



JULY / AUGUST 2016

AgriSuccess

LEARN, PLANT,
GROW

A MOTTO FOR SUCCESS

USING BIG DATA
IN BEEF
PRODUCTION

.....

6 WAYS TO SPOT
A GREAT BUSINESS
PARTNER





COVER STORY

YOUNG FARMER PROFILE

Learn, plant, grow – a motto for success

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With pride in agriculture and a positive yet realistic outlook, AgriSuccess is dedicated to helping Canadian producers advance their management practices. Each edition aspires to present content that is:

- engaging
- motivational
- innovative
- actionable

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Astronauts and farmers have a lot in common



I don't do as much recreational reading as I should. Don't get me wrong, I do a lot of reading, pouring over farm newspapers, magazines and assorted research and policy reports. But I don't take a lot of time to read for pure enjoyment and when I do, it's often a book with a management or motivation theme.

However, our sons gave me some books for Christmas and one of them was *An Astronaut's Guide to Life on Earth* written by the multi-talented Chris Hadfield, one of the most seasoned and accomplished astronauts in the world. It wasn't a book I'd normally choose, but as I got into it, I realized the title could just as easily have been *An Astronaut's Guide to Farming*.

In fact, Hadfield grew up on a farm his parents bought near Milton, Ont. It wasn't far from the Toronto airport his airline-pilot dad flew in and out of.

"It's not difficult to make yourself work hard when you want something the way I wanted to be an astronaut," Hadfield writes, "but it sure helps to grow up on a corn farm."

His personal philosophy can perhaps best be explained by his motto: Be ready. Work. Hard. Enjoy it!

Being ready for anything that might go wrong is a life-and-death skill for an astronaut. I don't envy their endless simulations, testing and debriefing sessions.

But as a farmer, I can relate to maintaining equipment to avoid field delays and working out price, revenue and expense scenarios to be ready for any eventuality.

In fact, an astronaut's EVAs (extra vehicular activities) remind me of exiting the tractor or combine cab to perform troubleshooting duties. Kind of handy that we don't need to put on a spacesuit and squeeze through an airlock each time.

Motivation and perspective come from many sources. *An Astronaut's Guide to Life on Earth* is a particularly good read for farmers.

Any books you'd like to recommend? Tweet using #AgriSuccess if you'd like to share your picks with everyone else.

We welcome all your feedback and story ideas. Email kevin@hursh.ca or tweet @KevinHursh1. ■

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Important advice for selling your grain in the U.S.

BY LORNE McCLINTON

Many producers are selling their grain to buyers in the northern states whenever potential returns warrant. Companies like Columbia Grain, based in Portland, Ore., have gone out of their way to make the process as simple as possible for their Canadian customers.

While it's become simpler to sell grain to U.S. buyers, Canadian farmers should be aware they likely need to file a U.S. federal income tax return with the American Internal Revenue Service (IRS) even if there is no tax owing, or they could face major penalties.

"Most farmers in Canada who sell to the United States will, at minimum, need to file a treaty-based return," says David Turchen, an international tax partner with MNP in Abbotsford, B.C.

A treaty return is an information filing with the IRS that claims U.S. federal income tax relief due to the Canada-U.S. income tax treaty rules. The treaty requires a certain level of activity in the U.S. be achieved, known as creating a "permanent establishment," before actual U.S. federal income tax is owed.

"The IRS wants to know about any sales that they consider to be sourced in their country, whether any taxes are owed on that sale or not," Turchen says. "They have stiff penalties in place, US\$1,000 per tax year for individuals and US\$10,000 per tax year for corporations, to force farmers to file. This is a big deal and most farmers selling to the U.S. have no idea they should be doing this."

The key consideration hinges on whether your grain is classified as a U.S.-sourced sale.

"If you take your grain samples across the line to an American buyer to solicit a sale, then go back home,

load it in your truck and drive it across the border to drop it off, you quite clearly have a U.S.-sourced sale," Turchen says. "A U.S.-sourced sale occurs when the title of the product, risk of loss or economic transfer occurs in the United States."

Filing an informational treaty return isn't difficult, but you have to stay on top of it and be aware of the rules.

"Further, if you regularly conclude sales within the United States, you may trigger the permanent establishment rule – which means you owe U.S. federal income tax on the related sales."

Work with a sales agent

It is possible to sell your production to U.S.-based buyers without filing a U.S. federal income tax return, but all major aspects of the transaction must occur in Canada. Ideally, the U.S. buyer will reach out and assume ownership of the product before it crosses the border.

One potential solution is to engage Canadian-based sales agents who can arrange for these transactions to be based in Canada.

"A sales agent is different than a customs broker," Turchen says. "Sales agents are independent contractors who you hire to make the rounds there and drum up deals; they don't help you to get your product through customs. Just having one of your friends or neighbours do this isn't good enough. You want to find someone who does this for a living and has a bunch of different customers to be able to demonstrate you've arranged your sales through an independent agent."

Outsourcing your shipping to either an American or Canadian trucking company will further reduce your



"Most farmers in Canada who sell to the United States will, at minimum, need to file a treaty-based return."



chances of having to file a tax return. The shipping terms should clearly identify the U.S. customer as solely responsible for the product after it leaves the farm. Ideally, by the time their grain crosses the border the only outstanding activity a farmer will have to do is to deposit the cheque.

Be aware but don't panic

American companies are interested in buying Canadian grain. According to Danny Moore, manager of Columbia Grain's elevator in Plentywood, Mont., they will even handle the majority of the paperwork producers need to bring their grains through customs.

However, producers have to jump through a lot of hoops to avoid having their grain classified as a U.S.-sourced grain sale and thereby avoid filing a U.S.

federal income tax return. "Typically some element of the transactions I see indicate a U.S.-sourced sale," Turchen says. "Fortunately, most farmers just have to file a treaty-based return, which is relatively simple to deal with."

"It's important not to just ignore the need to file them though. Border controls and ongoing audits of U.S. elevators make it increasingly likely that anyone trying to avoid their filing obligations will be caught," Turchen says. "If you feel you might not be in compliance with U.S. tax regulations, talk to your tax professional. Odds are good they can work something out. However, if you wait until the IRS calls, far fewer options will be available."

Turchen also advises producers to consult their tax professional about any state tax implications. ■



VIDEO:
FCC ag economist analyzes the 2016 USDA major crop price forecast.
fcc.ca/USDA



LEARN, PLANT, GROW

A MOTTO FOR SUCCESS

BY TRISH HENDERSON

MY
Garden
IS MY MOST
Beautiful
MASTERPIECE

Entrepreneurs Christie and Tanner Pollack jumped in with both feet when they began construction of their nursery and greenhouse centre near High Prairie, Alta., in 2013. A long-time dream of Christie's, it took both passion and discipline to turn this desire into reality.

Tanner already had his own successful agrology consulting company and a small beef and grain enterprise, but Christie had been working off-farm and wanted to pursue her love of horticulture. The couple saw an opportunity as their community had been without a local source for bedding plants for several years.

Today, Christie's Gardens and Greenhouses covers 12,500 square feet. Spa music is played to create a relaxing atmosphere while customers shop for bedding plants, hanging baskets, starter vegetables, herbs, perennials, trees, shrubs, giftware and fresh-cut flowers. Christie manages all aspects of day-to-day operations, with Tanner lending an extra hand when needed.

In-store customers come from within a 400-kilometre radius, but online sales have reached the U.S. and Australia. The name of the company website, LearnPlantGrow.com, reflects the Pollacks' philosophy for managing their business, and Christie's vision for the future.

Learn

With a production horticulture diploma from Olds College, Christie's education prepared her for managing greenhouse production. Her previous work experience in banking and accounting helps her with financial planning and analysis.

Tanner obtained a science degree in range and pasture management from the University of Alberta, and his expertise in plant health and business is an asset.

Formal education was just the beginning of the learning journey. The Pollacks are always looking to build their professional



relationships with other greenhouse operators and entrepreneurs, or for a new course or book on business management.

Membership with the Alberta Greenhouse Growers Association and participation in online greenhouse marketing forums have allowed them to create a support network within the industry.

"Compared to other sectors, we're fortunate in that our peers aren't direct competitors because of distance between us," Tanner says.

"We openly share information with other greenhouses and refer customers to each other. This makes our industry stronger," Christie maintains. "But sometimes it's helpful to look outside the sector to get new ideas and perspectives."

"I take at least half an hour every day to learn something new about gardening or business management. We look to many different sources, such as social media, newsletters or podcasts. Our generation is very fortunate to have access to so much free information."

Plant

A solid business plan was the seed starting Christie's Gardens and Greenhouses. By

documenting their marketing strategy, production costs, industry contacts and future expansion possibilities, the Pollacks ensured their business had the best possible start.

The operation experienced the same setbacks as other fledgling enterprises, including construction cost overruns and cash flow challenges, but a pro-active approach has helped.

The couple works with a professional business coach, meeting at least every other month.

"We go through our financial statements with a fine-tooth comb, reviewing past performance to decide what to stop, start or grow. Some things take time, but we need to ensure we're trending in the right direction," Christie says.

Regular budgeting exercises are also important.

"Cash flow is our biggest challenge as a growing company," Christie admits. "We work on budgets all the time, but it takes a few years to understand trends and identify areas for improvement."

After three years in business, the Pollacks are now reflecting on their original business plan.



"I take at least half an hour every day to learn something new about gardening or business management."

"Nothing ever goes exactly as anticipated," Tanner says. "So we're updating our plan to bring it back in line with how our business has changed."

Grow

The target market for Christie's Gardens and Greenhouses is new gardeners, especially those 25 to 35 years of age, but the Pollacks didn't conduct traditional market research to determine this demographic.

Instead, Christie wrote down why she's in the horticulture business and what she loves about it.

"Then, I outlined what a customer would look like who shares my values," she explains. "We focus on serving these customers because they're people I can build authentic, long-term relationships with."

Customer service is key to growing the business.

"People love the beauty of a greenhouse, but it can be overwhelming for a novice gardener to choose plants that will work," Christie says. "We try to keep our messages simple, and be there to answer all customer questions."

To deliver the best possible customer experience, having the right employees in the right role is crucial. With up to ten staff members during the spring season, the

Pollacks strive to create a team atmosphere and assign employees jobs they enjoy.

"If our team is happy and excited, they can deal with customers in the same way," Christie believes.

Social media offers an important way to reach customers, and Christie's Gardens and Greenhouses is active on Facebook and Twitter. The company website is a key promotional tool, with Christie's blog offering seasonal gardening advice and information about the greenhouse.

The long-term vision is for LearnPlantGrow.com to become a national gardening reference. As value-added services, Christie offers do-it-yourself flower arrangement workshops in the greenhouse and rents the facility as a wedding venue.

Christie and Tanner's advice for other young agriculture entrepreneurs also reflects their "Learn, plant, grow" motto: "Find people who know more than you, and ask them questions. Know and share your story, and dream. Then look back to see how far you've come!" ■

Follow Trish: [@TrishHenderson3](#)

TOP 3 TAKEAWAYS

1

Seek out professional
business advice



2

Thoroughly analyze
financial statements



3

Review and update
budgets regularly





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Big changes in equipment investment ratios

BY KEVIN HURSH

The price of new farm equipment has risen rapidly in the last couple of years, putting upward pressure on fixed costs for producers.

Alberta Agriculture tracks farm input costs and publishes the results monthly on their website. Between March 2014 and March 2016, the base model four-wheel-drive tractor in their survey increased in price by nearly \$100,000. The base model combine was up a similar amount.

Sizable increases have also occurred in new balers and mid-size tractors, driving up costs for livestock producers looking to upgrade.

Industry observers cite the drop in the value of the Canadian dollar as the main reason for the dramatic price increases. More stringent Tier 4 emission standards have also pushed up prices for diesel engines.

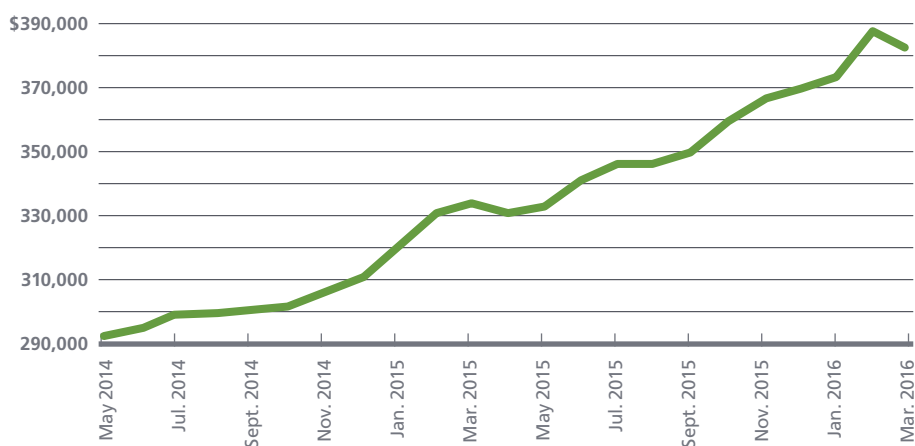
For new equipment that has been sitting on dealer lots for some time, prices may be somewhat less than anything new coming out of the factory, but in general terms new equipment values have accelerated rapidly.

That has helped demand for used equipment, thereby reducing inventory. As a result, those prices are expected to rise as well. For anyone upgrading equipment, whether new or used, costs are likely to be significantly higher compared to upgrades two or three years ago.

As a business management specialist with Alberta Agriculture and Forestry, Ted

NEW TRACTOR PRICE, 4WD

325-375 hp, 6-8 cylinder diesel, 12-18 speed transmission



Source: Alberta Agriculture and Forestry

Nibourg analyzes machinery investment costs. He recommends tracking the market value of your equipment as compared to your gross revenue per acre.

According to Statistics Canada data, Alberta farmers had \$8.25 billion invested in machinery in 1998. This increased steadily to nearly \$12.8 billion by 2014, the last year for which statistics are available. At that level, machinery investment in the province averaged \$253 an acre. This is an average for both crop and livestock producers, but it's generally assumed that crop producers have a higher investment per acre.


Nibourg estimates the average Alberta crop producer in 2014 had a machinery investment roughly equivalent to their

annual gross income. Back in 2003, when revenues were much lower, the ratio was well over 2:1 – an average equipment investment more than two times greater than annual gross revenue. The average ratio from 1998 to 2014 was 1.56:1.

While machinery investment has steadily increased, gross revenue has increased even more rapidly in most years, so the ratio has declined. However, gross revenue can be highly volatile.

“Economists advise farm managers to keep their machinery investment ratio below 2:1,” Nibourg notes. ■

Follow Kevin: @KevinHursh1



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Using big data in beef production

BY TRISH HENDERSON



“Occasionally data collection leads directly to insight, but more often than not it leads to the realization you simply don’t know what you don’t know. Data must be integrated and relevant. . . or it won’t have much value.”

Radio frequency identification (RFID) ear tags have been mandatory for Canadian cattle since 2006, however, this means of identification offers more than just traceability.

Data acquisition platforms combining RFID readers and other sensors make it possible to continually record individual animal weight, body temperature and behaviour. Tracking these indicators can assist in genetic selection for more feed-efficient animals, early illness detection and treatment, and optimal market timing for fed cattle.

Measure feed efficiency

GrowSafe Systems Ltd. based in Airdrie, Alta., was one of the first companies in North America to use RFID in livestock. In collaboration with Alberta researchers, the company developed technology to

unobtrusively measure individual feed intake in normal cattle environments. The first of these systems were installed at Agriculture Canada research facilities in Lacombe and Lethbridge in 1999.

The specialized GrowSafe feed bunk automatically weighs feedstuffs every second, and captures the duration of each animal’s visit to the trough. The data is wirelessly transmitted to GrowSafe software, which then determines individual animal feed intake and analyzes the data for trends.

One use for this information is in residual feed intake (RFI) calculations. RFI is the difference between an animal’s measured feed intake and its expected feed intake requirements for maintenance and growth. Feed-efficient animals eat less than expected and are assigned a negative RFI value. Inefficient animals eat more than expected and have a positive RFI value.

Feed can represent more than two-thirds of all livestock production costs, so improved feed efficiency means big savings for cow-calf and feedlot producers.

Select for feed efficiency

Canadian beef breed associations, with the help of GrowSafe, are developing expected progeny differences (EPDs) for RFI, to assist in genetic selection for this trait.

“RFI is moderately heritable,” says Dr. John Basarab, senior research scientist with Alberta Agriculture based at the Lacombe Research Centre.

Basarab and his colleagues have demonstrated that low-RFI cattle require 10 to 20 per cent less feed to achieve the same levels of growth and production as their high-RFI counterparts. Selecting for low RFI can also benefit the environment by reducing methane emissions by 25 to 30 per cent and lowering concentrations of nitrogen, phosphorus and potassium in manure by up to 17 per cent.

“It takes 15 to 20 years of dedicated genetic selection to improve methane emissions, and producers must consider other traits besides RFI,” Basarab admits, “but this change is cumulative and permanent.”

Just one generation of selecting for low RFI can improve feed-to-gain ratio by one per cent in feeder cattle and replacement heifers, reducing feed costs and generating valuable carbon credits.

Monitor animal performance

GrowSafe measurement technology is also available to monitor individual animal activity at water troughs, useful information as an animal’s water intake and behaviour can be an early indicator of respiratory disease.

When compared to historical data, feed and water consumption profiles created by GrowSafe Systems can identify sick animals 24 hours ahead of a body temperature change, and up to four days before clinical symptoms appear.

Early illness detection and treatment can mean lower death losses, reduced antibiotic use and improved animal welfare.

Continual in-pen weight monitoring can also be achieved, helping feedlots better analyze animal growth trends and determine ideal marketing windows.

“We’ve measured wide variations in individual feedlot animal performance – ranging from a \$300 loss to a \$300 profit in healthy animals,” says Alison Sunstrum, GrowSafe co-CEO. “Continuous data collection including feed costs, market prices and animal growth patterns can help us determine when cost of gain equals value of gain, allowing producers to sell at a point that maximizes profitability.”

Manage big data

A small on-farm GrowSafe system collects more than 70 million data points per day and routes it to a standard personal computer (PC). Simply collecting this information is not enough, however.

“Occasionally data collection leads directly to insight, but more often than not it leads to the realization you simply don’t know what you don’t know. Data must be integrated and relevant in terms of whole-farm reporting or it won’t have much value,” Sunstrum says.

Managing and analyzing large data sets requires unique approaches, and GrowSafe has received international acclaim for its methods of managing big data in a farm environment.

“Each day, statistical process control routines and predictive learning algorithms automatically mine the data we collect, comparing individual animal and group patterns against historical data profiles for sick animals and rate-of-gain trends. When we connect on-farm PCs to our GrowSafe servers over the Internet, we can process vast amounts of sensor data into simple, easy-to-use information,” she explains.

“We offer our system as a turn-key analytics solution, and this will likely be the way of the future for most precision agriculture technology.”

A growing number of beef, sheep, goat and dairy producers around the globe are investing in GrowSafe systems. At a cost of \$6 to \$12 per head, it can be an attainable decision-making tool for seed-stock producers and feedlots.





Future innovation

Sunstrum believes the pace of technological advancement will continue to progress rapidly.

“The Internet of Things (IoT) is an awkward buzzword, but by connecting everyday things to the Internet we will further change many aspects of agriculture and everyday life. IoT is driving the cost of sensors, connectivity and technology down. Some IoT ideas – such as connected coffee pots – might not be overly practical, but on the farm IoT may see some of its greatest utility.”

As the cost of technology continues to decrease, there's sure to be more competition in the market for individual animal monitoring devices. GrowSafe plans to stay ahead of the curve by improving its pasture feed intake and forage production monitors, developing a means of automated medication administration, and enhancing its ability to collect and analyze genomic and animal health data.

“The only limitation for the future will be our imaginations,” Sunstrum maintains. ■

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 Follow Trish: [@TrishHenderson3](https://twitter.com/TrishHenderson3)

NEW LIVESTOCK TECHNOLOGIES TO WATCH

RFID has been around for a while, but a number of up-and-coming technologies could soon offer alternate means of on-farm data collection for beef producers.

Ultra-high frequency RFID

This technology goes beyond today's low-frequency RFID tags, enabling scans from up to 20 feet away, and can read more than one tag at a time. Possible applications include recording individual animal movements during sorting sessions and on-trailer installations to generate electronic shipping manifests for improved traceability.

Smartphone RFID tag readers

Currently, specialized readers are required to scan RFID tags. The Radio Frequency Identification Application Development Lab at SAIT Polytechnic in Calgary developed a smartphone reader that can read both low-frequency and ultra-high frequency RFID tags, enabling producers to record and access RFID data with existing on-farm technology.

Activity trackers

Accelerometers, the devices measuring movement used in human fitness tracking, can be attached to livestock RFID tags. Possible applications include remote monitoring of feeding behaviours and activity levels, providing data that can be analyzed to detect illness or disease in its early stages when treatment is most effective.

Drones

The use of remote-controlled, unmanned aircraft to scout crops for weeds and signs of disease is becoming more common. Similarly, drones equipped with RFID scanners can monitor livestock herds for both inventory tracking and animal health purposes even in remote pastures.

Near field communications (NFC)

Today's smartphones all come equipped with NFC technology that enables wireless communication between devices. Someday, NFC technologies could replace RFID in agricultural applications and facilitate automatic cloud-based, two-way communication along the value chain.



HOW THE CANADIAN DOLLAR IMPACTS THE FARM EQUIPMENT MARKET

J.P. GERVAIS
FCC CHIEF AG ECONOMIST

The strength of farm cash receipts and the price of equipment are both significant drivers of farm equipment purchases.

- A weaker Canadian dollar raises cash receipts, potentially increasing the demand for farm equipment, but it also makes new equipment imported from the U.S. more expensive.
- In the current ag environment with tighter profit margins, Canadian producers may be more price sensitive than otherwise.

A rebound in farm equipment sales may have to wait until 2017.

Read the full report at
fcc.ca/FarmEquipmentSales

.....
@jpgervais | Blog: fcc.ca/AgEconomist



AgDay.ca | [#CdnAgDay](https://twitter.com/CdnAgDay)



Top 7 practices driving farm financial success

From a joint study commissioned by Agri-food Management Institute and Farm Management Canada: No matter how big or small your operation is, what you produce or where you farm in Canada, investing in farm business management will drive your success.



.....
Too much to handle all at once? Try to check off one or two during the less busy cycles – you'll still be making progress.

Source: *Dollars and Sense* report, AMI and FMC

6 ways to spot a great business partner

BY KIERAN BRETT



If your family members don't suit your plans, cast your net a little wider.

Traditionally, in Canadian agriculture, it's been relatively easy to find a potential partner for your next great farm business idea.

The complete list of candidates could generally be found around the dinner table. Family – your siblings, in-laws, parents and grown children – would have first crack at the opportunity.

According to Dean Klippenstine, partner with MNP in Regina and director of primary producers, this dynamic is changing. Farms are now bigger, fewer

family members are likely to be farming with you and not everyone has the skill set to make a 21st-century farm enterprise tick.

“There's still a lot of pressure to bring in family,” Klippenstine says, “but we've seen a number of examples of bringing in non-family members as partners.”

You've likely heard of business partnerships that started off well but in time became dysfunctional, unproductive and ultimately failed. In Klippenstine's view, partner-seekers need to be careful and systematic in choosing who to work with.

Recommendations

He offers six recommendations. Of course, many of the same guidelines that can help you find a worthwhile business partner will also be of value in securing promising employees with potential to take equity one day. In both cases, skills and attitude are paramount.

1 | Do it for the (long-term) money. When family members go into business, there may be a host of competing financial, personal and emotional factors at play. When you consider a business partner from outside the family, you let all that go. "First, you need to make sure you want to be in a partnership," Klippenstine says. "From there, you need to be clear why you're doing it. It's not for the sake of benevolence."

2 | Seek energy and passion. Suppose you're a 50-something farmer with a good land base and secure finances. At the same time, computers and marketing are not your strengths. As Klippenstine sees it, your ideal partner could be a 30-year-old who loves technology and wants an opportunity with upside. Your young partner could be your ticket to increased revenue in the years ahead, even if you want to slow down a bit. "Target people who want to be farmers," Klippenstine advises, "and who have youth, energy and spirit."

3 | Commitment beats capital. Is there another industry that overcame its family-first tendencies and found a way to bring in fresh ideas and energy? Klippenstine points to machinery dealerships. Beginning in the 1980s, some dealerships began to offer small stakes in the business to key people such as service managers.

These small shareholders stayed loyal, added to their stake over time and today, very often own the place where they once punched a clock.

"Owning a small share of the business established their commitment to the organization," Klippenstine says. "In agriculture, as the business has become more capital-intensive, the number of people in their twenties who can buy in has decreased. Sometimes, the best way to get people on board is to recognize they want some kind of an equity stake."

4 | Seek complementary needs. The senior partner has land, equipment and capital. The junior partner has youth and enthusiasm. This type of partnership can work well for both parties. Still, Klippenstine cautions that partners needn't be a generation apart. "One of our most successful non-family partnerships has only five years between them," he explains. "One needed capital, and the other needed high-end labour. And it's worked really well."

5 | Look far and wide. You're hunting for a business partner so your farm can grow, even if you cut back a bit. You're looking for youth and commitment, but an older person could work in the right situation. Now, where do you find this person? Klippenstine's advice is to take your time and consider it carefully. Is there a neighbour who's great at production, but seemingly short of capital? Is anyone you know coming home from university and weighing their options?

"It doesn't have to be someone who's actively farming," he says. "It could be people who are already in our industry or are peripheral to our industry. Maybe you know a young agronomist

in town. He or she could bring a lot to the business, depending on your skill set and what you're looking for."

6 | Sweat the details up front. Those disastrous business partnerships you hear about? Fact is, many of these were doomed from the start because the parties didn't have their expectations aligned out of the gate. Klippenstine recommends that prospective partners agree on who does what and how the money will work. Legal advice at this stage could save headaches later.

"Business arrangements can vary substantially," he notes. "My advice is, don't ever bring in a partner with the idea you'll be farming separately. Farm as one unit and divide up the returns however you negotiate."

For now, many Canadian farmers will continue to look within the family for prospective partners for new business ventures. If your family members don't suit your plans, however, cast your net a little wider. From Dean Klippenstine's perspective, many of these new-style farming partnerships are working well, for both partners.

"It's starting to happen and it's something I think is going to be more common as agriculture in Canada continues to mature," he says. "I think we'll see more of this in the future, not less." ■



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The future belongs to those who are fast

What equipment innovations do you see for agriculture in the years ahead?

At the University of Illinois, they have developed what they call the 'AgAnt.' It's a prototype for an automated robot that can assess and detect stress, disease, weeds, soil status and pests. And at Edith Cowan University, they're working to develop a 'photonic weed detection system.' It aims a series of laser pulses at the field, which are reflected back. A photo-detector then analyzes the information and provides instruction to a spray cylinder and valve as to where to apply a treatment.

I find it increasingly difficult to keep on top of many trends, simply because it is happening so fast. Just five years ago, I was on stage in Las Vegas speaking about this fascinating new, future idea of '3D printing.' And then, just last year, I found myself on stage in front of a group of dental professionals, talking about the fact that 3D printing of dental implants, crowns and other implants, was coming into the industry at a very fast pace. 3D printing is expected to have ramifications for agriculture too. For instance, your local equipment dealership might in some cases be able to "print" a replacement part that you need.

You've said there have been some stunningly bad predictions in past decades. As we consider the range of current predictions, how should we sort the good from the bad?

That's a tough one. Maybe the best 'worst' predictions were the ones that rockets would never reach the moon, or Bill Gates's comment that 640K should be enough for everyone! And yet, some people carry it to extremes suggesting we will soon have elevators that will take us to space or to the moon.

How do we sort out the real from the fanciful? Be open, but cautious.

You note that aggressive indecision often kills innovation in companies. Why is this happening?

During the economic downturn in 2001-02, I noticed that many of my clients, regardless of the industry, seemed to have lost their sense of direction.

Quite simply, people decided not to make decisions – and they seemed to like it. The result is an economy in which everyone seems to be stuck in a rut, unwilling and unable to move forward.



Advice from a leading futurist on how to manage in a rapidly changing business environment.

JIM CARROLL

Acknowledged as one of the world's leading global futurists, Jim Carroll has an extensive list of blue-chip clients and has delivered keynote addresses around the world. He has operated his own advisory firm, J.A. Carroll Consulting, since 1989.

Science is real. Science is fast. Science is accelerating. And agriculture is science.

Why is this happening? In part, fear of the unknown. And that extends into the world of agriculture. We have a lot of farmers who are afraid to make decisions because the next unforeseen event might prove to have negative consequences.

So what do you do? Do you wallow in indecision, or make aggressive moves to position for a future in which ag only has an upside? I'm in the latter camp.

First, look for the warning signs: a mindset that is averse to any type of risk, an absence of any new product or marketing initiatives, or an organization that is stuck in a rut, wheels spinning, and no one has decided even to call a tow truck.

Second, realize that aggressive indecision means you'll likely have to respond to external pressures faster than ever before. That's because while people have learned they can hold off until the very last minute, they are also learning they can still get things right. This leads to a business cycle that involves extended periods of frustrated waiting, followed by a blur of activity as organizations rush about to respond to customers' demands for instant action.

Third, be prepared to make bold decisions.

Want to test it? Find the one big decision you've been deferring the longest, and decide one way or the other. Right now.

Technological change has been rapid in the past two decades. Will the rate of change slow, stay the same or accelerate in the years ahead?

It's certainly going to accelerate – that's why my tag line has become 'the future belongs to those who are fast.'

There are numerous reasons why it is speeding up. Certainly the idea of 'crowd-thinking' is having a big impact. We've got this big, global collaborative thinking and research machine with the Internet today.

Science itself is accelerating. The new global mind generates new knowledge at furious rates. We're going from 19 million known chemical substances today to 80 million by 2025 – and five billion by 2100. The discovery of a single chemical substance permitted Apple to miniaturize a hard disk for the first iPad, which led to the birth of a new billion-dollar market.

The acceleration of science has profound implications for agriculture, since much of ag is science-dependent. Consider bio-genomics. The cost to sequence human, animal and plant genomes is collapsing at the same pace that the cost of computer chips collapsed.

Science is real. Science is fast. Science is accelerating. And agriculture is science. ■



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The end of 'bigger is better' for farm equipment?

BY PETER GREDIG

I've come to learn that monitoring technology and anticipating where it will take us in agriculture requires a strong curiosity and an open mind. Last winter, I heard a speaker who challenged just how open my thinking was.

Dr. Scott Shearer is an agricultural engineer from Ohio State University. He predicts the long-established trend toward ever larger equipment is not only going to end, but we will see this trend reverse in a dramatic fashion in the future.

Consider that our primary motive in adapting larger equipment is efficiency. One person driving a tractor pulling a 60- or 80-foot implement is much more efficient and can cover more acres per man hour than a 30-footer. Bigger is better.

Of course, horsepower requirements rise as we put wider tools behind the tractor. The capital costs are enormous for assets that sit idle for much of the year, and the weight of mega tractors, seeders and carts creates an undeniable soil compaction issue. Where does it end, and what are we doing to our soils?

But what happens when we no longer have an operator sitting in the driver's seat – when there is no driver's seat? Doesn't the whole equation change? If we are headed toward a world with driverless tractors, could the big, high-horsepower tractor and large implement be replaced by numerous small robotic drone tractors, each with a much smaller implement?

I was initially dismissive of the concept, but can't stop thinking about it. A fleet of small robotic tractors would work 24 hours a day. They would not be built to last 30 years or more like our existing equipment, and could potentially be much cheaper because a lot of the costs of today's equipment is about operator comfort and ease of operation.

Shearer suggested we might be looking at very simple 60- or 70-horsepower robots with economical and easy-to-fix gas engines. Could six small robotic tractors



What happens when we no longer have an operator sitting in the driver's seat – when there is no driver's seat?

with 10-foot implements replace a single 450-horsepower tractor with a 60-foot implement?

It's possible the ownership model could change as well. Golf courses lease fleets of golf carts for tournaments. Maybe something similar would arise for fleets of small robotic tractors that never rest and move from field to field as required.

It's a lot to think about and it's not going to happen overnight, but when we remove the human sitting in every tractor, the whole ball game changes. Once you stop chuckling at this crazy idea, keep thinking about it. Maybe bigger is not going to be better in the future. ■

Follow Peter: @agwag

Be careful, Grandpa and Grandma, we need you

BY MARK CARDWELL

“It’s a very delicate topic, but you must broach it if you perceive a real safety threat. . .”

Time and tide wait for no man, famed English poet Geoffrey Chaucer once wrote. His meaning was that no one can stop the march of time. This has important ramifications in agriculture, where people often continue working into their 70s and even beyond.

Regular exercise can help slow the effects of aging, but eventually the ability to perform certain tasks will diminish. Reaction time slows. Hearing and eyesight fade. All these factors lead to an increased incidence of farm accidents among seniors.

According to the latest numbers from the Canadian Agricultural Injury Reporting system, producers age 80 and older are the group most at risk of sustaining grievous injuries on the farm.

They represent nearly 20 per cent of the 1,975 farm deaths recorded in Canada between 1990 and 2008, with a fatality rate of almost 80 deaths per 100,000. Compare that to the overall fatality rate of 13 deaths per 100,000.

Producers over age 60 represented roughly 40 per cent of all farm deaths. Seventy per cent of those fatalities were machine related, with the three most common causes being rollovers, run overs and entanglements.

What should you do when Grandpa or Grandma no longer appear able to safely

handle livestock or drive the grain truck or tractor?

“It’s a very delicate topic,” says Quebec City psychologist Richard Marcotte. “But you must broach it if you perceive a real safety threat to them or others.”

Marcotte says the most important thing is to choose the right time and place.

“You want to do it in private, not while the person is doing something else, or in front of people, so you don’t embarrass them,” he says.

“You must be diplomatic, but forthright. Say something like, ‘Dad, I’ve got something very important to tell you, because I care about you.’ Then spell out the problem frankly: ‘I think you’re no longer able to drive the tractor safely, that it’s dangerous for you and others.’”

Once you’ve named the problem, Marcotte says it’s important to ask the person what they think.

“Don’t lecture them,” he cautions. “You have to listen.”

If they react with anger or emotion, Marcotte recommends ending the conversation – with the caveat that you’ll discuss it later.

“Give them a day or two to digest it,” he says. “But if you’re convinced it’s a question of security, come back to it. Don’t give up.” ■

5 FACTORS

THAT CAN IMPACT SAFETY
BEHIND THE WHEEL

These common changes in health can affect your ability to safely operate farm machinery.



Stiff joints and muscles that make climbing, twisting and turning difficult



Trouble seeing dashboard gauges or field obstacles and obstructions



Trouble hearing the engine noise, your cellphone or a 2-way radio



Slower reaction time and reflexes when braking or turning



Medications that cause drowsiness or have other dangerous side effects

Discuss any concerns with your doctor, and don’t risk hurting yourself or others.

Source: National Institute on Aging

FCC Drive Away Hunger

850,000 Canadians use a food bank each month
36 per cent are children

Fight hunger close to home

Agriculture is a community. You'll often hear about neighbours chipping in when a farmer needs help during harvest. That's the kind of spirit you'll find with FCC Drive Away Hunger. We collect food from coast to coast, and the food you collect goes straight to your community.

Canadian producers take pride in providing safe, high-quality food that feeds the world. With FCC Drive Away Hunger, we can help get that food to the people who need it most.

Thanks to community partners and friends like you, FCC Drive Away Hunger has raised more than 27 million meals for food banks across Canada – and we're pretty proud of that.

Get involved

Until October 14, you can bring food or cash to the FCC office nearest you, donate money online at FCCDriveAwayHunger.ca, or give what you grow by donating some of the proceeds from your field, bin, livestock or greenhouse.

All cash donations go to the food bank of your choice and all food donations go to your local food bank. So you know your contribution will help fill empty plates.

Special thanks to our platinum partners BDO Canada, TMF Foods Inc., Dedicated Harvesters, Courchesne Larose and Chenail Fruits & Légumes, and national partners Parrish & Heimbecker Limited, Windset Farms™, Co-op, Solis Foods Corporation, AGT Foods and BroadGrain Commodities Inc. ■

Join the drive

Every FCC office across the country is accepting donations. Tractor tours are planned in B.C., Manitoba, Ontario, Quebec, New Brunswick, and in Regina, home of FCC corporate office.

Visit FCCDriveAwayHunger.ca for more information.

We all share the same table. Pull up a chair.



"We take pride in knowing we would feel safe consuming any of the crops we sell. If we would not use it ourselves, it does not go to market."

- Katelyn Duncan, Saskatchewan

"The natural environment is critical to farmers - we depend on soil and water for the production of food. But we also live on our farms, so it's essential that we act as responsible stewards."

- Doug Chorney, Manitoba



"The welfare of my animals is one of my highest priorities. If I don't give my cows a high quality of life, they won't grow up to be great cows."

- Andrew Campbell, Ontario



Safe food; animal welfare; sustainability; people care deeply about these things when they make food choices. And all of us in the agriculture industry care deeply about them too. But sometimes the general public doesn't see it that way. Why? Because, for the most part, we're not telling them our story and, too often, someone outside the industry is.

The journey from farm to table is a conversation we need to make sure we're a part of. So let's talk about it, together.

Visit **AgMoreThanEver.ca** to discover how you can help improve and create realistic perceptions of Canadian ag.



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