are working in other sectors and bringing that safety back to the farm.

"Out in your neck of the woods (Southeast Saskatchewan) there, you have the oil and gas sector. They are big on safety, you can't even get on site without a safety orientation and the proper gear and proper safety training. That mindset is making it out on to the farm. People just have that mindset for work in general nowadays. Safety

culture is starting to improve right across the board and it is migrating into the agricultural sector," said Gobeil. With a changing society and dedicated safety associations across the country, the focus on proper safety has increased in recent years.

increased in recent years.

"Right across Canada you have your agricultural safety associations. Almost all the provinces have a dedicated provincial safety association for agriculture, and then there is CASA that tries to work with our provincial partners and get that messaging improved right across the

"Society is changing as well. What was socially acceptable a generation or two generations ago, when you look at the farming activities and the farming practices that our grandparents used is no longer acceptable. They were not necessarily bad, but things have changed. We are using more personal protective equipment (PPE) now for example, we are more health conscious as a society now, and we are starting to understand some of the effects of things like chemical usage and we understand that there are long-term health effects when it comes to handling certain chemicals. We take a little bit more care to protect ourselves as to what previous generations did," said Go-

Farm equipment

Even with people being more safety conscious, incidents still happen, especially when it comes to farm ve-

dents still happen, especially when it comes to farm vehicles and equipment.

"Looking at the top 10 mechanisms and injuries, for the reporting period of 2003 to 2012, the top seven are all tractor or equipment related. Right at the very top you got runover incidents, you got roll over incidents and pinned or struck by equipment. The fourth is animal related incidents usually to do with someone getting pinned or trampled by livestock, then we go back to tractor related incidents like entanglement, traffic collisions and then there is being struck by falling or propelled objects. A there is being struck by falling or propelled objects. A tractor churning a bale and the bale falls off the tractor," said Gobeil.

New machines might come with a new set of safety fea-

tures, but they also come with a new set of problems.
"There is still a good mix of equipment on the farm and they all come with their own hazards. One of the things about new equipment is that even though there are a ton of new safety features on modern equipment, the size of modern equipment has increased almost exponentially. Modern tractors are just huge so that being said, there are more blind spots, there are potential hazards when you are working in or around that equipment, unfortunately, when you add children into the mix, they are harder to see, combine that with those bigger blind spots and you better know where you kids are," said Gobeil.

Safe play areas

The protection of children is something that CASA takes very seriously.

"We have the misfortune to come across some of these

stories of children and people getting injured or killed on a farm and when there is a child involved it is heartbreaking. Of course we want to mention having safe play areas for children on the farm,"



The idea behind the designated safe play area is keep-

In the deal benind the designated sare play area is keeping kids away from dangerous areas.

"You know they are in a safe zone, they are supervised, they are trained to stay in that area and things are predictable and people can get on with work and not have to worry as much about children being in or around that activities "said Cebail". equipment," said Gobeil.

For more information on safe play areas people can go to www.casa-acsa.ca/en/resources/ag-youth-work-

Stop, think and act

The best protection against preventable incidents seem to be proper supervision and training.

"It is having adequate supervision whether it is for kids or for farm workers as well. Making sure they are trained to do their job. Looking at the pinned or struck by equipment stats, you got a worker on the farm doing maintenance on the tractor. They forget to chock block the tractor and it rolls a little bit and the worker gets pinned or run over by the tractor inadvertently. It may be a lack of training it may be a lack of preparation un front even rushing. ing, it may be a lack of preparation up front, even rushing because it is harvest time for example and everybody is in a hurry and they don't take time to think, well, if you don't think, there can be some pretty severe consequencsaid Gobeil.

Slowing down to assess every situation is key in pre-

Slowing down to assess every situation is key in preventing injuries.

"The stop, think and act concept. Before you take on any task on the farm, stop, think about what you are doing, and then go ahead and do it, that is just the outer skin of the onion so to speak. We can peal back many layers and talk about safety gear and all the technical stuff that goes along with that, but if you follow those three little steps, that will provide the basis for making your immediate situation safer on the farm," said Gobeil.

During a pandemic, it can be tough getting the safety message across, but CASA has found ways to communi-"Due to COVID-19, it has been a challenge attending

any live events, but pre-COVID-19 we were attending trade shows and other agriculture related events across Canada. We work with our provincial partners to help communicate our message as well. The basis of our messaging is simply awareness. Awareness on any level is the foundation of training. We start with that awareness level on whatever the topic is and we can build on that. Now that we are in COVID-19 times, we are attending Now that we are in COVID-19 times, we are attending some virtual events online and trying to do what we can with the times being what they are. We also have a few publications internally to give our members and to our outreach. We have a communication that goes out weekly to our members and whoever signed up for it, and we have our liaison that we send out quarterly, that is a more detailed report that we send out to our members. We have many provincial partners over and above the provincial safety associations. We work with Ontario Federation of Agriculture and the Canadian Roundtable for Sustainable Beef, we have some American partners, so we sit in on a lot of meetings and we are fortunate to have these great relationships with our partners and they value our opinion so that is a bonus. It is nice to be asked to sit at the table," said Gobeil.

TrainingIncidents and injuries can happen, even when there is a pandemic raging. That is why CASA still does all it can do set up safe training sessions.

"We got basically two different kinds of training. We have out in person training which as of right now is kind.

have our in-person training, which as of right now is kind

of on hold for obvious reasons, and then we have our online training available. We are doing what we can, we have actually developed a few new online courses based have actually developed a few new online courses based on the in person courses. For example, the firefighter grain rescue training. Normally that is a two-day course. The first day being one full day of in-class theory and then the second day being the practical. So, what we have done is for that theory part of that course we have created an online version now. It will never replace the in-person course, where you get that human interaction face to face with the instructor. I don't think any online course will ever measure up to that, but times being what they are, at least that is an online to keep neople distanced it is there least that is an option to keep people distanced, it is there to keep people safe, and still allow for some level of training," said Gobeil.

ing," said Gobeil.
Online training is great for some courses, but when it comes to other courses, you need to be hands on and even there, CASA is working to make it happen safely.

"We have kind of re-jigged the way we go about the practical version of that training for example, we normally have about 25 people for the training session, just because that is how many we can handle at a time to do the practical in a day, but we break that larger group down to smaller cohorts just to keep things manageable and keep things under the limit for COVID-19 restrictions. We want to keep people safe and we want to keep people distanced as much as we can. Of course for anything in-person, like the practical training, people are wearing their PPE as required. The other thing we do with those guys is often its people representative of mutual aid districts. So, they don't necessarily all work together, but we try to keep people from one town all together, that way you are not mixing people from different areas," said Gobeil. The smaller cohorts are set up to accommodate the

maximum allowed people in a group.

"In Manitoba we are not allowed any training right now

because we are in Code Red lockdown mode, but prior to that we were only allowed five people at a time, we had to break down the group to maximum four people because we got a trainer doing the evaluation as well. So it makes it a bit of a challenge," said Gobeil.

Train the trainer

The goal with these safety courses is not to certify in-dividuals, but to share the message of a safety mind-set. "Just this last spring we got our CASA tractor and farm machinery safety course converted from an in-person course to an online course. It is not a certification course. It is an awareness level course that a producer or an agriculture business can use as an add on to their own training component of their safety program. I think that is where we need to be as an association. I don't think we should be personally certifying people on equipment, because of the potential liability for CASA themselves, but also for the farm operator or the employer. The best program is the rarm operator or the employer. The best program is the one that they develop and the one that they train to, so again we are just providing the tools to get their guys to a competent level," said Gobeil.

This is why the CASA programs are usually geared to-wards those on the farm who are responsible for training

workers on certain machines.

'A lot of our courses are 'train the trainer' style courses. we have a network of consultants that we use as trainers they will go on the farm for the in class portion of the farm machinery course, they will go and train employees on the farm, or the employer of both. They will give the basic run down about what to look out for and some of the hazards, and we can do some practical training as well, but the thing is, none of us are experts on all types of equipment. The business or the farm itself, they know

the equipment that is on that farm and they need to train people on that specific equipment.

"In order to be a competent operator you need to be trained by a competent supervisor. The competent people are the ones that are currently using that equipment on the farm or in a business setting, so the supervisor level of complexes are the ones that are currently using that equipment on the farm or in a business setting, so the supervisor level of complexes are the ones that are currently. of employees are the ones we are gearing our courses to-wards, so that they can train their staff and workers to be competent operators," said Gobeil

Training in general machine and vehicle safety is the

focus.

"Of course there are going to be commonalties amongst all equipment, you are look at the theories behind tip overs and roll overs and things like that, almost all farm equipment has a power take off (PTO) shaft, so we can talk about the dangers of entanglement and how PTOs work and what to look out for and things like that, but we can't train to a certain make and model," said Gobeil.

The over arching goal remains information.
"In general across the board, all safety legislation espe

cially in regards to tractor usage and things like that, they talk about having competent operators. It is not necessarily that they need to be certified, they just need to be competent. The person to deem that operator as competent is the employer or direct supervisor," said Gobeil.

The message may sound simple, but if followed, it can save lives.

"I'd circle back to the 'stop think and act' mentality, and just to add on to that, I would just say, take your time. It always goes back to slow and steady wins every time. If you go into something a little bit reckless and hasty, it is going to bite you in the rear-end. You might be okay today and you might be okay the next time, but it is a number of the problem of the intervention. bers game really and it is just a matter of time before your number comes up and you don't want to win that lottery. Safe work is productive work," said Gobeil.

Food industry keeps adapting to changing times

Many Canadian regions will likely go through a second Covid-19 lockdown soon. And questions about the resiliency of our food supply chain are emerging again.

With potentially 60,000 new Covid-19 national cases a

day within weeks, it seems inevitable. Further lockdowns could well include even the Atlantic bubble.

The Covid-19 virus knows no borders and is now spreading like a wildfire. Toronto and Peel region are experiencing a second lockdown in nine months.

As news of a vaccine in reach gives hope, public health officials will naturally want to buy precious time and save

as many lives as possible

Rest assured though, this new cycle of lockdowns will

In March, the virus caused an abrupt standstill to our daily lives. Most of the food industry didn't anticipate such a shock. Two things happened that likely made the occurrences in the spring a once-in-a-lifetime event.

First, we saw the complete collapse of one major sec-

first, we saw the complete tonlarps of one major sector: restaurants. According to Statistics Canada, monthly food retail sales in Canada were approximately \$7.7 billion, versus \$5.3 billion for food service. By May 2020, the last month before restaurants started to reopen, food retail generated \$7.8 billion in sales versus \$891 million in

Since many food service outlets have changed their business models, sales will never reach such lows again. The other noteworthy factor is the consumer. Back in

March, many of us went to the grocery store without knowing when we would be allowed to go back again. That's one main reason why panic buying occurred. The virus was still quite foreign to us and most didn't know how public health was going to deal with the pandemic.

The pace of how new regulations are implemented is more manageable now. Decisions from governments now processors are now processors.

are also much more predictable.

Our behaviour has also changed. Before the pandemic, Canadians went to the grocery store slightly more than twice a week and spent just under 25 minutes per visit. Today, for the first time in more than 20 years, the average Canadian visits the grocery once a week and spends about the same amount of time per visit. Shoppers are more disciplined, focused and tend to stick to a predeter-



Sylvain Charlebois

mined plan without buying more than they need.

As we have all become better food inventory managers at home, better cooks and better gardeners, the Canadian average household is wasting less food than during the first few months of the pandemic, according to some re-

We're also much more methodological as shoppers. We

we re also much more methodological as shoppers. We just needed a pandemic to make that happened. Food e-tailing in Canada is also much more developed. In fact, since March, the experience of buying food online has changed dramatically. Initially, food orders took days to be delivered but now orders are processed within hours. Many processors, farmers' markets, restaurants and grocers have pivoted, and consumers have more options

Kraft Heinz is now operating a restaurant. Loblaws, Canada's number one grocer, now sells meal kits from restaurants. Loblaws went from a grocer to a food broker. According to a recent survey by Dalhousie University,

63.8 per cent of Canadians have ordered food online in some capacity over the last six months. The same survey estimated that 4.2 million more Canadians are ordering food online at least once a week than before the pandemic.

And when asked if they intend to order food online at least once a week after the pandemic, 49.4 per cent of Canadians said ves

nacians said yes.

So Covid-19 has helped create new habits.

Going into a second phase of lockdowns, the food industry is in a much better position. But some risks remain.

The border has remained fluid throughout the pandem-

ic. With a new tenant in the White House, we know the Joe Biden/Kamala Harris administration in the United States will have a different approach to the virus. Let us hope it doesn't involve compromising the operability of food supply chains on both sides of the border

Analytics are another issue. Food supplies are primarily determined by historical sales order data, not by actual consumption and market data. The disconnect between the two caused shortages in some foods and surpluses in others. So the need to digitize the food supply chain is greater than even. As the industry adopts different analytical methods and embraces the use of new technologies,

this will certainly help.

Food processing remains the Canadian supply chain's greatest weakness. The need for more near-shoring, local sourcing and domestic food manufacturing is much more

Costs of distribution in Canada and access for food manufacturers to domestic production of raw materials and packaging are major headwinds. This needs to change. The need for more investments in logistical infrastructure can't be underscored enough. Any trucking company will tell you that Canada urgently needs work in this area.

And finally, human capital.

Several incidences during the initial lockdown made the food sector look bad. First, the "hero pay" affair was mismanaged by grocers and was a complete public rela-

And with many closures in food processing and farming, particularly as a result of foreign workers succumbing to Covid-19 this summer, recruitment has become much more challenging. Food manufacturing in Canada has over 28,000 vacancies, the highest ever.

has over 28,000 vacancies, the highest ever.
We can invest and reskill all we want, but overly generous publicly funded financial aid programs for Canadians will only make our food supply chain more fragile and less resilient. The last thing the food industry needs is governments giving people incentives to stay home. Aid can be overdone, despite public health concerns. The food industry needs workers, desperately.

But we should still trust our food supply chain. The food industry has delivered and will continue to do so.

Dr. Sylvain Charlebois is senior director of the agri-food analytics lab and a professor in food distribution and policy at Dal-housie University.



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LAND DESCRIPTION: NW 6-13-29 WPM (Located in Manitoba) - No farm buildings but includes a partially completed hunting structure with 25ft Westwind travel trailer. Includes a four strand barbed wire fence, two dugouts and a water retention structure. Subject to Manitoba Habitat agreement

LAND DESCRIPTION: NW 1-13-30 W1 (Located in Saskatchewan) - Bare farmland with no buildings. Includes a four strand barbed wire fence and a dugout

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A package of information is available from the law office by email request to anique@mhmlaw.ca. Persons tendering are advised to conduct their own due diligence and verify all information and title status.

Tenders are to be submitted in a sealed envelope to the law office of:

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accompanied by a cheque for 5% of the tender payable in trust to the law firm to form the deposit on any successful tenders. Highest or any tender not necessarily accepted. Cheques for unsuccessful tenders will be returned. Please include name. mailing address and phone number. The successful bidder(s) will be required to complete an agreement covering terms and conditions of sale. Please note "John-

More information may be obtained by contacting Terry Johnson at 204-748-2615.

Tenders close Monday, December 21, 2020, at 12:00 noon. TERMS AND CONDITIONS OF SALE:

- 1. Closing to be on or before Friday, January 29, 2021.
- 2. In addition to the deposit, the balance of the accepted tender must be paid on or before closing. If the balance is not paid by closing or on terms accept able to the Vendor, the deposit may be forfeited as liquidated damages and not
- 3. Purchaser will be responsible for municipal taxes after December 31, 2020.
- 4. Purchaser shall be responsible for payment of GST or shall self-assess for GST.

Landmark study generates first genomic atlas for global wheat improvement

USask-led study sequences genomes of 15 wheat varieties around the world

BY USASK RESEARCH PROFILE AND IMPACT

In a landmark discovery for global wheat production, a University of Saskatchewan (USask)-led international team has sequenced the genomes for 15 wheat varieties representing breeding programs around the world, enabling scientists and breeders to much more quickly identify influential genes for improved yield, pest resistance

and other important crop traits.

The research results, just published in Nature, provide the most comprehensive atlas of wheat genome sequences ever reported. The 10+ Genome Project collaboration involved more than 95 scientists from universities and institutes in Canada, Switzerland, Germany, Japan, the U.K., Saudi Arabia, Mexico, Israel, Australia, and the U.S.

"It's like finding the missing pieces for your favourite puzzle that you have been working on for decades," said project leader Curtis Pozniak, wheat breeder and direcproject leader Curtis Pozniak, wheat breeder and director of the USask Crop Development Centre (CDC). "By having many complete gene assemblies available, we can now help solve the huge puzzle that is the massive wheat pan-genome and usher in a new era for wheat discovery and breeding."

Scientific groups across the global wheat community are expected to use the new resource to identify genes linked to in-demand traits, which will accelerate breeding

"This resource enables us to more precisely control breeding to increase the rate of wheat improvement for the benefit of farmers and consumers, and meet future food demands," Pozniak said.

One of the world's most cultivated cereal crops, wheat plays an important role in global food security, providing about 20 per cent of human caloric intake globally. It's estimated wheat production must increase by more than 50 per cent by 2050 to meet increasing global demand.

In 2018 as part of another international consortium, US-

ask researchers played a key role in decoding the genome for the bread wheat variety Chinese Spring, the first complete wheat genome reference and a significant technical milestone. The findings were published in the journal Sci-

ence.
"Now we have increased the number of wheat genome sequences more than 10-fold, enabling us to identify genetic differences between wheat lines that are important for breeding," Pozniak said. "We can now compare and contrast the full complement of the genetic differences that make each variety unique."

Nils Stein of the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) and project co-leader from General variety of the Chippen of t

many said, "Given the significant impact of the Chinese Spring reference genome on research and application, it is a major achievement that just two years later we are providing additional sequence resources that are relevant to wheat improvement programs in many different parts

The 10+ Genome study represents the start of a larger effort to generate thousands of genome sequences of wheat, including genetic material brought in from wheat's wild

The research team was able to track the unique DNA signatures of genetic material incorporated into modern cultivars from several of wheat's undomesticated relatives by breeders over the century.

"These wheat relatives have been used by breeders to improve disease resistance and stress resistance of wheat," said Pozniak. "One of these relatives contributed a DNA segment to modern wheat that contains diseaseresistant genes and provides protection against a number of fungal diseases. Our collaborators from Kansas State University and CIMMYT (Mexico) showed that this segment can improve yields by as much as 10 per cent. Since

breeding is a continual improvement process, we can continue to cross plants to select for this valuable trait."

Pozniak's team, in collaboration with scientists from Agriculture and Agri-Food Canada and National Research Council of Canada, also used the genome sequencees to isolate an insect-resistant gene (called Sm1) that enables wheat plants to withstand the orange wheat blos-som midge, a pest which can cause more than \$60 million in annual losses to Western Canadian producers.

"Understanding a causal gene like this is a game-changer for breeding because you can select for pest resis-tance more efficiently by using a simple DNA test than by manual field testing," Pozniak said.

The USask team also included the paper's first author Sean Walkowiak (formerly with Pozniak's team and now with the Canadian Grain Commission), computer scien-tist Carl Cittwin, who developed visualization software

tist Carl Gutwin, who developed visualization software and a user-friendly database to compare the genome sequences, and Andrew Sharpe, director of genomics and bioinformatics at the USask Global Institute for Food Security, who did sequencing work through the Omics and Precision Agriculture Laboratory (OPAL), a state-of-the-

art laboratory that provides genomics, phenomics and bioinformatics services.

The 10+ Genome Project was sanctioned as a top priority by the Wheat Initiative, a co-ordinating body of international wheat researchers.

"This project is an excellent example of co-ordination



Curtis Pozniak, wheat breeder and director of the USask Crop Development Centre.

lege of Agriculture and Bioresources is known for research

across leading research groups around the globe. Essentially every group working in wheat gene discovery, gene analysis and deployment of molecular breeding technologies will use the resource," said Wheat Initiative Scientific Co-ordinator Peter Langridge.

Canadian funding came from the Canadian Triticum Applied Genomics (CTAG2) research project funded by Genome Canada, Genome Prairie, the Western Grains

Research Foundation, Gov-ernment of Saskatchewan, ernment of Saskatchewan, Saskatchewan Wheat Development Commission, Alberta Wheat Commission, Viterra, Manitoba Wheat and Barley Growers Association, and the Canada First Research Excellence Fund through USask's Plant Phenotyping and Imaging Research ing and Imaging Research Centre (P2IRC) initiative.

"This project is a prime example of how genomics can support increased re-silience in food production and strengthen Canada's export leadership," said Genome Canada President and CEO Rob Annan.

"Deploying genomics to adapt agricultural produc-tion to climate change, address food and nutritional insecurity, and improve crop health is good for farmers and consumers, and our economy will see tangible returns from this research. Genome Canada is immensely proud of the exceptional work by the Canadian researchers and their international collaborators, which underscores the potential of genomics to make a positive impact on the lives of Canadians and others around the world."

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NRGene, which has an of-fice in Saskatoon, constructncein Saskatoon, constructed the genomic assemblies. A complete list of international funding partners is available here: http://www.10wheatgenomes.com/funders/ com/funders/

About the University of Saskatchewan's Crop Devel-opment Centre (CDC): The Crop Development Centre in the USask Col-







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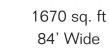
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Kipling Fire Department hosts grain rescue training

*** Continued from front

"As a fire fighter I have been in the fire services for 30 years. Half of it has been on the volunteer side of things and the other half I have been full-time. I have been the full-time chief for 14 years in Melville. I am a certified fire fighter instructor, so to do this instruction falls into that category again, training fire rescue personnel."

Morgensen said the firefighters usually pick up quickly

on all the training.

"Everybody is here for a reason," he said. "They come

in ready to put the theory that they have learned into practice.

"They are ready to learn new things so, again, they can help keep themselves be safe and/or pass it on to family

members or other people too.
"They are here for a reason. To learn things and see the rescue equipment and how it works. Everyone this weekend was here to learn."

The training session was sponsored by Richardson Pioneer, Viterra, Flatland Plumbing & Heating, Farm Credit Canada, and Parrish & Heimbecker.



Firefighters Left: training on top of the grain rescue trailer provided by CASA.







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The benefits of having multi-skilled farm employees

BY RICHARD KAMCHEN

Matching the right person with the right job on the farm can dramatically affect a farm's success and

profitability.

"Never put a square peg in a round hole," says farm advisor Jim Soldan, president of the Family Furrow.

He encourages managers to become familiar with their employees to help direct them to positions they're most likely to enjoy and at which they

will succeed.
"If they like what they do, they're going to do a good job," Soldan says.

The advantage to assigning someone to one job and never moving them is the proficiency that staff develop can reduce errors, waste and accidents, according to Canadian Agricultural Human Resource Council's senior HR advi-sor, Jennifer Wright. Offering employees the

opportunity to try their hand at various positions over time creates flexibil-

But it can also create a weak link, Soldan points out. Besides the possibil-ity of boredom setting in, there's also the risk of having no one else to take over



should that person take ill or leave, he says.

Offering employees the

opportunity to try their hand at various positions creates flexibility, which can contribute to keep-ing employees engaged as they learn different skills and have some variety in their tasks.

CREATING OPPORTUNITIES FOR STAFF

Saskatchewan farmer and consultant Kristjan Hebert says jobs in agriculthe same as jobs in other sectors—with opportunities for advancement and learning new skills.

"In my mind, it shouldn't be any different working for me versus working for somebody in town," Hebert says.

His farm has three levels of operators: Level support workers at an entry-level, Level 2 who are trained to work some equipment and do some training and Level

3 employees, who have broader experience on the farm, have moved around among jobs and can run all equipment.

The system appears to work for Hebert and his staff. Employee retention is high on his farm, he says, and workers know what's required of them at each level and how to move up the ladder.

PLAN FOR HR

With so many details to think about on the production and operations side of every farm, it can be easy to overlook why human resources is important, Wright says.

"An HR plan is the foundation that allows you to understand your talent needs, and actively reach out to find the people who can deliver those skills and abilities," she says.

BOTTOM LINE

BOTTOM LINE
While it's tempting to
assign a farm employee
to a job they enjoy, moving staff around to various
tasks helps keep them engaged, learn new skills and
advance in the farm operation. It also helps ensure tion. It also helps ensure other staff are trained to take over a job if someone is sick or leaves the opera-



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14	MONDAY	BUTCHER SALE	9 A.M.
16	WEDNESDAY	REGULAR FEEDER SALE	9 A.M.
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21	MONDAY	BUTCHER SALE	9 A.M.

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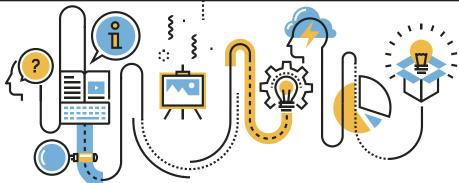
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USask researchers partner with industry to make food and pipelines safer, agriculture smarter

BY USASK RESEARCH PROFILE AND IMPACT Backed by \$2 million from the federal government and partner organizations, University of Saskatchewan (USask) re-Offiversity of Jaskatchewalt (Usask) re-searchers aim to make Arctic pipelines stronger and safer, protect the food sup-ply, and improve crop processing with cutting-edge technology. Five research teams have been awarded

a total of \$1.08 million from Canada's Nat-ural Sciences and Engineering Research Council (NSERC) to lead the wide-rang-ing NSERC Alliance research projects. As well, partner organizations are contributing a total of \$600,000 in cash and \$340,000 in in-kind contributions to the projects.

in in-kind contributions to the projects.
"This major partnered investment will support exciting USask research projects that address complex challenges, create environmental and economic benefits, and contribute to Canada's long-term competitiveness," said USask Vice-President Research Karen Chad. "These collaborative projects will also train new researchers in areas important to Canada and our partners." and our partners."

and our partners."

The new research projects with combined NSERC and partner funding are:
Developing high-strength, cold-tolerant steel for pipelines-\$770,000

USask engineering researcher Jerzy Szpunar—working with EVRAZ Inc. and CanmetMATERIALS Natural Resources Canada—will develop a new process for manufacturing high-strength steel adapted to low-temperatures (-45oC) for pipelines in northern Canada and Arctic areas around the world. Pipelines in cold

areas around the world. Pipelines in cold regions face challenges such as terrain frozen by permafrost or gouged by sheets of ice. The research could improve the safety of gas and oil transport, open a new market for Canadian manufacturers, and reduce the environmental damage in the case of a pipeline failure in a subarctic environment.

Using biotech to make animal feed processing cheaper and more efficient-\$697,000

USask veterinary researcher Dr. Matthew Loewen-part-nering with biochemist Michele Loewen at the Universi-ty of Ottawa and Western Grains Research Foundation, Saskatchewan Pulse Growers, and Botaneco Inc.—will use cutting-edge biotechnologies to tweak the chemical structures of two enzymes important for removing bitter-tasting tannins from animal feed. The results will lead to more efficient and cheaper bioprocessing, yielding more palatable and safer animal feeds. The research could have long-term applications for making new plant-based prod-

ucts for human consumption.
Improving anti-microbial use practices for the beef industry-\$430,500

Working with the Beef Cattle Research Council (BCRC) and Alberta Beef Producers, USask veterinary researcher



USask research aims to improve anti-microbial use practices for the beef industry

Dr. Cheryl Waldner, who holds the NSERC/BCRC Industrial Research Chair in One Health and Production-Limiting Diseases, will examine changes to antimicrobial use and resistance in cow-calf operations resulting from recent federal regulations requiring veterinary prescriptions for the sale of all medically important antimicrobials for use in food animals. The results will inform beef industry stewardship practices that minimize antimicrobial resistance and support environmental sustainability, protecting public health, animal health, and animal welfare.

Using nanotechnology to decontaminate egg-

Using nano shells-\$110,600

Parthering with the Canadian Poultry Research Council and Saskatchewan Egg Producers, a multi-disciplinary USask team led by Lifeng Zhang (engineering), Shelley Kirychuk (medicine), and Karen Schwean-Lardner (animal and poultry science) will develop a chemical-free, nanotechnology-based surface decontamination method

for treating eggshells to control microbial contamination. The results will improve food safety and reduce environment impacts.

Making soil management smarter-\$62,600

To precisely manage their crops, producers need detailed information about how soil properties vary across the field. How much information is the right amount? Soil the heid. How much information is the fight amount? Soil scientist Angela Bedard-Haughn and her team, working with CropPro Consulting, will combine machine learning, predictive soil mapping techniques, and strategic field soil sampling to determine a cost-effective soil sampling strategy. The results could help make precision soil mapping widely accessible to producers.

More information on NSERC's Alliance grants is available https://www.nserc-crsng.gc.ca/Innovate-Innover/alliancealliance/index_eng.asp





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Agriculture sector can play a critical role in Canada's economic recovery

CFIB urges Agriculture Ministers to fix Business Risk Management programs & deliver real results

Farmers are poised to play a key role in Canada's economic recovery, according to the Canadian Federation of Independent Business (CFIB)'s Small Business Recovery Dashboard. That's why in advance of the Federal-Provincial-Territorial (FPT) agriculture ministers' virtual meetings held on November 20 and 27, CFIB urged Agriculture Ministers to focus on policies that will help drive growth in the agriculture and agri-food sector so that it can perform to its potential.

"Almost eight months have passed since the first lockdowns and we know far too many small businesses across the country are still left struggling to survive," said Marilyn Braun-Pollon, CFIB's vicepresident of Western Canada and Agribusiness. "But the agriculture sector has fared somewhat better than many sectors. Thankfully, due to the essential nature of their operations, many farms and small businesses serving the agriculture sector were able to keep operating and were not subject to mandatory government shut-

According to CFIB's regular update of its Small Business Recovery Dashboard, its Small Business Recovery Dasnobard, 66 per cent of Canadian businesses are fully open, 42 per cent are fully staffed, but only 28 per cent are making normal sales, compared to the agriculture sector, where 78 per cent are fully open, 53 per cent are fully staffed, and 56 per cent are making promaled. normal sales.

"While these statistics paint a more optimistic picture for the sector, it doesn't hide the fact that some farms and small businesses took it on the chin during the pandemic. We also know many are still worried about the economic repercussions of Covid-19 and the uncertainty of a second wave," explained Virginia Labbie, CFIB's



MARILYN BRAUN-POLLON, CFIB'S AND AGRI-BUSINESS

senior policy analyst, Agri-business. "We hope the ministers will be discussing polirices this week that will help improve the bottom line of our producers including finally coming up with some meaningful improvements to Business Risk Manage-ment Programs (BRM) after years of re-

CFIB recently sent a letter to all FPT Agriculture Ministers outlining its farm members' priorities:

- Address the inadequacies of BRM programs and ensure they are timely, respon-
- sive, effective and transparent.

 Create a more competitive tax environment (e.g. freeze CPP premiums and

federal carbon taxes, as well as exempt natural gas, propane and aviation fuel used for farming activities).

• Make it easier to sell agri-businesses to

- family members.

 Reduce red tape for farmers.
- · Address the shortage of labour in the
- agriculture sector.
- Introduce a Grocery Code of Conduct (the unbalanced and unfair power relationship between retailers and smaller grocery suppliers must be addressed).

 • Focus on trade and market access for

all Canadian agri-food products.

"We encourage the Agriculture Minis-ters to tackle these important issues. Fur-ther delays in BRM enhancements cannot ther delays in BKM enhancements cannot be put off until the next in-person meetings in July 2021 or the next new policy framework in April 2023," concluded Braun-Pollon. "Focusing on policies that ensure farmers remain competitive will help the agriculture sector play an important ratio Compatity and Compatity of Compatity and Compatity tant role in Canada's economic recovery," concluded Braun-Pollon.

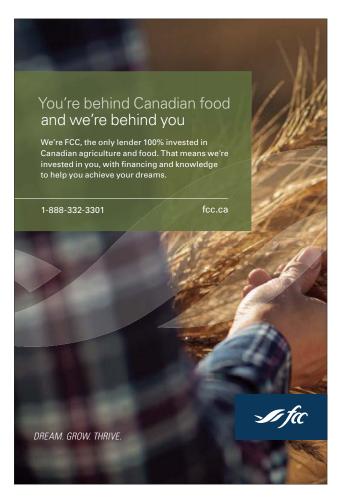
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