A PEAVEY INDUSTRIES PUBLICATION | FALL 2019 CONTRACTOR FALL 2019

VERTICAL FARMING



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GREETINGS AESSAGE FROM PEAVEY INDUSTRIES LP PRESIDENT AND CEO, DOUG ANDERSON A MESSAGE FROM PEAVEY INDUSTRIES LP **PRESIDENT AND CEO, DOUG ANDERSON**

all 2019 is upon us – and along with this new season, harvest and Thanksgiving comes our latest issue of "Connected to the Land". In this issue, we again bring you articles covering a variety of industry topics, farm and family health & safety, and lifestyle interests (check out the tasty 'rhubarb cobbler' recipe on page 34!).

Among other things, we specifically talk about vertical farming, farm and ranch winterizing, hearing protection on the job and how urban and rural families can lighten the effects of technology overload. These topics and others are found alongside an interesting feature highlighting a current rural concern: the wild boar population boom on the Prairies - what experts know, and the efforts being put forth to curtail it.

With our customers fully in mind, it is our goal to offer 'something for everyone' within the pages of "Connected to the Land". We appreciate your suggestions as to how we can continue to effectively connect with your interests and lifestyle. Send your feedback to feedback@peaveyindustries.com.

Doug Anderson

Photo by Drew Kenworthy.

DON'T MISS AN ISSUE! Our previous magazines are online at peaveymart.com

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Peavey Industries is proudly 100% Canadian and employee owned. For over 50 years our stores have worked to build lasting relationships with our loyal, rural customers and strong ties within their communities. Now with 92 total stores across five provinces – the Peavey Mart, TSC and MainStreet Hardware brands combine to make us "Canada's Largest Farm and Ranch Retailer".

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MARCH

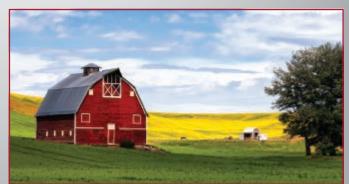
Peavey Industries Community Agricultural Grant

The 2020 application will be available at the end of March for download from either

www.peaveymart.com or

www.tscstores.com. Organizations are urged to download the application as early as possible in order to take full advantage of the time available for collation of their grant submission. Deadline to submit applications is May 31, 2020 and they must be emailed or mailed any time in advance of this date.





CONGRATULATIONS TO OUR COMMUNITY AGRICULTURAL GRANT



Thank you to all the organizations that submitted to our 2019 Community Agricultural Grant program; we received over 80 applications spanning five provinces, from British Columbia to Ontario. Projects tackling complex issues, with innovation and resilience, were the ones to quickly catch our attention.

As this issue of Connected to the Land goes to press, we are not quite ready to announce which organizations will be awarded 2019 grants through this program; however, by the time you read this all applicants will have received notification, one way or the other, as to the success of their application.

We work hard to foster strong, healthy relationships with our communities and want to continue this practice through our grant program. Next year's application will be online as of April 2020, and we can't wait to see what our neighbours are working on.

STRENGTHENING COMMUNITIES ACROSS CANADA



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THE IMPORTANCE OF USING HEARING PROTECTION

Story by Dan Kerr.

efore we got our farm, I had purchased a sweet little lawn tractor that made less noise than a sewing machine. With winter coming, it was time to cover up and a cab was purchased and installed. Along with the protection from the elements came an increase in noise and a ringing that developed in my ears to the point that hearing protection was now part of my equipment, while in use.

As I worked on the farm with various tools, my concern for hearing protection drew me to look up Patricia Van Hoof, through our local hearing society. Van Hoof is an audiologist in Sault Ste. Marie, with offices in Blind River and Elliot Lake. Van Hoof is a graduate of the University of Western Ontario with her Masters in Audiology, and upon request, attended my farm for some testing.

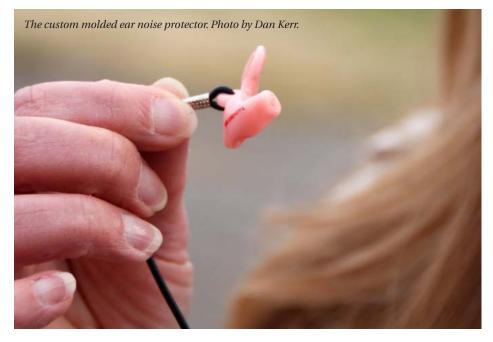
Upon arrival I displayed my collection of hearing protection, all of which are the muff variety – or circumaural, as the professionals refer to them. There were some markings on the muffs which I questioned about, none of which made any reference to audiology at all. If the equipment is approved it will display the Underwriters Laboratories logo and it's Noise Reduction Rating (NRR). NRR is what the equipment is rated at, which is interpreted by the following: • if the rating is 30 and you are subjected to a noise level of 90, your actual exposure would be 60 dB of sound. You subtract the rating from the actual level.

The allowable steady noise level for an eighthour time as set out by the Canadian Federal Noise Regulations is 87 dB. Quebec allows 90 dB and all other Provincial regulations are 85 dB.

As there are numerous choices in design, I asked for her preferential rating: "I prefer custom hearing protection, which are expensive and have to be personally made from an ear mold impression to fit the ear canal. They allow conversation to be heard, but block out loud sounds up to 24 dB of reduction. This allows the protection to be fitted at the start of a job and removed at the end, rather than constantly fitting and removing throughout the day" Her next choice are the muff type, which are also available, fitted with similar electronics allowing conversation to be heard while blocking out loud noise. These are commonly used by shooters, and do not require any custom fitting. Her last preference are the ear plug type, which rarely are fitted properly, and if removed and refitted, allow the risk of contamination entering the ear canal.

I have a collection of the standard muff type, and have found that they almost all differ in comfort and fit – and that the strongest and best fitting of these have a metal band holding them in place.





The collection of muffs that I have are spread out, hanging in the welding shop, a designated pair in the tractor, attached to my arborist helmet and on all of my woodworking equipment, so there is no excuse for me not to wear it. This is cheap insurance to prevent the development of deafness and having to purchase hearing aids down the road, which are significantly more expensive than a shop full of ear muffs.

The inscription on my ear muffs turned out to be manufacturing notes, and there were no NRR indicated. Van Hoof advised that if the manufacturer indicates the NRR on the unit, they can be held accountable. As all equipment is tested under laboratory or ideal conditions, it is impossible for a manufacturer to know if their safety equipment is being worn or fitted properly. For example, are muffs placed over the arms of glasses or a hat or both? Any of these situations would significantly alter their effectiveness.

Van Hoof brought with her a decibel meter, and she put it to the test on the inside of



dB meter inside a running tractor wing the doors closed. Readings may vary with different tractors. Photo by Dan Kerr.

my tractor cab. Outside, with the engine at 1500 rpm (which is close to where I run it), we took readings which confirm my original observation:

- outside cab = 78.0 dB
- inside cab door closed = 85.4 dB

As I am commonly in the cab cutting grass for 4 hour durations, the ear muffs will provide adequate needed hearing protection.

Note that when you add equipment, you add more decibels to the equation – so instead of being on the border for my tractor, it would put the decibels well over the limit.

The cab is also a factor. The harder/smoother the surface, the less sound it will absorb, so it reflects and then reverberates, producing a louder environment. Blown foam, plastic covered fiberglass ceiling tiles and egg cartons are three products that I have used over time to deaden noise: they all work well, are light, easy to find, easy to work with, and cheap to acquire.

The tractor isn't the only thing I use around the farm, so while I had a dB meter on hand, I tested a few other tools:

- shop vacuum=74.8
- shop vacuum as dust collector and radial arm saw=94.4
- both while cutting wood=98.6
- air angle drill just running=101.2
- hand held 5" grinder just running=93.0
- air sheer just running=102.3
- 7 1/4" skill saw just running=97.7
- air compressor=102.0

With just these few you can see that all but one is over the 85 dB limit, and remembering that each time you add a variable or work load along with the tool you add to the dB rating, the numbers add up.

A friend of mine advised that the colour of the muffs indicate their dB rating. This is not so. Colour has no bearing, other than a manufacturer's or consumer's preference. The muffs that I purchased had a 25 dB rating on the packaging, which is typical. At the end of the day, it's the dB rating that makes one pair better than the next, not the colour.

The only piece of equipment that doesn't have muffs hanging on it is my floor belt sander, which I turned on before fitting my muffs one day and the sander ate them!

Dan Kerr learned photography in his dad's darkroom, then progressed to providing photos and articles for magazines, and crime scene photographs for the Ontario Provincial Police, as a forensic identification officer.



Brent Elliott, 10 year manager of the Sault Ste Marie TSC store shows off their display of hearing protection including adult muffs from 23-26 dB, kids muffs at 23 dB, foam disposable ear plugs at 32 dB & a plastic version at 27 dB. Photo by Dan Kerr.



THE FUTURE OF FARMING HAS PRATFALLS AND POTENTIAL

Story by Alina Martin.

remember the day I pulled the first radish out of our farm, The Harvest Hub. It was vibrantly purple, glorious in size, fresh, crunchy, and juicy. Frankly, it was perfect. "Easter Egg" radishes, the seed package said. All of a sudden, I had pounds and pounds of radishes and knew instantly that the indoor soil-based farming equipment invention that my husband had created – worked. This was our first real crop grown in the dead of winter, in our heated garage. I rejoiced, and so did my neighbours I'm sure. They all probably thought we had an illegal (at the time) cannabis operation ongoing. "No, just vegetables," I remember saying to one of them.

Our farming adventure had started about a year earlier, with a confession from my husband, "Honey, I want to become a farmer!" I'm sure you can appreciate my astonishment when my commercial real-estate husband professed in the middle of his career that he wanted to change, and grow things. He wanted something that spoke to his soul and to our daughter's future, he said. He wanted to become a farmer. My gut reaction: "yeah right." Little did I know at the time that this was the beginning of our future, and the beginning of a journey that would change us. It would change me, deeply. What is indoor vertical farming? Wikipedia says, "Vertical farming is the practice of producing food and medicine in vertically stacked layers, vertically inclined surfaces and/or integrated in other structures (such as in a skyscraper, used warehouse, or shipping container). The modern ideas of vertical farming use indoor farming techniques and controlled-environment agriculture (CEA) technology, where many environmental factors can be controlled. These facilities utilize artificial control of light, environmental control (humidity, temperature, gases...) and fertigation. Some vertical farms use techniques similar to greenhouses, where natural sunlight can be augmented with artificial lighting and metal reflectors."1

While this is all true, most vertical farms today utilize hydroponic or aeroponic equipment to grow their plants. Think of growing plants in water – hydroponically – or using a combination method of water/mist and oxygen and nutrients – aeroponically. The possibility of urban-farms located in old redundant warehouses in the middle of cities are now a reality. What about roof-top gardens or greenhouses? Take a look at Lufa Farms: their website says "We built the world's first commercial rooftop greenhouse on an industrial building in Montreal, Quebec, to prove that high-yield, year-round farming is a smarter, more sustainable, and commercially viable way to feed cities." This company is doing amazing work transforming cities in Canada, and feeding us at the same time.

The possibility of repurposing over-produced land or building on under-utilized land, into indoor food cultivation facilities, in areas where you've traditionally not be able to grow, could change our world. Imagine getting local produce from right around the corner, in the dead of winter? Imagine having farmers pick produce at its prime, resulting in fresh ingredients and eating it at the peak of its vitamin density? This is not to mention the reduction of pesticides in indoor vertical farms, a benefit that further solidifies that growing food locally, closer to home, is just a better idea and more sustainable overall. According to the international development organization Development and Peace, the average meal travels 3000 km to our plate. How can that be ok? According to a Penn State University study done in 2005, spinach in particular can lose up to 90% of its vitamin C content within 24 hours of harvest. Imagine, what food value week-old spinach in fancy plastic bags contains? It probably is not a lot.

Why is it that we all dislike the flavour of a carrot that comes from the grocery store? Because it doesn't taste like the ones you pulled out of grandma's garden. Remember those carrots? Yummy. That's the way vegetables should taste.

While companies such as Browery, Plenty, The Growcer, AeroFarms, DeepWater Farms and TruLeaf are all growing plants in their vertical farms, they are primarily using hydroponic or aeroponic equipment to do so. While this is an incredibly efficient way of growing, it's quicker, creates more nutritionally dense product, limits the use of pesticides, and reduces watering at an astonishing rate compared to traditional agriculture. The limitation exists in the fact that these farms can really only grow a few products. While it's a step towards food sustainability and gives access to product in food deserts such as northern Canada (or places like the Caribbean, where a large portion of food is imported), it cannot solve the largest issue of how are we going to feed our planet when it has nine billion people on it. Why? Because you cannot grow deep-root vegetables such as potatoes, carrots, beets and others in hydroponic or aeroponic farms. That's a challenge in its own right.

But, the biggest challenge with indoor vertical farming is this: they are desperately costly to start and operate. This means that the product being produced today is expensive. Remember when organic produce always meant higher price tags? That's the problem facing indoor

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Untreated seeds for organic growing, n

vertical farmers today. This is not to mention securing stable supply chains, finding the right people to operate these farms as it requires a different skill set, and the capital to give these businesses a solid runway for success. Remember, farming in Canada is subsidized by the government – are we going to treat vertical farms the same? Technologydriven agriculture is still agriculture. It's just reinvented agriculture.

There are already some "causalities on the highway," in terms of vertical farms failing. Take a look at Modular Farms in Canada, which filed for bankruptcy earlier this year... or Plantagon in Europe. Plantagon faced supply chain issues. Their Vice President, Owe Petterson, cited cash flow problems, and indicated it had been difficult to attract enough capital to remain financially sustainable.

So, what does the future of farming look like, not just in Canada but around the world? A few fallen farms doesn't mean that vertical farming is impossible: it just means investors and entrepreneurs entering the space need to understand the risks, and shore up these areas if they are to have a chance at surviving and changing the agricultural world.

The reality is that by 2050, there will be nine billion people on our planet. We currently don't have a way to feed them. That's a problem we need to solve, and technologydriven agriculture can help contribute towards a solution. I don't think you'll see vertical farming replace things like commodity crops, but vertical farming has created a new category of agriculture. It's not meant to compete with traditional agriculture, but to pave a new path for different ways of cultivation. I think our future is bright and I'm certain our children will thank us for all the work we are doing in this space for years to come – even though it's a daunting task.

¹ <u>https://en.wikipedia.org/wiki/Vertical</u> <u>farming</u>

² https://thespoon.tech/what-plantagonsbankruptcy-could-tell-us-about-the-future-oflarge-scale-vertical-farming/

Alina Martin is a serial entrepreneur and cofounder of The Harvest Hub. A manufacture of indoor soil-based vertical farming equipment. She has a deep passion for building businesses, food, cooking, travelling and writing. She can be found at <u>amartin@theharvesthub.ca</u>.

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BOOSTING SOIL HEALTH AND ORGANIC MATTER PAYS DIVIDENDS

over crops are spreading, as farmers see how growing an extra crop in a year can help them cut their environmental footprint and improve their land. A cover crop doesn't always show a profit the year it's grown, but the practice is winning converts, even in areas where drought is a constant threat – because they boost soil health, increasing soil organic matter, and helping to beat pests.

Cover crops – crops grown to be left in the field, possibly grazed by livestock – are a traditional tool of organic farmers. The right cover crop can be used to prevent erosion, help manage water, build soil organic matter and restore fertility. They can also fight weed, disease and insect issues, as well as helping wildlife and boosting biodiversity. But it is important to grow the right crop, seeded at the right density, at the right point in your rotation.

Plants grow soil. Soil is not just ground down rock to anchor plants and some decaying roots for earthworms to eat. Soil is teeming with life, most of it very small. These microorganisms feed on nutrients that plants make from CO_2 , water and the sun's energy. The plants leak some of those nutrients into the soil from their roots. Other microbes and slightly bigger creatures feed on those microbes and distribute the nutrients through the soil. Any time soil is warm and moist, its life goes on... but without living plants delivering fresh products of the sun's energy, soil resources are being diminished.

Plants leak products of photosynthesis from their roots into the soil, making a zone around

them rich in food for soil microbes. Microbes build soil organic matter that holds and slowly releases moisture, and binds together soil particles so they aren't easily eroded by wind or raindrops.

Soil with just 1% organic matter could hold just a quarter inch of water in its top 6 inches. Increasing that to 5% boosts moisture capacity to a full inch. That's a big difference in potential crop growth.

Some plant exudates stimulate mycorrhizal fungus to grow right into the plant's roots to directly absorb nutrients and deliver plant nutrients, like phosphates. The association makes plants more resilient to stress and root disease. Other plants are invaded by rhizobia bacteria that transform nitrogen from the air into a form plants can use. In the shelter of plant roots, some are effective enough to provide for generations of plants in a few months.

Farming tends to bend the natural state of the land to our needs, tackling each difficulty with tools and technology. We used a stick to put the first seed in the round, then a hoe, now an air-drill or a vacuum planter. If we have a weed problem or an insect pest, we look for a simple solution. Growing numbers of people are seeing these often necessary, short-term answers as dealing with the symptom, rather addressing the real cause.

They're looking to nature for tools. In a natural environment, plants are growing, supporting soil life, and every day there's enough heat and moisture in the soil. A cover crop can feed soil Story by Helen McMenamin.

life, without abandoning the modern tools we need to produce food for a hungry world. They may use soil moisture that's in short supply, but improved water infiltration can more than compensate for the loss. In balancing the cost of seeding cover crops against the long-term, these benefits can be more challenging.

Cover crops can lessen risks for main crops. Problem insects can do less harm when their favourite crop is mixed with other plants, so that their natural enemies have an advantage over them. The pest becomes food for a farmer's friends, their predators and parasitoids. In a competitive cover crop, tough weeds can be at a disadvantage.

Deep, heavy taproots like sunflowers or some brassicas break up compacted soils. They also scavenge for nutrients – including lime – that have leached beyond the reach of most crops, bringing them higher in the soil profile where crops can access them.

The right cover crop has to suit your rotations or location. "Ask a lot of questions of anybody offering cover crop seed mixtures and if you don't get knowledgeable answers, call somebody else," advises Grant Lastiwka at Alberta Agriculture, who has looked at many cover crops used for grazing and seen successes and failures. Complex cocktails can bring in diversity, so no pest is overly favoured and most elements of the mix will do well in most situations – but be wary of mixtures that include any plant that could be a bridge to a disease issue for a crop in your rotation. The recommended rotation interval for peas and lentils is now six years because of root disease – not something you want to extend for a cover crop. A balance of carbon and nitrogen sources (think straw and protein for a cow) is best for microbe activity.

GRAZING

Cattlemen searching for lower cost ways to feed cattle have been leaders in cover crop use. Dependable electric fencing has enabled graziers to have animals harvest crops – often mixes of cereals – where they're grown. In areas with dry winters, the self-propelled, fourlegged harvesters can graze swathed crops even through deep snow as long as there isn't a heavy ice crust. The animals spread their manure and urine on the fields. It's a less costly feeding system than delivering baled hay or silage to the animals. And since ruminant animals "waste" maybe 80 percent of their feed as manure, those nutrients are returned to the field where the crop was grown, boosting soil health.

Biodiversity and wildlife – birds especially – are in crisis. As well as helping future crops, reducing erosion and improving soil quality, a cover crop can support food webs we may not see, but are important to biodiversity and the wildlife we want and need.

One obvious link is between ground-nesting birds like waterfowl and grassland songbirds – some of our most endangered species – and overwintering crops like winter cereals. In spring, birds and their nests have safe cover undisturbed by machinery, and a better chance of raising their young successfully.

Helen McMenamin is a freelance writer living in Lethbridge. Since coming to Canada for graduate studies, she has raised pigs, wheat and canola as well as writing and editing for several magazines and science journals. She is passionate about farming and the environment.





FARMERS AND RANCHERS WORK HARD IN THE FALL TO PREPARE FOR SPRING

et's face it...Canadian winters are arguably the harshest in the world. In parts of the northern prairies, it can get down to minus 20° for weeks on end. The ground freezes solid, even in Southern Ontario.

Growers and producers across the country generally use the time after harvest is completed to prepare for spring. Jake Leguee, a Saskatchewan farmer, and Larry Thomas, an Alberta cattleman, each have unique protocols that they follow.

Jake Leguee grows wheat, canola, peas, oats, lentils, soybeans, and other crops near Weyburn, Saskatchewan. He holds a BSC in Agronomy, from the University of Saskatchewan and is a director for the Saskatchewan Wheat Development Commission.

"After harvest, it's very important to get rid of weeds, typically perennials like dandelions and thistle," Jake said. "In the spring, established weeds are hard to deal with. So post-harvest weed control is one of our more important fall jobs.

Grain farmers also must cope with straw left in the fields after harvest. In spring, straw residue can be difficult for seed drills to penetrate, so Jake does some light tillage in the fall to chop up that residue and make spring seeding easier.

"We generally avoid tillage, but sometimes do a little just to bust up that straw," he said. To reduce the spring workload, Leguee Farms also applies some of its crop production inputs in the fall.

"We spread sulphur, because it breaks down slowly over the winter, and sometimes we also apply phosphorous, because we're seeing increased yields when we do."

Preparing equipment for winter is also a major task. After harvest, combines are covered in straw and coated with dirt, grain, and all the other crops the Leguee farm harvests. Leguee Farms uses an industrial air compressor to remove the surface dirt and then washes the machinery thoroughly so it can be worked on in the shop to maintain warranties and prolong service life. The farm's three combines are sent to a local dealership to make sure all warranty requirements are satisfied.

Larry Thomas is Manager - Environment and Sustainability for the Canadian Cattlemen's Association. He holds a Master's in Animal Science, specializing in range nutrition, from the University of Saskatchewan and represents Canadian cattle producers on many international sustainability committees.

Larry said five things should be done in the fall to ensure good animal care and profitability.

"Producers who grow their feed grain and forage should send samples to a lab to determine their energy levels and total digestible nutrients," he said. "Determine the body condition that will maximize production for each class of animal, then provide the

Story by Richard A Nichols.

amount of feed that lets you reach your production target for each."

Because beef is a tight margin business, Larry also suggests testing for pregnancy in the fall. If a cow is not pregnant, it might be best to sell it.

"I also advise producers to check with local vets to find out what parasites are present in the region and consider pre-treating for those parasites," he added. "The animal is using energy to combat the parasites. Veterinarians know what's going on in your area.

Finally, Larry urges producers to prepare animal shelters, particularly from wind. It's better to prepare shelter in the fall rather than trying to do it in the middle of winter. It's part animal welfare and part economics, because keeping them out of the wind reduces their energy expenditure.

"Producers tend to be ingenious. They will find all kinds of things that work for them," Larry said, "but these are the things I think everyone should consider. The economics apply to both beef and dairy operations."

Richard A. Nichols (<u>www.ansoncopy.com</u>) is a farm writer from Okotoks, Alberta.





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WILD BOARS

A VERY REAL THREAT, ACROSS THE PRAIRIES AND BEYOND

Story by Sheri Monk.

ow many wild boars are actually roaming the prairies? No one knows – not even Dr. Ryan Brook, associate professor at the University of Saskatchewan, who leads the only wild pig research project in the country.

"We have this overwhelming pile of data showing we have a lot of pigs, that they're reproducing at alarming rates, and that they are spreading quickly," he said. "The only thing we don't have yet is a population estimate."

Wild boars are found in BC, Alberta, Saskatchewan, Manitoba, Ontario and Quebec. Native to Europe and Asia, wild boar were imported during the 1980s and '90s as part of a national push to diversify Canada's agricultural industry. Though the population had already exploded in Texas, Canada did little to trace the imports. Once here, some inevitably escaped, and some were deliberately released when the markets were poor.

They thrived.

While Saskatchewan by far has the worst problem, Alberta's nine-year \$50/head bounty program resulted in more than 1,100 wild pigs being killed, before being cancelled. Wild boar and domestic pigs are very closely related – some might even say they're kissing cousins. The result? Wild boars have picked up the domestic pig's prolific reproductive ability.

"Piglets are effectively being born in almost every month of the year. These are continuous breeders, with an average of six young per litter, and multiple litters per year," said Brook.

Wild pigs, like their domestic counterparts, can host a range of diseases such as TB, brucellosis, and African swine fever.

"As of right now, it is impossible to say anything definitive about the disease status of wild pigs in Canada. There has been testing of a small number of animals in two areas of Saskatchewan for some diseases, with nothing particularly concerning being found, but tests for several key reportable diseases have not been done on any wild pigs in Canada so far," said Brook.

The U.S. has tested feral swine for swine brucellosis, classical swine fever and pseudorabies since 2006.

Research has repeatedly demonstrated that the only effective method of control is to remove an entire group of pigs (called a sounder) at the same time. Alberta's bounty program wasn't a total wash – the province has a rough idea of where the problem areas are, and the pigs' geographic expansion was tracked and shown to increase. Perhaps most importantly, they've developed a wild boar management plan, something Saskatchewan <u>is still working on.</u>

"We've had some discussions and we actually used Alberta's plan as a template, but we're really just in the initial stages there. It's still on our radar," said Darby Warner, executive director of insurance for the Saskatchewan Crop Insurance Corporation, which was tasked in 2015 with managing wild boar in the province.

Brook's research, which is conducted in Saskatchewan and Manitoba, has largely been paid for by the United States Department of Agriculture. The U.S. is so concerned about pigs spreading south into the largely wild boar-free northern states that Brook was given five years of funding. He says the expectation was that he would be able to demonstrate that the prairies had a problem, and then the Canadian authorities would take notice – and action.

7

If your kitchen is on fire, you call 9-1-1. You don't wait until the house is fully engulfed. You get on it immediately... and the same goes for wild pigs. You have a small window of action.

"As wonderful as it's been, it's really not their responsibility to fund the only research program on wild pigs in <u>Canada,</u>" <u>Brook said.</u>

Manitoba also has a population of wild boar, and one was shot just 1.5 miles from the U.S. border, recently.

"We have trail cameras down there. The numbers in Manitoba have really been increasing, in recent years," Brook said. "As we know with disease, it only takes one animal. At a very minimum, to have a chance, we need some kind of alliance between the three prairie provinces."

There is one established spot in Ontario with a group of wild pigs, and Quebec is on board to get a handle on what they may be dealing with. Brook's advice? As a nation, it's time to work together and tackle the problem sooner, rather than later.

"If your kitchen is on fire, you call 9-1-1. You don't wait until the house is fully engulfed. You get on it immediately," Brook said. "If you wait too long, it's out of control – and the same goes for wild pigs. You have a small window of action."





So, what should producers do if they see wild pigs or suspect they have them on their land? Here's a quick list of pointers:

- Contact Dr. Ryan Brook sooner rather than later by emailing him at <u>ryan.brook@usask.ca</u> or by messaging his Facebook page, at
- www.facebook.com/WildPigResearch.
 Do not try to shoot them, or let local hunters know their locale. This has only proven to distribute them farther,

and causes them to be more secretive.

Whole sounder removal is the only proven method of control.

- If you have any, consider hanging some game cameras where you suspect they travel. This will help locate them later, for removal.
- If you are raising outdoor pigs, ensure your fences are adequate to keep the captive ones in, and the wild ones out.
- Consider moving feed sources to the yard or another secure spot to avoid supplementing the wild pigs' diet.

While awareness is increasing, overall, Canada is not keeping up with the problem.

"There are more sightings than ever before, in new areas, and in new watersheds. There is absolutely no evidence to suggest numbers are going down," said Brook.

Sheri Monk is an investigative reporter specializing in agriculture, biology and conservation, and is based out of Medicine Hat, Alberta. <u>sherimonk@gmail.com</u>.





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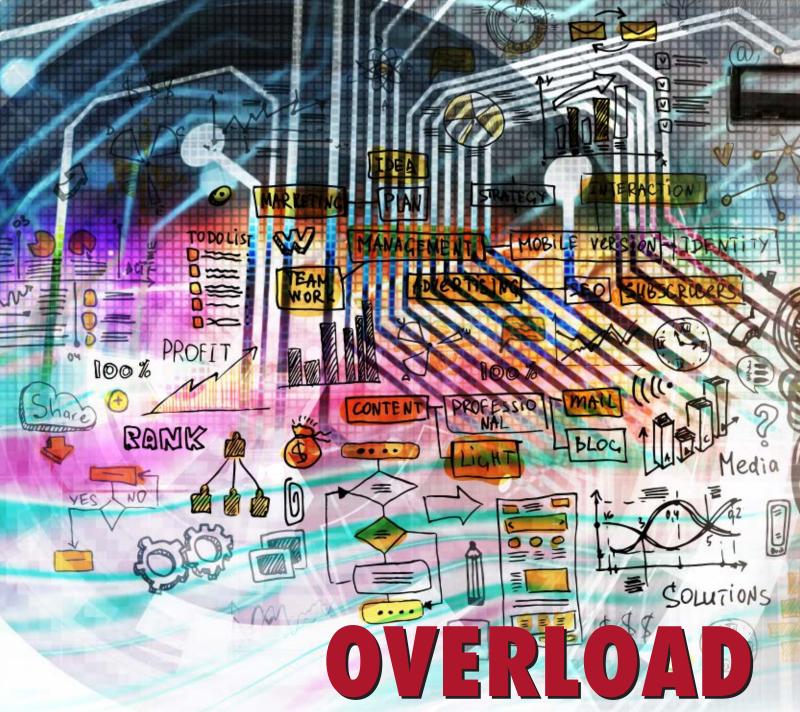


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UNPLUGGING FROM TECHNOLOGY

Story by Toby Welch.

anada is amazing. We have maple syrup, open prairies, and Nanaimo bars. We are also one of the most wired countries in the world. According to Statistics Canada's Internet and Digital Technology study, "Nearly all Canadians under the age of 45 use the Internet every day." All the technology that has become commonplace can create technostress, feelings of anxiety or stress caused when dealing with computers, cell phones, navigation devices, e-readers, and all the other gadgets that have invaded our lives.

The farming industry in Canada comes with its own set of technological challenges. We deal with cell phones and computers, of course, but we also have the added factor of devices like GPS systems in machinery, mapping technology, auto-steered tractors, datagathering drones, fan systems, pest-fighting apps, and the like.

Dr. Larry D. Rosen, author of *iDisorder*: *Understanding Our Obsession With Technology and Overcoming its Hold On Us*, among other books, shares what he sees as reality these days, "The modern family is isolated, with each person wrapped in his or her own "techno-cocoon." Just take a look at how the typical family looks at the end of the day... Mom is preparing dinner while checking her cell phone. One child is playing games on his computer, another is on her own cell phone, and the youngest is playing X-box. Dad comes home from work and goes immediately to his computer. And the kids seem to know so much more about computer technology. In many homes, we are seeing a loss of communication and a major shift in the power balance in the family."

How do you know if you are suffering from technostress? Your brain will feel overloaded. You are unable to think clearly and you forget things. You may experience memory loss. Feelings of powerlessness and irritability can occur. All this can lead to headaches, backaches, and stomach upset. Your sleep is not restful as your brain is overstimulated. Anxiety disorders and depression may arise.

Janet Mackow has lived on a family farm her entire adult life. She has seen farming go from zero-tech to high-tech machinery

Some seem to thrive on the buzz, at least for a while, whereas others either flounder outright or cope but go home feeling frazzled rather than proud of increased productivity. Some of us survive for a while, but more and more of us are wondering where it will all end...

and gadgetry. That can lead to frustration and feelings of overload for many farmers. Mackow observes, "So much of the equipment is getting so sophisticated with technology that farmers can't always fix. For example, computers on a combine will just shut off. Sometimes it seems like the technology has gone a bit too far."

Professor John Mueller, Retired, Professor Emeritus with the Werklund Faculty of Education at the University of Calgary, explains the ramifications of the abundance of technology, "Modern technology has proliferated our lives. Some seem to thrive on the buzz, at least for a while, whereas others either flounder outright or cope but feel frazzled rather than proud of increased productivity. Some of us survive for a while, but more and more of us are wondering where it will all end."

All this technology has a huge impact on our lives, health, and families. So, what can we do to curb technology's effects on our lives? Give some of these strategies a try:

- Slow down. Take frequent breaks.
- Only check your email at preset times.
- Restrict the time spent on laptops and other devices.
- Turn off notifications on your phone so it doesn't ping constantly.
- Get rid of all but your most necessary apps.
- Have conversations in person whenever possible instead of a phone call, email, or text.

- Don't answer the phone just because it rings that is what voicemail is for.
- Make a conscious effort to make your home a haven from massive amounts of technology.
- Have meals around the table, not the television, and allow no tech while eating.
- Adopt a digital blackout period, cutting off all electronic use an hour before bed.
- Consider making your bedroom a techfree zone.
- Make tech-free time with your family a priority.
- Carve out no-technology times, starting with an hour here and there and working your way up to a day and then an entire vacation.
- Connect with actual people.

With all the technology integrated into the farm life, it's not surprising that Martin Carrier, a farm kid who is now a product manager for Kubota Canada, likened modern-day tractors to "powerful computers on wheels" in a recent Industry and Business article.

Here are some additional tips from Professor Mueller:

- Stop trying to multi-task and work 24/7. Humans are not good at it. Your computer can go all day, every day, but you can't, so don't even try. Resting is not loafing - it's recharging.
- Check your email and voicemail intermittently rather than constantly, following the manner of snail mail. If you take a break to reenergize, you will be more efficient when you resume work, and the messages will still be there.
- Think twice before upgrading hardware or software. If it isn't broken, leave it alone.
- Get a low-tech hobby.
- Laugh more.

Most people greatly underestimate the amount of time they're connected. Consider

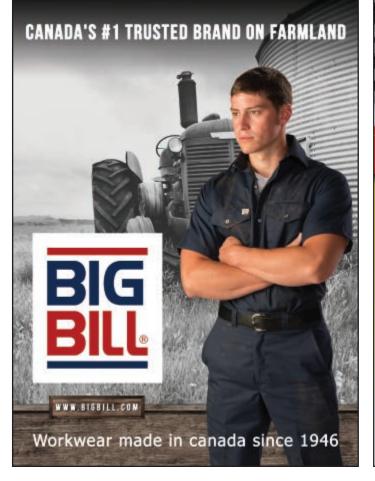
documenting your usage so you can get an accurate picture of where you fall. Time spent being connected is time not spent doing something else. Consider what is most important in your life and what makes you happy.

Mackow shares more tech frustrations, "A lot of us farmers have very slow internet or none at all. And a lot of areas are without cell phone coverage (although hills have a lot to do with that.) And GPS systems are great. They almost drive themselves but they only say where to go, not if a field is wet. You can easily find yourself stuck or running over things. Or the systems stop working altogether."

As farms continue to get more and more hightech, the need to avoid technology overload will become even greater. With a few changes, you can control the technology in your life, not the other way around.

Toby Welch is a freelance writer based in Airdrie, Alberta. Her fondest childhood memories include naming farm animals, getting poked by straw bales, and the feeling of warmth in her hand when collecting eggs.





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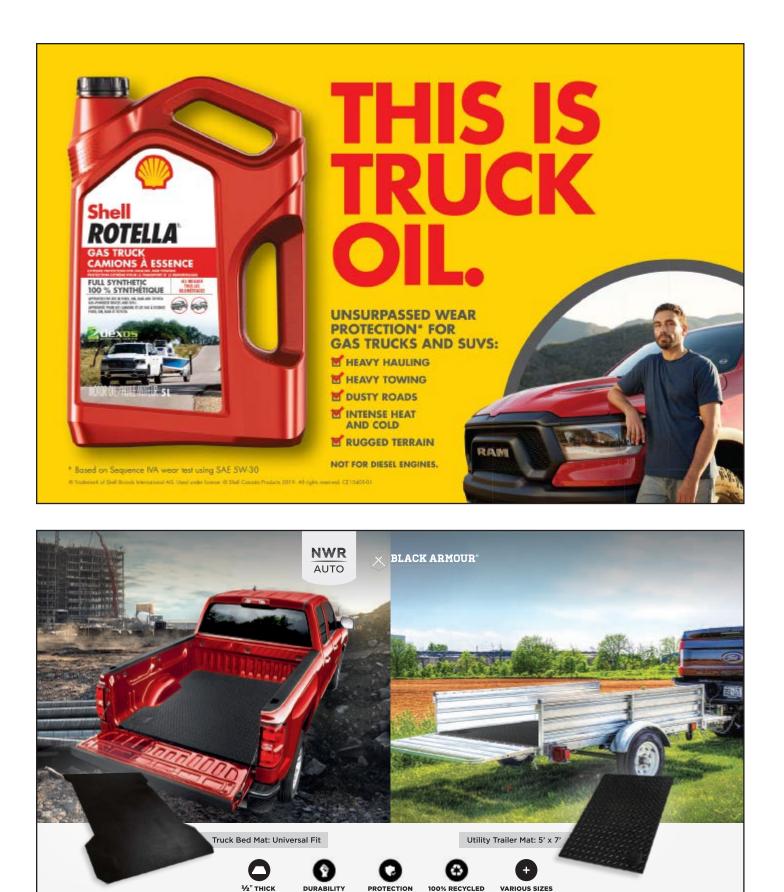
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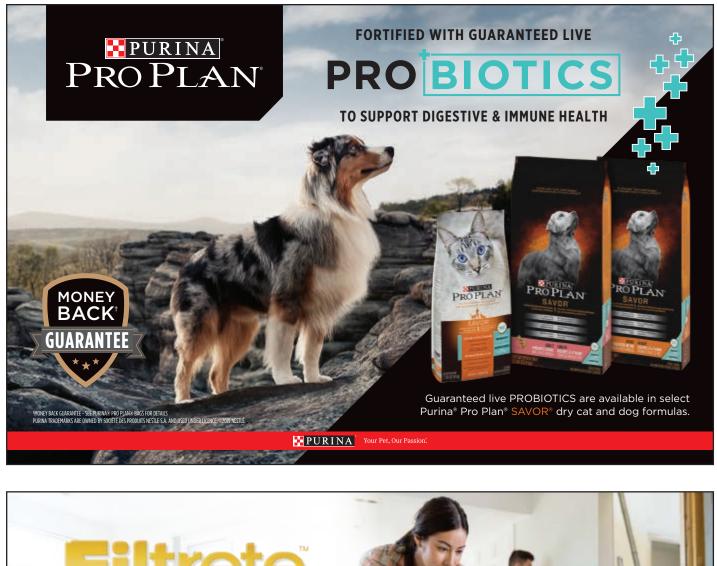
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HOW RECENT CHANGES AFFECT ACCESS FOR USE WITH LIVESTOCK

Story by Phil Buote, DVM.

ate in 2017, Health Canada introduced a package of regulatory and policy changes to strengthen the veterinary oversight of the use of antimicrobials in animals.

Most impactful to animal owners and producers is the policy that moved all medically important antimicrobials (MIAs) to the prescription drug list. Effective Dec. 1, 2018, all use of MIAs require a prescription from a registered veterinarian, and over the counter sales are no longer permitted. This includes injectable, in-water and in-feed antimicrobials.

Health Canada changes around the use of antimicrobials is to address, in part, the threat of the ongoing development of antimicrobial resistance (AMR).

AMR is the ability of an infectious organism to adapt and survive the effects of a drug(s) that is normally used to treat the infection. All use of antimicrobials potentially contributes to the development of resistance.

AMR can be minimized by eliminating excessive or inappropriate use of antimicrobials. Slowing the development of resistance is important to preserve the effectiveness of and access to antimicrobials for use in humans and animals.

The World Health Organization has identified AMR as an increasingly serious threat to global public health, which requires action across all government sectors and in society.

The 2016 O'Neill Commission Report¹ on AMR suggests that without significant policy to address AMR, the current 700,000 deaths globally per year due to resistant infections could rise to 10,000,000 per year, and the cost in terms of lost global production could reach 100 trillion USD. A recent report, Interagency Coordination Group on Antimicrobial Resistance report to the Secretary General of the United Nations², included the following key messages:

- "1) Antimicrobial resistance is a global crisis that threatens a century of progress in health and achievement of the sustainable development goals.
- "2) There is no time to wait. Unless the world acts urgently, antimicrobial resistance will have disastrous impact within a generation.
- "3) Because the drivers of antimicrobial resistance lie in humans, animals, plants, food and the environment, a sustained One Health response is essential to engage and unite all stakeholders around a shared vision and goals."

The One Health approach to address the threat of AMR calls on all stakeholders to use antimicrobials responsibly. The goal is to maintain access to effective antimicrobials, an essential resource necessary for protection of public health, and animal health and welfare.

Given the importance of protecting human health, veterinary medicine and animal agriculture must be proactive in demonstrating responsible use. If antimicrobials are not used responsibly in animal agriculture, access may be lost. This could result from continued development of resistance or from further regulatory controls and restrictions to preserve antimicrobials for human health only.

Animal owners, livestock producers and veterinarians must work together to ensure responsible antimicrobial use.

Veterinary oversight is a key element of antimicrobial stewardship and preserving access to effective antimicrobials. Veterinary oversight includes the professional involvement of a licensed veterinarian providing guidance or direction for appropriate use of antimicrobials in animals with the objective of ensuring prudent use and minimizing the emergence or spread of antimicrobial resistance.

Veterinarians, through their education, experience and accountability, are equipped to provide this guidance and direction. This includes prescribing treatment for an animal or group of animals. The direction is specific and may be summarized as the *right drug* for the *right reason*, to the *right animal(s)*, at the *right dose*, by the *right route*, at the *right time*, for the *right duration*, and with the *right records*.

For animal owners and producers who regularly work with a veterinarian, there has been very little change in day-to-day operations and access to antimicrobials. It is important to note that most MIAs have been available only by prescription for decades. Animal owners or producers who administer antimicrobials through feed will now require a veterinarian's prescription.

The veterinary profession and industry groups have been communicating to their members about the importance of developing a veterinarian-client-patient relationship (VCPR). For animal owners and producers who do not have a veterinarian, establishing a valid VCPR is required prior to issuing a prescription. The process of establishing a VCPR will normally include discussions about animal health and disease prevention. The veterinarian may also work with the producer to develop farm-specific animal health protocols.

In this sense, the value of the partnership established through a VCPR is not limited to a requirement for a veterinarian issuing a prescription. This partnership between the veterinarian and the animal owner provides an excellent opportunity to engage in a discussion about animal health management strategies that could reduce or even eliminate certain use of antimicrobials.

Examples of these health management strategies include:

- · reviewing and discussing animal housing
- handling facilities
- animal nutrition
- parasite control
- vaccination strategies that optimize health and reduce incidence of disease that might otherwise require antimicrobial treatment

Increased veterinary oversight of use of antimicrobials as well as health management strategies to reduce or avoid antimicrobial use are important elements of "antimicrobial stewardship".

Talk to your herd veterinarian about antimicrobial stewardship or visit <u>www.abvma.ca</u> to search for veterinary care in your area.

References:

- ¹ <u>https://amr-review.org/sites/default/</u> <u>files/160525_Final%20paper_with%20cover.</u> <u>pdf</u>
- ² <u>https://www.who.int/antimicrobial-</u> resistance/interagency-coordinationgroup/IACG final report EN.pdf?ua=1.

Dr. Phil Buote is the Deputy Registrar and Complaints Director at the Alberta Veterinary Medical Association.

The Alberta Veterinary Medical Association (ABVMA) is the professional regulatory organization responsible for regulating the practice of veterinary medicine in the province of Alberta under the authority of the Veterinary Profession Act (VPA).



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- 3-4 garlic cloves, skins on, halved
- A few sprigs of fresh thyme
- Juice of ½ a lemon
- 4 apples: Honeycrisp or Braeburn
 2 cups of cider (Uncommon or Big
- Rock)
- 4 tbsp honey
- 1 cup chicken stock

Preheat oven to 450 F. Score fat around leg of lamb in a criss-cross pattern. Rub with olive oil and liberally season with salt and pepper. Place in a deep roasting pan and scatter garlic and thyme. Add lemon juice and roast for 20 minutes.

Core and chop apples into quarters. Reduce oven heat to 375 E Add apples and cider to roasting pan with lamb and drizzle with honey. Return to oven for 15 minutes for every pound for a medium doneness. Baste with pan juices halfway thru cooking time.

Remove lamb from roasting pan. Place on board and tent with foil, allow to rest for 15 minutes. With a hand blender, break up apple and garlic in the roasting pan, blending until chunks are gone. Strain into a saucepan and add the chicken stock. Reduce over medium high heat,

Recipe by Tu Le.

Carve lamb and serve with sauce.

until desired thickness is reached.

Tu Le is chef and co-owner of Jack's Burger Shack and Cerdos Tacos and Tequila, in St. Albert, Alberta.

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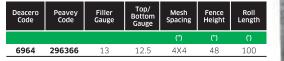
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6773	291859	1047/6	14.5	12.5	47	330

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- 1 2/3 cups all-purpose flour
- 3 1/2 tablespoons sugar
- 1 tablespoon plus 1/2 teaspoon baking powder
- 1/8 teaspoon salt
- 6 tablespoons cold unsalted butter, cubed
 - 2/3 cup plus 1 tablespoon heavy cream

FOR RHUBARB

- 2 pounds rhubarb, cut into 1/2-inch pieces (about 6 cups)
- 1/2 cup sugar
- 1-inch piece of vanilla bean, split lengthwise, pulp scraped
- 2 tablespoons cornstarch
- 1 tablespoon turbinado sugar

In the bowl of a food processor, combine the flour, sugar, baking powder and salt. Pulse to combine. Add the butter, and pulse until the flour resembles coarse meal. Add 2/3 cup of cream and pulse **A TASTY DELIGHT**

Recipe by Tu Le. Photos by Haley Groenenboom.

until the dough comes together (add a little more if mixture is dry). Turn the dough onto a lightly floured surface, and gently pat it together.

Form the dough into 2-inch balls, then flatten them slightly into thick rounds. Chill for 20 minutes.

Preheat oven to 350 degrees.

Put the rhubarb in a shallow 9 x 9 dish and toss with sugar, vanilla, and cornstarch. Allow to macerate 15 minutes.

Arrange the biscuit rounds on top, leaving an inch between them. Brush the biscuits with remaining cream and sprinkle with turbinado sugar. Bake until the rhubarb is bubbling and the biscuits are golden brown – about 40 to 45 minutes.

Serve with ice cream.



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FOOD AND FUEL PRICES

RETAIL FOOD PRICES UNAFFECTED BY FUEL PRICE INCREASES

while everyone from farmers to consumers feels the pinch of higher fuel prices, whether it be when the fuel truck pulls into the farm yard or at the local retail gas pumps, the fact is that variable fuel prices have little impact on the price of food not directly anyway.

Fuel prices can be a considerable component of crop and livestock production costs, but any price increases are largely absorbed by the producer, say agricultural economists. Even increasing transportation costs throughout the supply chain are largely borne by the supplier, and aren't directly passed on to consumers through a corresponding increase in the price of food.

"Certainly at the farm level, unfortunately farmers are price takers," says J.P. Gervais, Farm Credit Canada's Vice President and Chief Agricultural Economist. "Any increase in the cost of inputs won't be reflected in farm commodity prices. It has to come out of the producer's bottom line." He says producers involved in direct marketing of agricultural products to consumers or food service (restaurants) may be able to pass along a bit of fuel and other input cost increases, but even then, they are limited. All levels of food retail are very competitive business, so whether it is at the farm gate or at the grocery giant check out counter or favourite restaurant, prices have to remain competitive.

Fuel costs are an important factor in overall farm operating costs. In a 2019 crop cost of production report produced by Manitoba Agriculture, it estimates farm fuel costs can range anywhere from \$22 to \$33 per acre, depending on the crop being produced. The report calculates a total of 15 different operating input costs for the main grain and oilseed crops. Fuel costs represented anywhere from 10 to 15 per cent of overall operating costs — third in line, after seed and fertilizer costs. Again, any increase in the cost of those inputs has to be hopefully covered through a combination of the price paid for the commodity and yield per acre. Story by Lee Hart.

"Increases in fuel prices throughout the supply chain – from the farm right through to suppliers delivering products to the grocery store – have to be absorbed," says Sylvain Charlebois, a professor in food distribution and policy in the Faculties of Management and Agriculture at Dalhousie University in Halifax. "Consumers don't really notice changes in fuel prices in products bought at the retail level.

"Grocery stores in particular operate on very close margins, so they are strict in terms of keeping prices in check," he says.

Even a study conducted a few years ago by the Bank of Canada looking at the impact of crude oil prices on the cost of food still holds true. That report found "There is no evidence that oil price shocks have caused more than a negligible increase in retail food prices in recent years. Nor is there evidence from the prevailing wisdom that oil-price-driven increases in the cost of food processing, packaging and transportation and distribution are responsible for higher retail food prices." Both Gervais and Charlebois say one of the main factors affecting increases or decreases in food prices is the age old law of supply and demand.

"If there is some interruption in the supply of a particular product to the food chain, that will usually translate into an increase in food prices," says Gervais. "Poor weather or a disease that affects production of a particular product usually results in price increases." A shortage in production, will often force food distributors or retailers to scramble to find alternate suppliers if possible.

Consumer demands can often affect an increase in food prices for specific products, says Charlebois. For example, a recent fad or trend toward the potential benefits of celery juice in the diet, created a dramatic increase in demand for celery. The demand – combined with supply problems related to bad weather – pushed the price of celery to between \$4.50 and \$6 for a single bunch in some major Canadian grocery stores.

"Depending on the situation, there can be a strong demand or supply problem that can cause price spikes... but after a while, prices will calm down," says Charlebois.

He also notes the value of the Canadian dollar can have an effect on imported food retail prices. "Currency can be a big issue," he says. A low Canadian dollar is usually good news in terms of keeping retail food prices lower. Danny Le Roy, Associate Professor of Economics at the University of Lethbridge, also notes there are a wide range of costs that affect food prices.

"When you go to a restaurant for example, probably the most expensive aspect of the meal are the wages for the person serving the food and the people in the back who are cooking it," he says.

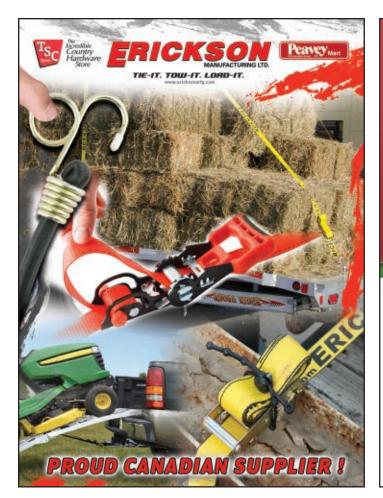
Le Roy agrees fuel prices have little impact on the price of food at the retail level or in the food service industry, but at the same time they have a significant impact on the supply chain.

"There is a cumulative affect related to increased costs," says Le Roy. "If you have increasing fuel costs or a carbon tax, for example, they do increase costs through out the whole supply chain. The impact on the consumer might be quite negligible but the consequences of these costs are not trivial. Every stage of the supply chain will bear the brunt. The important thing to remember is that the increase is a cost for whom?"

As a journalist for more than 40 years, Lee Hart has focused on reporting on and commenting about the Canadian agriculture industry for the past 30 years. A former field editor for Country Guide Magazine, he has been a writer and editor for Grainews for the past 15 years based in Calgary, AB.









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