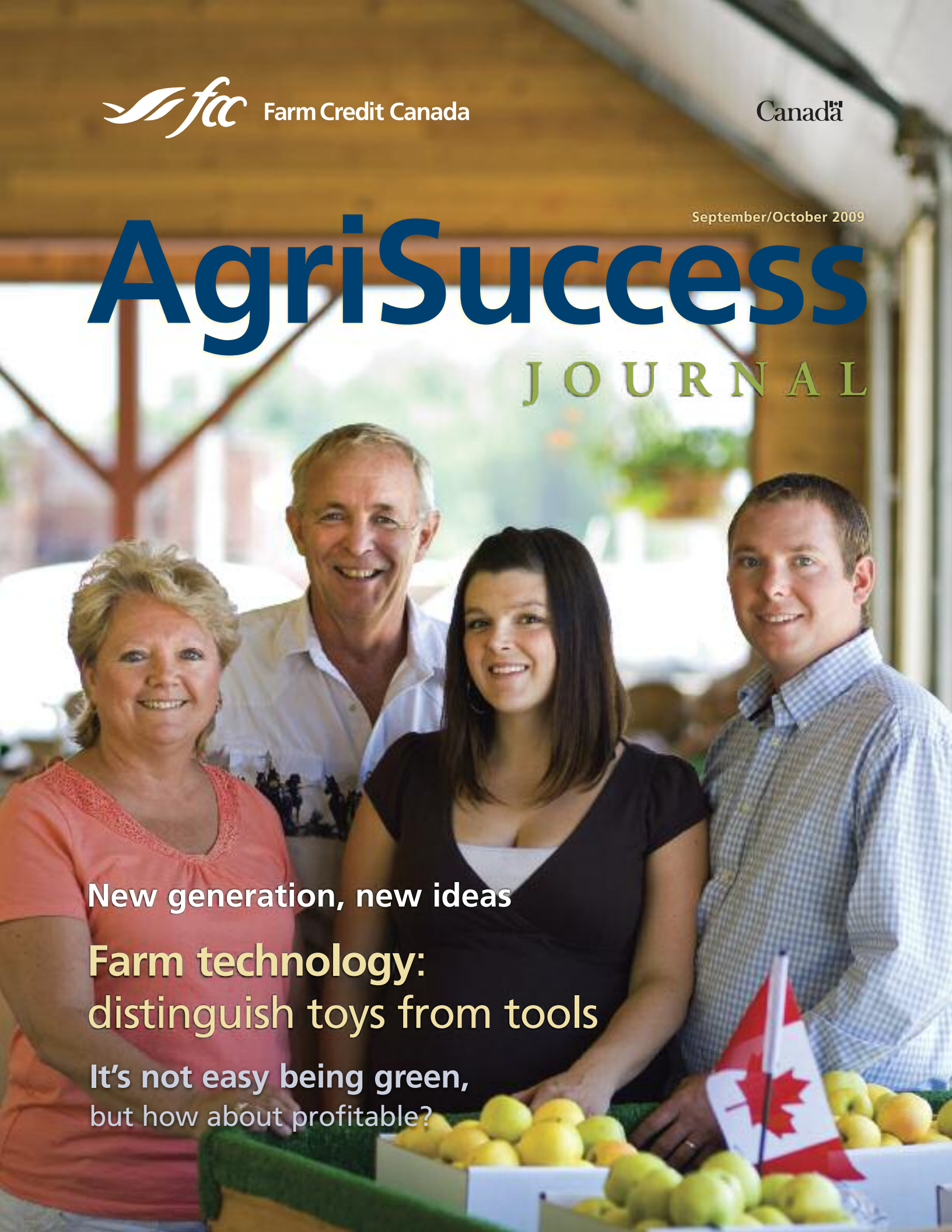
Farm Credit Canada

Canada

September/October 2009

AgriSuccess

JOURNAL



New generation, new ideas

Farm technology: distinguish toys from tools

It's not easy being green, but how about profitable?

In this issue

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AgriSuccess Journal is published bi-monthly by Farm Credit Canada.

FCC is committed to advancing management practices that lead to success in Canadian agriculture. FCC believes in this success and proudly brings you AgriSuccess Journal.

www.fcc.ca/journal

On the cover:

Kathy, Bruce, Sara and Troy Harker from Cawston, B.C.

Cette publication est également offerte en français.

AgriSuccess Journal has been honoured with industry and trade publication awards, including:

- Canadian Farm Writers' Federation award for periodicals; Bronze 2006, 2007, Gold 2008
- Canadian Agricultural Marketing Association (CAMA) Awards; Merit 2006, 2007

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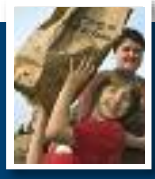

Letter from the editors

KEVIN HURSH AND ALLISON FINNAMORE

Piloting the massive Class 8 combine is a 20-year-old who is very comfortable with technology.

The combine is equipped with an auto-steer system, so Kim only has to turn the outfit around at the end of the field. The monitor shows her each harvest pass and her location in the field. With its auto-feed system, the combine automatically adjusts its speed to optimize the amount of crop going in.

Kim can adjust all the combine settings on-the-go. In fact, the combine "remembers" the settings for each crop so with the push of one button, she can change the settings from one crop setting to another.

The yield monitor provides an ongoing readout of bushels per acre and the moisture content of the harvested grain. Linked to the GPS, the yield monitor computer is storing information for a detailed yield map.

The 40-foot header has automatic height adjustment, but Kim keeps a watchful eye for any malfunctions. The combine has monitors with warning bells and lights on all the major functions. All the technology allows her to multi-task.

Today, she's working on her laptop. After harvest, she's heading back to university and she's checking out her options for classes in the second term.

There's digital cell phone coverage in this field so Internet access is almost as good as high-speed, giving her the chance to check Facebook and Twitter. Oh, and Kim alternates between the satellite radio and her iPod for listening to her favourite music when she isn't talking or texting on her cell phone.

Not all equipment operators are employing this much technology all at once, but this example is increasingly common.

Rather than the cutting edge, early adopters of technology are sometimes said to be on the bleeding edge because technology isn't always friendly or profitable in the early stages. However, if you wait for technology to be perfected or to quit evolving, you'd still be using a rotary phone.

Overall, technology is rapidly improving at the same time that the price tag is dropping.

As you may have guessed, technology is the theme of this edition. There are so many new advances that we struggled with what to highlight. We're likely to revisit this theme in the not-too-distant future, so if you have ideas for future stories, we'd like to hear them.

You can reach us by email at kevin@hursh.ca or allison@finnamore.ca.

AgriSuccess Journal is a magazine dedicated to helping producers advance their management practices by providing practical information, real-life examples and innovative ideas that foster personal solutions.

AgriSuccess JOURNAL

This month's contributors

Kevin Hursh, Editor
Kevin is a Saskatoon-based consulting agrologist specializing in communications. He has been an agricultural journalist and broadcaster for more than 25 years. Kevin also operates a grain farm near Cabri in southwestern Saskatchewan, growing a wide array of crops.

Allison Finnamore, Associate Editor
Allison specializes in cultivating words. Based in New Brunswick, she is an agriculture and business communicator with nearly two decades of experience. She contributes to publications nationwide and works to help industry promote farming and rural living.

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Hugh is a specialist in agricultural communications based in Ormstown, Que. A graduate in farm management from Macdonald College (McGill University), Hugh is a seasoned journalist and broadcaster.

Lorne McClinton
Lorne has worked in the communications field for the last 20 years as a journalist, photographer, scriptwriter and corporate writer. He divides his time between Quebec and his grain farm in Saskatchewan.

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David Schmidt
David is associate editor of Country Life in B.C. and contributes to various regional and national agricultural publications. He grew up on a mixed/dairy farm in the Fraser Valley. He was named B.C.'s Agriculturist of the Year for 2000.

Peter van Dongen
Peter is an agricultural journalist and communications consultant based on Vancouver Island. Born and raised on a dairy farm, Peter has work experience with many different types of farm operations.

Is new technology worth the cost?

BY LORNE McCLINTON

Technological advances in farm equipment have been truly remarkable in the past decade. Robots milk and feed our dairy cows. Combines with guidance programs and auto-feed almost run by themselves. While the technology is new, the reasons behind it aren't. The desire to save time and increase productivity is as old as agriculture.

It's easy to imagine how early Mesopotamian farmers reacted when a neighbour came to the field one day carrying the first hoe. Everyone would have watched him closely; a few would have made snide comments, but as soon as the advantages became apparent, the rest would have rushed out and built their own.

Almost every farm uses technology that would have been considered science fiction in 1959.

Like our Neolithic forbearers, we quickly buy into anything that dramatically increases our productivity – if it doesn't cost too much. Bigger expenditures, with less obvious payback, are more closely scrutinized. We debate whether it's a want or a need, and ask ourselves if the upgrade will increase our efficiency and bottom line enough to justify the cost.

There is now so much choice that deciding what to buy has never been harder. With a pile of technical and marketing information, it's difficult to sort the wheat from the chaff.

Rick Atkins, head of Alberta Agriculture's Technology and Innovation Branch in Lethbridge, recommends taking the time to research products and processes thoroughly and not take all information found on the Internet too seriously.

"Some of these claims are often sales-based and not backed with reliable scientific data," he says.

Looking at who manufactures the product and where the idea came from is a good place to start. Do they have a good reputation and stand by their product? Do they have an authorized local dealer or distributor you can turn to for service or support?

Publications by third-party organizations such as Alberta Agriculture's Technology and Innovation Branch can help when you are trying to make buying decisions. Their paper on GPS technology, for example, shows that a seeding overlap of just five feet on a quarter-section of canola can cost over $1,300 each year after fuel, fertilizer, seed and equipment costs are factored in.

Atkins recommends you ask for references, such as names of others who have used the product or machinery for years and have no vested interest in the company. Local data is still the key. If you're buying different ground openers, you have to figure out what works best for your land, your climate and what is appropriate for your production practices.

Canadian producers will continue to adopt new technology as it becomes available. Almost every farm in the country uses technology that would have been considered science fiction in 1959. It's hard to imagine the systems our grandchildren will be using in 2059, but the technology and productivity will no doubt astound us. ❖

Modern dairy parlour, photo courtesy of DeLaval International

Taking GPS to the next level

BY KEVIN HURSH

Technology begets technology. Each advance makes new progress possible.

When Canadian producers had ready access to the first arc welders, they were able to invent and develop all sorts of new farm machinery. Today, it's global positioning. An increasing number of technological advancements are based on the GPS platform.

Reliance on GPS is producing demand for more accurate and reliable systems.

Sometimes the technology cart gets out in front of the horse. Leonardo da Vinci was the first to conceptualize the helicopter. His sketch of the Helical Air Screw is dated 1483. Of course it would be many centuries before technology could make a working helicopter a reality.

Something similar happened with yield mapping, made possible with GPS in concert with yield monitors on the combine during harvest.

Very accurate yield maps were possible, but it wasn't easy to use that information for precision applications of fertilizer or fungicide. It takes more than a yield map to determine what areas of the field are likely to have an economically viable response to an additional input.

Scott Day remembers attending precision farming workshops back in the '90s that were overly optimistic about what could be accomplished with the emerging technology.

Today, the diversification specialist with Manitoba Agriculture marvels at how quickly producers have adopted GPS guidance systems for their field operations. And he encounters producers everywhere who are finding new uses for the technology.

On a farm in Iowa, a producer is using a guidance system to plant and harvest 40-foot strips of corn interspersed with 40-foot strips of soybeans.

This configuration maximizes the edge effect on corn yields, where the edge of corn crops typically yield better than the rest of the field.

On a farm in West Australia, a producer is row-cropping wheat. Precise guidance and a shielded row sprayer allow him to use a non-selective herbicide like Paraquat in between the narrow rows of wheat to control Roundup-resistant ryegrass.

In Saskatchewan, the Seed Master air drill employs GPS guidance as part of a system to seed crops between the stubble rows of the previous crop. The rival Seed Hawk air drill has Sectional Control Technology to virtually eliminate overlap.

Reliance on GPS is producing demand for more accurate and reliable systems. Unfortunately, there may be a glitch on the horizon. The U.S. Government Accountability Office issued a report in May warning that the quality of GPS could begin to deteriorate as early as next year due to a lack of new satellites being deployed. The U.S. Air Force has struggled in recent years to build GPS satellites within cost and schedule goals.

In response, many producers are moving to subscription-based systems that require a monthly or yearly fee. Some are moving to RTK (real time kinematic) guidance, even though that requires a significant investment.

Now that producers have a taste of what GPS can do for their operations, they don't want to lose this technological platform. It's like asking them to give up their welders. ❖

Iowa producer uses GPS to mix strips of corn and soybean

Four generations of the Harker family in Cawston, B.C., under their trademark Snow Apple tree

New generations bring new ideas

BY DAVID SCHMIDT

It's a family affair for Troy Harker, his wife Sara and brother Jason. They decided to become the fifth generation on their small 27-acre farm in Cawston, B.C. In addition, the family had to decide how to make the operation remain viable for Troy and Jason's parents, Bruce and Kathy, and their long-time worker Robert Slade.

Rather than increase their size, the Harkers chose to add a fruit winery to an already widely diversified operation started by William James Manery in 1888. For them, this was another step in a history of change and diversification. Over 120 years, each generation added something new to a farm that began by provisioning gold miners.

In the early 1900s when Sam Manery joined his father, the family planted their first fruit trees, including a Snow Apple that still stands on the farm. With the addition of six roots to represent the farm's five generations and the sixth in training, the tree is the logo for Harker's Organics and Rustic Roots Winery.

In 1961, Sam's daughter Marjorie and her husband Ken Harker added a retail stand to take advantage of their location along a major highway. In 1973, Bruce and Kathy, the fourth generation, began by looking backward.

"Bruce didn't like the idea of keeping his kids in the house after spraying," Sara says.

Like his grandfather had done before the Second World War, he decided to grow organically, as some of his neighbours were doing. The idea caught on in the community and the Similkameen Valley now bills itself the organic capital of Canada.

Bruce continued the diversification by starting the Harvest Moon wholesale brokerage, which markets local organic fruit and produce in B.C., Alberta and Ontario. It's also part of the B.C. School Fruit and Vegetable Snack Program which provides ready-to-eat snacks to 750 schools each week.

It's all about family and the history we have.

"We provided about two million apple pieces this year," Sara says. "It allows us to showcase organic apples and the Similkameen Valley. Imagine the thrill of knowing a child is tasting an Ambrosia apple for the first time."

When Troy, Sara and Jason decided to rejoin the family farm, the family brainstormed what to do. "We needed to determine what would keep us here, keep us busy and keep us interested."

After doing a lot of research, the family chose the fruit winery, believing it would support sustainable local food, add value and complement the fruit stand.

"We use seconds (culls), which are not suitable for selling retail. Because they are often higher in sugars, they are ideal for wine," Sara says.

The winery can also help when crops are overloaded.

"A local organic grower had both his summer apples and plums come on at the same time and didn't have the manpower to pick both crops. Instead of letting his plums become compost, we harvested 3,000 pounds, turned them into a Santa Rosa plum wine and were able to give the grower a good return."

Rather than hire an outside winemaker, Sara took a winery program at Okanagan College to become the family's winemaker and seller, producing 1,400 cases of their first six wines last fall.

The business has a winery manufacturer licence, which requires it to produce a minimum of 4,500 litres a year. A specified amount must

come from the farm itself to meet Agricultural Land Reserve and other zoning restrictions.

Rustic Roots hopes to capitalize on a huge growth in interest in local wineries. There were only two wineries in the Similkameen Valley five years ago. Today, there are 11, which means more tourists and excitement about local food, local farming and family farms.

While Rustic Roots uses only organic fruit, the sulphates used in the winemaking process prevented the winery from being certified. But Sara believes new Canadian Organic Standards have sufficiently changed to permit production of a fully certified organic fruit wine.The wine shop just opened as the fruit stand was closing last October. The Harkers are looking forward to their first year of operating the fruit stand and winery in concert, and optimistic about the synergies that will generate, and looking at ways to further diversify.

"We have applied for a winery endorsement licence to sell wine by the glass. Eventually, we hope to add a restaurant and increase agri-tourism. We want to give people the experience of what it's like to live on a farm," says Sara, who also wants the farm to be available to a sixth generation.

"It's all about family and the history we have." ❖

Kaydence Harker, part of the sixth generation on the family farm

Producers find opportunity online

BY ALLISON FINNAMORE

It's a common perception that agriculture producers are less connected to the Internet than other Canadians, but the latest Ipsos Forward Research survey shows producers are quickly making up the digital divide.

In 1996, 11 per cent of Canadian agriculture producers grossing over $50,000 a year had Internet. That number grew to 73 per cent last year, just 12 per cent below the national average.

"Internet has evolved into a mainstream medium for most producers," says Marinus Van Dijk, an Ipsos senior vice-president. If you look at the total farm households in Canada, that's about 75,000 who have Internet access. "Not 100 per cent, but it's definitely mainstream."

Internet has evolved into a mainstream medium for most producers.

The growth in Internet use among producers has kept pace with the general Canadian population. Ipsos has been watching the trend for the past 12 years and publishing results in the Ipsos Forward Research survey, E-Business in Agriculture.

There's also change in Internet speed. The number of web connected commercial producers with high-speed has roughly doubled since 2006 to 69 per cent.

"That's jumped a lot, and I think it's going to continue to grow," Van Dijk says. "More farmers are on high-speed, so it makes Internet much more user friendly. That means farmers can use a lot of different Internet applications."

So with greater ease of getting online, are agriculture producers really using their Internet connection as a business tool? Van Dijk thinks so. Farm business activity by email is strong, with 40 per cent of online producers using email for business communications.

And there's growing popularity in visiting agriculture-related sites, with nearly three-quarters of online producers doing so on a regular basis – up from two-thirds in 2006. Those producers are also gathering information, with 77 per cent registering at a website to receive information on a regular basis – an increase from 62 per cent in 2006.

When it comes to shopping, most producers are looking online for non-farm related products or services. However, about a quarter bought farm equipment parts.

"And nearly 20 per cent are buying some type of farm equipment via the Internet, so there's definitely room for growth in terms of purchasing farm-related items online," Van Dijk explains.

Overall, he believes Canadian producers' growing use, comfort and skill level with the Internet puts them in an advantageous position. "They are now better equipped than ever to take advantage of all that the online world has to offer." ❖

Farm technology:
distinguishing toys from tools

BY ALLISON FINNAMORE

Which technology should you choose to get the biggest bang for your farm's buck? A global positioning system (GPS)? Auto-steering? Maybe precise soil testing or individual animal identification.

It helps to step back and look at your entire business, not just your farm operation. That's what Kevin Serfas did in his southern Alberta grain and beef farm. With eight tractors, four swathers and two sprayers, Serfas decided to equip it all with auto-steering guided by GPS.

"We have so much less overlapping, double seeding and driver fatigue," says Serfas, who farms 35,000 acres with his brother and father. "Putting in auto-steering is one of the biggest things that's happened on our farm in the last five years."

And the numbers add up. Instead of replacing the mechanical markers on seeders that kept breaking off, Serfas purchased guidance systems for the same price. That was about seven years ago. In the future, he's looking at improving efficiency in his grain business.

"What I need is some sort of technology to allow the machines to talk to each other," he says. "I'm looking for the next step."

A tractor cab is full of technology possibilities, photo courtesy of New Holland

Right now, tractor drivers monitor their own section of the field with GPS, but it's impossible to know what nearby drivers have done.

"I need something so the operators can see what others are doing too," Serfas says.

For Mark Richards, technology means more efficient communication on his 2,500-acre farm with sugar beets, corn, soybeans and wheat near Chatham, Ont. He also operates a custom spray operation and says without his smartphone, he'd have a hard time doing business.

"Smartphones, especially ones that operate some field manager programs, combine usefulness of the phone to do more than what a lot of people use the phone for," he says. "If you look at personal productivity and how you can make yourself more efficient, then they're quite useful."

Richards says having wireless access to phone calls, emails, faxes and the Internet is a huge advantage for producers.

"I no longer come home to a big whack of emails. I don't have games of telephone tag lasting for days. And I cut out a lot of phone calls by answering simple questions with a quick email."

He can also deal with important issues at the time and delete from his inbox as he goes. And by synchronizing his computer software and smartphone, he can improve field production.

In his custom spray work, Richards can check new orders by email when he's in the field. He can also cut inefficiencies, like making repeat trips to the same areas for spraying. If a last-minute order comes in while he's out spraying, chances are he can make the stop on his way back to his own farm.

For any farm technology purchase, Richards considers personal productivity, software compatibility with his office computer and how the purchase will improve field production.

"You have to look at the big picture and to do that, I explore what's available out there for software and see how it works with what I already have," explains Richards, who farms with his father and uncle. Moving the older generation into high-tech farming equipment brings its own challenges.

"Dad always compared cell phones to tractors. Cell phones become outdated every two years, and he says if he had to update the tractor as often as a cell phone, he would have never made it in farming," Richards says.

"But I tell him that the basic tractor hasn't changed since it was invented. Yet the potential for gains and efficiencies with technology is still evolving. I believe that BlackBerrys and smartphones are potentially game-changing technology, even though some may dismiss them as toys that don't do anything fundamentally different than your existing cell phone, home computer or fax."

Richards says no matter what your business, an all-in-one wireless device creates opportunities that can make or save money because you can better manage work flows and seize buying or selling opportunities you might otherwise miss.

"And now that wireless devices are learning to talk to each other, in-depth data from yield monitors and the on-board computers on tractors, sprayers and combines will soon be available on your smartphone."

And it's not just economic advantages. Bill Vanderkooi is looking for an educational edge in his EcoDairy business near Abbotsford, B.C. Today, he's turning his 50-cow dairy operation into a demonstration farm, melding high-tech equipment and traditional farm beliefs into an agri-tourism business.

Vanderkooi's plans for his launch early next year include a theatre with multi-media presentations to show the public what goes on at a dairy farm. There will also be static displays on cow comfort, feed rail systems and natural ventilation and lighting.

But the highlight of the farm will be a 10-foot glass window overlooking the robotic milking machine with a voluntary milking system (VMS) that allows the cow to decide when it's time. When she steps into the milking stall, she's measured by an automated system. If she has at least 10 litres of milk in her udder, the voluntary milking system kicks in. More hydraulic robotics and lasers take over to clean and sterilize the teats, attach the milker and wash the cow and equipment afterwards.

"I'm focused on long-term sustainability, both economically and environmentally," Vanderkooi explains. "The VMS, anaerobic digester and focus on cow comfort are key developments that will help achieve these goals. The idea is to give more freedom to the cow and the farm labourer. The result is increased productivity and makes economic sense for smaller farms."

Like these three producers, most producers have a technology wish list. While most input costs have risen over the years, technology has typically declined in price, making it easier to turn dreams into reality. ❖

Digital rendering of Bill Vanderkooi's EcoDairy business

It's not easy being green, but how about profitable?

BY LORNE McCLINTON

Farm-generated renewable electricity from solar, wind or biogas technology is attracting a lot of attention across rural Canada. While many are interested in building a green energy system, feasibility varies widely from province to province.

Currently, these sorts of projects make the most sense in Ontario, where the province's new green energy legislation goes a long way toward making even the smallest projects moneymakers. Even these, however, can come with pitfalls to trap the unwary. Producers should be sure to do their homework before they start spending a lot of money.

"The first two questions you need to ask yourself are, 'Who is going to buy my electricity?' and 'Can I make money at their tariff rate?'" says Steve Clark, an energy and crop engineer with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). While profitable tariff rates aren't the only reason people build green energy projects, most producers will decide not to proceed if rates are too low.

New tariff rates hadn't been finalized at the time of writing, but it's expected that Ontario Power Authority will offer 20-year contracts paying six cents per kilowatt hour for electricity generated using small biogas systems, and up to 80 cents for electricity generated by rooftop solar systems.

Since estimated costs for small rooftop solar systems are about 62 cents per kilowatt hour for 20 years, producers are practically guaranteed to make money. Clark suggests producers in other provinces check with their local power company to see if there are any green power incentives available.

Next, producers need to check out the procedures involved in getting a system connected to the power grid. Hooking up a large system might be impossible in some areas if your local substation already has a number of projects waiting in a queue.

Most systems under 10 kilowatt hours aren't too difficult to connect to the grid, but larger ones can run into problems and connection costs can become prohibitive. How much a hookup will cost depends on whether you're connecting to a single-phase or a three-phase power line, the line's voltage capacity and how far you are from the substation. If the local system is nearing the end of its life, it would have to be replaced before it could accommodate your generation and you could be charged for a portion of the cost.

"People expect that getting a grid connection would follow a straightforward process, but it has never worked out that way," says Nicole Foss of the AgriEnergy Producers' Association of Ontario. "Grid connection costs vary enormously. It cost $30,000 for one system to go online several years ago, but we've had other same-size systems where the connection cost estimate was over a million dollars."

Foss says that 100-kilowatt-hour generating systems are the maximum size single-phase power lines can handle. That means if tariff rates and connection fees aren't structured to make 100 kilowatt hours and smaller systems profitable, on-farm renewable energy projects won't be practical in broad swaths of rural Canada.

Assuming you can get a tariff rate and grid connection fee that makes it feasible to generate renewable energy on your farm, the next step is to find the right system for your farm. That's easier said than done.

Dan Hilborn, a byproduct engineer and renewable energy expert with OMAFRA in Guelph, Ont., says enrolling in one of the green energy courses offered by industry and government is a good place to start.

For example, IBBK, a German biogas company, combines an in-depth course on biogas systems with a tour of on-farm installations across Europe. The course and tour will set you back $10,000, but the cost is insignificant compared to the $500,000 construction cost of a methane digester.

"If you are building a biogas system, you want to choose a company that's got a track record and has at least 50 to 100 installations (worldwide)," Clark explains. "Most biogas systems use German technology, but there are a few good American ones too."

Clark recommends calling the parent company and asking if the local company trying to sell you the system has the rights to distribute in Canada. You should be wary about buying from anyone trying to sell you a new, designed-in-Canada system. You don't want to be their first client.

"You've got to remember you've got an industry that is still in its infancy," Hilborn says. Exercise normal business discretion in selecting your supplier.

Small wind generators have had challenges getting the specified yields too. Hilborn knows of one case that didn't even come close to generating what was expected. He recommends asking the supplier for proof that the system will generate the advertised yields. And ask what will happen if it doesn't.

"There will be a lot of interest in solar panels now that the new green energy program is out," Hilborn says. "Check to be sure that any solar panels you buy will meet the program's (still to be defined) domestic content requirements."

You also want to look at your insurance coverage. You might have a $100,000 investment on your roof, so you want to be protected if a hailstorm or a lightning strike destroys it. Taxation and zoning also need some clarification.

Technical problems can be an issue too. Clarify what happens when the system needs repair. Does anyone in Canada stock spare parts? Is there a local, authorized troubleshooter who can fix problems? As with most farm purchases, the best price isn't always the best buy.

Despite its growing pains, green energy holds a lot of potential as a good revenue stream for Canadian producers, particularly now in Ontario. After all, how often do you get the opportunity to sign contracts that lock in a profit for 20 years? ❖

Where to start

Download the OMAFRA AgriEnergy Resource Kit at the AgriEnergy Producers Association of Ontario website (www.apao.ca). While some of the information is specific to Ontario, there's a lot for anyone thinking of installing a system. You'll also get links to many factsheets and organizations in the field of green energy.

Want to see if a green project is financially viable on your farm?

Visit Integration of Renewable Energy on Farms at www.farm-energy.ca. The site, operated by Agriculture and Agri-Food Canada and Natural Resources Canada, has calculators and info on design process, funding programs and interconnectivity issues.

Open your world with communications technology

BY HUGH MAYNARD

Agriculture was slower than most sectors to adopt and embrace the digital world. The role of the desktop computer was, for many years, marginalized within the management framework of the farm.

Even now, it's "hidden" computers that run everything from milking machines to ventilation systems, and control every moving part within a tractor.

One of reasons that the desktop computer still plays a lesser role than in other businesses is that until recently high-speed Internet hasn't been available for many farms. A computer plus high-speed Internet equals a gateway to the knowledge economy. Those labouring along on dial-up know only too well all the things that can't be done without high-speed. Notwithstanding the time wasted loading web pages at a snail's pace, management webinar series such as those offered by the Canadian Farm Business Management Council, and other online learning tools, are all but inaccessible.

Communications technology is essential for any development.

Communications technology is essential for any development – social, business, political. Look at what Obama did with communications technology in his bid for the presidency. If you don't have access to high-speed, and the local telecom is not about to oblige, there are two ways to get it – and the sooner the better.

Satellite gives you wireless high-speed regardless of location. It can be more expensive to get DSL equivalency (standard high-speed via telephone line). It also has a latency issue (it's a long way up and back down to the satellite) that limits tools like voice-over-Internet protocol (VOIP). Still, it's way faster than the alternative and frees up the telephone line.

The other alternative is a data card (available from any major mobile phone company), which gives good speed anywhere there's cell phone service. Data cards now come with a USB connector, so along with a new mini laptop (netbook), you have computing power and high-speed for under $400.

For a smaller mobile solution, get a smartphone. I just bought a BlackBerry and felt truly stone-aged trying to type with my thumbs next to the kid on the bus hammering away at jackhammer speed. But I'm getting there, and now the knowledge economy is literally at my fingertips wherever I go. ❖

Manage fatigue

BY PETER VAN DONGEN

September is a deadly time of year to be a producer. More agricultural fatalities occur in September than any other month, according to the Canadian Agricultural Injury Surveillance Program.

It's a sobering statistic, and can be chalked up to a host of contributing factors. Not the least of which is the powerful equipment and extra workers required during harvest. But in a season characterized by tight deadlines and long hours, there's another factor that amplifies all the other risks – fatigue.

You never know if you'll have the chance tomorrow.

A recent farm safety survey conducted by FCC and the Canadian Agricultural Safety Association (CASA) found that 66 per cent of producers regularly work when tired. The same survey revealed that "time" is one of the key barriers to practising farm safety measures. Simply put, sometimes there just aren't enough hours in the day.

CASA executive director Marcel Hacault says the findings aren't surprising.

"Farmers regularly push themselves to get the job done," he explains, "because you never know if you'll have the chance tomorrow."

The risk, of course, is that working tired and working under stress increase the chance of injury. Fatigue affects us mentally and physically.

When we get tired, our reaction time slows and it becomes more difficult to assess a situation and make good decisions. We're also more prone to take shortcuts.

So how do we deal with it? We've all heard the basic steps to take to combat fatigue during a long day: drink lots of water, take regular breaks, get a good night's sleep, etc. But as a farm manager, you also need to consider how fatigue may be affecting your employees. Here are a few key points to consider:

- **Shift length.** Ensure shift lengths reflect the level of physical and mental effort required for the job.
- **Time of day.** Try to arrange it so that high-risk tasks are scheduled when workers are well rested and alert.
- **Previous hours and days worked.** The effects of fatigue are cumulative, so it's important to monitor your employees' recent work schedule. They may have "sleep debt" due to the length of previous shifts.
- **Breaks.** Adjust the frequency and length of breaks to match the length of employees' shifts and the demands of the work being performed.

Given the demands producers face at harvest and other peak seasons, there will undoubtedly be times when fatigue is a challenge on your farm – but it can be managed.

"Most of us have to work when we are tired," Hacault says. "The key is to make the period as short as possible and manage the risks we can control." ❖

New animal technologies waiting in the wings

BY OWEN ROBERTS

As society's focus on agriculture sharpens, the sector needs new approaches to satisfy consumer demand for both accountability and affordability. In livestock, researchers are developing and refining technologies that bridge the gap between keeping the public happy and keeping farming profitable.

Like other food-related technologies, cloning needs to be carefully introduced to avoid consumer backlash.

The first, and most proven, is artificial insemination. It's used by almost all of Canada's dairy industry and about 70 per cent of the pork industry, to take advantage of top genetics. Consumers don't readily recognize it, but those genetics help producers keep costs down and production up, so food prices can stay as reasonable as possible.

Other technologies are emerging. The public clearly wants producers to be "greener" than ever. To that end, researchers are developing environmentally oriented animal technologies, such as the University of Guelph's Enviropig, the world's first transgenic farm animal.

Enviropigs, which excrete what's been dubbed environmentally friendly manure, have been under review for more than five years by Canadian and U.S. authorities. If they're approved for human consumption, it's expected they'll open the door for similar technologies, such as prion-deficient cattle that may be less susceptible to BSE.

Cloning is another technology researchers consider promising. Technically, the know-how to clone animals is in place. And the advantages for producers are clear – even more than AI, cloning guarantees predictable offspring. The U.S has said meat and milk from cloned animals and their offspring are safe. But consumers are skittish. Like other new food-related technologies, cloning needs to be carefully introduced to avoid the kind of consumer backlash created by biotechnology crops.

The U.S., led by President Barack Obama, is also taking a more liberal line on stem cell research. Obama overturned the prohibition against federal funding of human embryonic stem cell research. Guelph animal scientist Prof. W. Allan King, who holds a Canada Research Chair in animal reproductive biotechnology, predicts Obama's decision could prove positive for livestock, too. King is particularly hopeful that stem cell research could lead to a deeper understanding of animal embryos, whose intricacies – such as how they're affected by nutrition and environment – are still not well known.

Closer to home, King is part of a new Canadian research network for animal embryos called EmbryoGENE, based mainly out of the universities of Calgary and Laval. The network, a world first, has a five-year, $7.9-million research budget, courtesy of the Natural Sciences and Engineering Research Council.

NSERC president Suzanne Fortier predicts the network researchers' findings "will boost Canadians' confidence in the security of their food supply and will help cattle producers choose the most effective reproduction methods for their herds."

Fortier rightly connects consumers and producers, via research. It's a position that needs to constantly resonate in Ottawa, Washington and everywhere there's a will to keep farming viable. ❖

FCC Drive Away Hunger

How do you feed a quarter-million kids every month?

It's not easy – just ask any of Canada's food banks. Sadly, almost 40 per cent of the 700,000 people who use their services monthly are children.

The first tour

FCC Drive Away Hunger began when an employee in Ontario drove an open-cab tractor and trailer through the Listowel area for eight days, camping out along the way. In the end, he raised almost 60,000 pounds of food for local food banks.

Since 2004, 13 tractor tours across the country have contributed a total of almost two million pounds. But there's still a long way to go, so we set our sights on collecting over a million pounds of food this year.

Contribute from September 14 to October 16

How do you feed a quarter of a million kids? With lots of help from FCC community partners and, of course, neighbours like you.

Bring your FCC Drive Away Hunger donation of food or cash to any FCC office or tour partner, or plan to come out and donate directly to a tractor-and-trailer tour in your area. All donations stay in the province where they're collected.

For more information or to donate online, visit www.fccdriveawayhunger.ca or call 1-800-387-3232.

Tour dates

Support a tour near you. See route maps at www.fccdriveawayhunger.ca.

Southern Alberta
October 14 – 15

Southwestern Saskatchewan
October 14 – 15

Southwestern Ontario
October 14 – 16

Central Quebec
October 13 – 15

Southeastern New Brunswick
October 14 – 16

From 4-H to your first farm

50
years/ans
1959-2009

50 years of grassroots support

Know some young farmers looking to build a career in agriculture? They're not alone. With a large number of Canadian producers expected to retire in the next 15 years, our industry's filled with opportunity for the best and brightest young farmers.

So how can young people get a leg up? FCC takes a multi-stage approach, from childhood all the way to buying that first farm business.

Starting strong with 4-H

FCC and 4-H have worked in partnership for two decades. In 2009, FCC increased its support to 4-H through the FCC 4-H 4-Ever program. Over the next four years, we'll provide $250,000 a year to the Canadian 4-H Council, with $100,000 each year of that available to local clubs – targeting rural Canada. In Quebec, FCC also supports the Association des jeunes ruraux du Québec and the Fédération de la relève agricole du Québec programs for rural youth and young adults.

FCC's previous four-year sponsorship began in 2006 and was used to increase the public presence of 4-H and position the organization for the future.

- **2006:** creating an advertising campaign guided by the 4-H Council's Youth Advertising Team
- **2007:** recruiting volunteer leaders and increasing membership
- **2008 – 2010**: raising awareness about 4-H, volunteer training and development, and continued awareness programs

Learning the ropes

A large percentage of agriculture students return directly to the farm after completing their program. And the better prepared those students are for their future in agriculture, the stronger the industry will be for everyone.

One way to encourage strong management skills is through the FCC Business Planning Award. This award is open to agriculture students at participating colleges, and rewards students who build strong business plans as a solid foundation for the future. We award students with the best business plans up to $2,500.

Many young farmers embrace new technology, so FCC also provides leading-edge farm management software for free to accounting students that use AgExpert Analyst in their curriculum. We're also on-campus with career sessions, management software training, information and learning events, and support for student groups involved in FCC Drive Away Hunger, which supports local food banks.

Putting theory into practice

For young farmers, the challenges of getting into the industry can be significant: available land, equipment costs, quota prices, etc. To give those farmers a head start, FCC has financing designed to help them improve cash flow.

In addition to manageable payments, the Accelerator Loan gives young farmers the chance to build equity over time, with up to seven years to pay back the down payment.

For in-depth insight into management issues that affect young farmers, FCC Learning programs cover topics including transferring the farm, succession planning, vision and goal setting and other management practices.

Sponsoring events and organizations like the Canadian Young Farmers Forum and Canadian Federation of Agriculture in addition to 4-H also lets us focus on young farmers.

Learn more about how FCC supports young Canadians in agriculture at www.fcc.ca. ❖

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1800 Hamilton Street
Regina, SK S4P 4L3

Publications Mail Agreement No.40069177

10-062-230-01 E 07/24/09 KMB