WINTER 2010

Newground™

A grower-to-grower Arysta LifeScience publication for farm management professionals

Higher Than Recommended Seeding Rates – Risk and Reward

"Many growers are successful at 30 and even up to 35 plants per square foot."

One Herbicide Product – Several Different Chemical Groups

"Two years from now the trade name may no longer be easy to find."

Renewable Energy On Farms

"A breakeven point may be all they are looking for to give them the go-ahead to invest."

Wade Barnes On How

FERTILITY AFFECTS WEED CONTROL

Be Our Guest:

Harlan Hentges, P.L.L.C., Edmond, Oklahoma

Farming is a wise investment

Industrialized agriculture was built on standardization – every tomato tasted the same. It might taste like cardboard, but, by golly, it looked and tasted the same as every other tomato.

Despite industrialization, things are very variable by nature. For industrialized agriculture, that is bad. But for consumers that may be good. If you buy a tomato in season from a farmer, it does not taste like cardboard. In fact, a tomato bought in season from a farmer is so good that the red round thing you buy from a big box store in January does not even deserve to be called a tomato. That, my friends, is the result of the naturally variable process of growing things. That is farming.

It seems to me that right now farmers and farming are very valuable, but they are underutilized and undervalued. Okay, this is where neo-classical economics comes in. If a resource is undervalued, the market will respond, and buyers will pay for and employ those resources. If you believe in free market economics, farms and farmers are a wise investment.

Harlan Hentges grew up in the country "seven miles from a paved road." He holds a law degree from the University of Texas and a Master of Public Affairs from the Lyndon B. Johnson School of Public Affairs. He represents farmers and ranchers.

Visit his blog at www.organiclawyers.com/blog.

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COVER STORY

Wade Barnes – How fertility affects weed control

Barnes says the biggest ROI is, hands down, nitrogen. "I'll stand in the ring and punch it out with anybody on this one. Nitrogen is absolutely, positively, number one."

Higher Than Recommended Seeding Rates – Risk and Reward

Many industry professionals use a baseline of 20 percent mortality in cereals.

Weed Population Shifts in Conservation Tillage

Are your fields plagued with hard-to-control annuals and glyphosate-resistant kochia?

Renewable Energy on Farms – Still a long way to go

The technology is great and farmers are tantalized. Payback is the show-stopper.

Farmers' Roundtable On Spring Weed Control Strategies

Ernest Meding says continuous use of Group 1 (ACCase inhibitor) herbicides has affected his weed spectrum.

Early Burndown in Conservation Tillage Systems - Get the best bang for your buck

Clark Brenzil sees a relationship between deep roots and precision seeding.

How the Critical Weed-Free Period Affects Wheat Yields

Keep an eye on your 1- to 3-leaf wheat stage. It's critical for yield.

One Herbicide Product – Several Different Chemical Groups

Your best bet is to remember and record the chemical names. Tradenames come and go.

Family Photos – Preserve the stories that go with them

Preserve your family photos and the stories that go with them – before it's too late.

Risk and Reward

HIGHER THAN RECOMMENDED SEEDING RATES

Wheat varieties differ in how they respond to higher seeding rates, but research shows many respond well to increased seeding rates. The goal of higher seeding rates is usually to achieve higher plant stand densities, which can offer growers benefits and rewards. By increasing seeding rates for hard red spring wheat, stand uniformity, kernel size uniformity, maturity and quality can be improved.

"Achieving higher plant stand densities reduces tillering, which is very important for spring wheat," explains CEO/President Steve Larocque of Beyond Agronomy at Three Hills, Alberta. "The main stem contributes half of the wheat yield, and the other half comes from the next two tillers. The higher the number of tillers, the more maturity is delayed, and this increases risk of a fall frost."

On average, it takes three or four days for a new leaf or tiller to emerge under average temperatures. This can extend to five or eight days under cooler weather conditions.

"The industry plant stand density target for hard red spring wheat in many areas of Western Canada is 24 plants per square foot," says Larocque. "However our research shows that many growers are successful at 30, and even up to 35, plants per square foot, or 180 pounds per acre seeding rate."

At Larocque's farm at Morrin, Alberta, hard red spring CDC Go has been planted with a target density of 30 plants per square foot or 145 pounds per acre. This is about 25 percent higher than average. In 2008, crop yields averaged 60 bushels per acre, followed by 51 bushels per acre in 2009. "We plan to continue using higher seeding rates to push yield, maturity and crop uniformity," Larocque says.

"Growers want to determine the best seed rate based on their seeding system, the variety and field selected as well as other factors."

Research Director Kent McKay with Vision Research Park in Berthold, North Dakota, says that traditional seeding rates for hard red spring wheat in central and western North Dakota and eastern Montana are around 1 million to 1.2 million pure live seeds per acre or about 25 to 28 plants per square foot. "Some of our research showed that seeding rates of up to 1.5 to 1.8 million pure live seeds per acre or 30 to 35 plants per square foot show some advantages," he says.

Although yields are similar between the 1.2 and 1.8 million pure live seeds rate, McKay says that test weights can be significantly higher. At higher rates, the number of tillers is reduced, making the main plant stem larger. This also increases the number of spikes per head and the kernel size.When determining seeding rates, be sure to take into account the seeding mortality rate.

"Many industry professionals use a safe baseline of 20 percent mortality in cereals and 50 percent mortality in canola. However in recent years, we have consistently found a 10 percent higher mortality rate when seeding wheat into wheat stubble. This is likely a result of seeding into cooler soils under heavier residue, higher disease pressure and seeding depth variability."

Because each seeding system and crop is different, growers should count and measure actual plant stand densities to determine mortality rates. It may take a few growing seasons to fine-tune seeding rates and determine just how far they can be pushed in a grower's system.

Increased uniformity of the plant stand is one of the biggest advantages of higher seeding rates and reduced tillering. "In areas with wheat midge, scab, fusarium head blight and maybe other pest problems, if the crop flowers or heads out at the same time the effectiveness of fungicide and insecticide applications increases," says McKay.

"Many industry professionals use a safe baseline of 20 percent mortality in cereals and 50 percent mortality in canola."

With fewer tillers, the crop heads emerge within three days rather than over a five- to seven-day period. "In fields with lots of tillering, we often see an increase of disease or insects on the tillers," says McKay.

Because many growers in North Dakota and Montana are accustomed to spraying for disease and insects at heading time, increasing seeding rates has become a popular practice.

"The past dry year was a good test for us. Some areas received a total of four inches of rain over the growing season," says Larocque. "Plant stand uniformity turned out to be a big plus. We seeded CDC Go at 145 pounds per acre and ended up with a 50 bushel per acre crop with excellent kernel plumpness and crop uniformity. Unlike many of our other crops, the even maturity meant we could straight cut without having to swath or desiccate – a savings of $12 per acre."

McKay notes that the major drawback to higher seeding rates is the potential for lodging. When using higher seeding rates, growers are advised to select semi-dwarf and shorter-straw varieties or varieties with very strong straw strength. As seeding rates increase up to 35 to 40 plants per square foot or 1.8 million pure live seeds, growers can face more significant lodging potential, especially in a high-yield environment.

Even with a few cautions, higher plant stand densities that result from higher seeding rates can offer the benefits of greater stand uniformity, kernel size uniformity, maturity and quality.

WEED POPULATION SHIFTS IN CONSERVATION TILLAGE

A switch to conservation tillage practices is generally a good thing, but new weed species can present new control challenges.

"As growers change to conservation tillage, they often see a change from the usual annual weeds, such as wild oats and pigweed, to hard-to-control annuals and winter annuals, such as narrow-leaved hawk's beard, cleavers, perennial Canada thistle, and both perennial and annual sow thistle," says agronomist John Mayko with ARTI Linkages in Mundare, Alberta.

Research at the Indian Head Experimental Farm in Saskatchewan shows that weed population changes do not result solely from a change to conservation tillage. Weed populations are influenced by cropping practices, weed control with tillage and weed control with herbicides. Herbicide use and adherence to crop rotation schedules will both affect the weed spectrum and population, as does the tillage system. Minimum and zero tillage carry the potential for reduction of broadleaf weeds but may increase the incidence of volunteer crops as weeds. Herbicide-resistant weeds pose a special set of challenges.

The dreaded resistance problem

Herbicide-resistant weeds continue to top the conservation tillage farmer's list of weed worries. In Western Canada, resistant weeds tend to be green foxtail, wild oats, kochia, chickweed and false cleavers. In the U.S. weeds of concern tend to be cheatgrass, wild oats and kochia – with a suspected increase in green foxtail resistance now reported in North Dakota.

The best defences are development of a record-keeping strategy that accurately records the chemical Group and strict adherence to herbicide and crop rotations.

"Several effective herbicides are available for controlling downy brome in wheat, but developing resistance to one of these herbicides with one mode of action makes all of them ineffective," says Mike Moechnig, South Dakota State University Extension Weeds Specialist at Brookings. "Including rotational crops will not only break up the winter annual life cycle of downy brome, but also enables the use of alternative herbicide modes of action."

Moechnig says that some producers are discovering they have glyphosate-resistant kochia and common ragweed. The best defences are development of a record-keeping strategy that accurately records the chemical Group and strict adherence to herbicide and crop rotations.

If you rent a tract of land, make sure you know what you're getting into. Both Mayko and Moechnig agree that an accurate herbicide history can help the producer avoid the possibility of herbicide carryover injury to crops. Moechnig says, "Herbicide-resistant weeds can increase weed control costs by $10 to $20 per acre."

Both Mayko and Moechnig believe that two recent trends in farm management are helping to intensify the problem of resistant weeds. Those two trends are declining soil disturbance due to reduced tillage and direct seeding, and the rapid increase in farm size.

Mayko says that increasing farm size poses weed management risks. "With fewer people managing much larger land bases, changes are needed in how fields are assessed," he says. "We routinely see farmers explore fields on quads, but what's surprising are the numbers of farmers scouting from ultralight aircraft."

Pesky brome weeds aren't going away

Reduced tillage is helping to promote the growth of brome grasses. Downy brome thrives under no-till production because the seed is no longer buried deep in the soil. Leaving brome weeds to their own devices spells yield loss. If you're a winter wheat grower, watch out. Winter wheat is a poor competitor.

Solutions are available

An application of glyphosate prior to crop emergence either in the spring or in the fall for winter wheat is a good choice. Growers can choose to tank mix glyphostate with Pre-Pare® herbicide that offers longer lasting weed control than glyphosate alone.

Everest is registered for control of Japanese brome and suppression of downy brome in the U.S.; and control of wild oats resistant to Group 1 (ACCase inhibitor) herbicides.

Take Weeds Out with the One-Two Punch

Waiting until the broadleaves have emerged can end up causing fairly substantial yield losses.

Wheat growers battling wild oat and green foxtail are pulling out two heavy hitters, Pre-Pare® Burndown Herbicide and Everest® Herbicide, to control their worst grassy weed problems even in fields where yield is all but guaranteed to take a dive.

In the fall, producer Jon Stang burned off his grassy weeds with an application of Pre-Pare, tank-mixed with Roundup®, before planting winter wheat on his farm near Regent, North Dakota.

A month later, in an effort to kill his hard-to-control weeds, he went back in with an Everest application. He says this worked well now that burndowns are a regular part of his field preparation.

"When we went to min-till or no-till we started to burndown fields more often," he says.

A Pre-Pare plus glyphosate tank-mix burndown is a good way to check fierce wild oat competition. North Dakota State University small grains specialist, Kirk Howatt, at Fargo, says, "Flucarbazone is a fairly reliable pre-emergent product. It is very good on foxtail, and as a post-emergence product, very good on wild oat."

In terms of timing, Howatt says: "Early-season competition with wild oats can be really severe, particularly if populations are higher, so waiting until the broadleaves have emerged can end up causing fairly substantial yield losses."

How fertility affects weed control. Wade Barnes tells it like it is.

Sir, your field is full of weeds!

Wade Barnes, with Farmers Edge Precision Consulting, cuts to the quick: "Your first job is to make sure weeds don't take fertility out of the ground." Farmers Edge is a land management company based in Winnipeg, Manitoba.

If weeds steal moisture and nutrients, Barnes says you count on reduced yield. "If weed flushes take off, it doesn't matter how much fertilizer you put down. We get guys who complain, 'I did VRT, but I didn't get my 55-bushel wheat! What happened?' "

Barnes says if they didn't plan early weed control then even a great fertility program won't guarantee the extra yield they're after. "We've had to go out in the field to tell the farmer, 'Sir, your field is full of weeds!' He could have put 500 pounds of fertilizer on there and it wouldn't have made a difference."

When it comes to flush control, Barnes says keep an eye on crop stages. "If the crop is too big, by the time you do your weed control you're just doing it for cosmetic reasons because the yield damage is already done."

When the crop is at six or seven leaves, the number of spikelets and head size have been determined. "If your fertility has been robbed a little, it might be okay to go back and compensate," Barnes says, "but how do you know how much nitrogen is gone? Generally, farmers don't know."

"The biggest return on investment is nitrogen, hands down, no questions asked. I'll stand in the ring and punch it out with anybody on this one."

Some producers spray only once – when they think the crop is at the perfect stage, but this isn't the best plan. "They'll get rain or something else happens. By the time they get out there, the yield damage is already done."

Suck it up

"It's amazing," Barnes says. "Something like 40 percent of the nitrogen is already used in the first 30 days of crop development. That's big."

But he cautions: "Don't under fertilize your wheat. When the crop runs out of nitrogen and goes into stress, you may not notice until it's too late. At this point, don't bother adding more nitrogen. "

Another pointer: Don't skimp on soil testing. Treat every field separately and soil test every field. "There's no one blanket approach," says Barnes.

Whether nutrients in the soil can make up for a fertilizer shortfall depends on the geographical area and the field. Barnes says, in his experience, if a farm has 20 fields, four or five of those will already have more-than-ample fertility as a result of a previous legume crop or another event such as a hailstorm. He says he also sees fields that are extremely deficient.

"Something like 40 percent of the nitrogen is already used up in the first 30 days of crop development."

"Growers often want to set their nitrogen applicator for 70 pounds, for example, but there's probably only one field out of the 20 that 70 pounds works for. But it's what they've always done. We're working with better wheat varieties now that are raising yield potential, but farmers are forgetting to increase their fertility program to accommodate that."

Farmers Edge agronomists believe the most yield-limiting factor is most always nitrogen. "The biggest return on investment is nitrogen, hands down, no questions asked. I'll stand in the ring and punch it out with anybody on this one," says Barnes. "Nitrogen is absolutely, positively, number one. Number two is fungicide and number three is quality seed. You've got to get those right."

Bank soil fertility?

Producers can bank fertility for their wheat, but they'll need to work out a soil-banking strategy. Producers who have lots of manure in their history generally have lots of fertility. "If you're a very high-yield grower, it's usually hard to bank up nutrients because you're starting behind the gun each season. Manure is, by far, the best way to feed a soil that's got a low tank. It's a powerful tool," Barnes says.

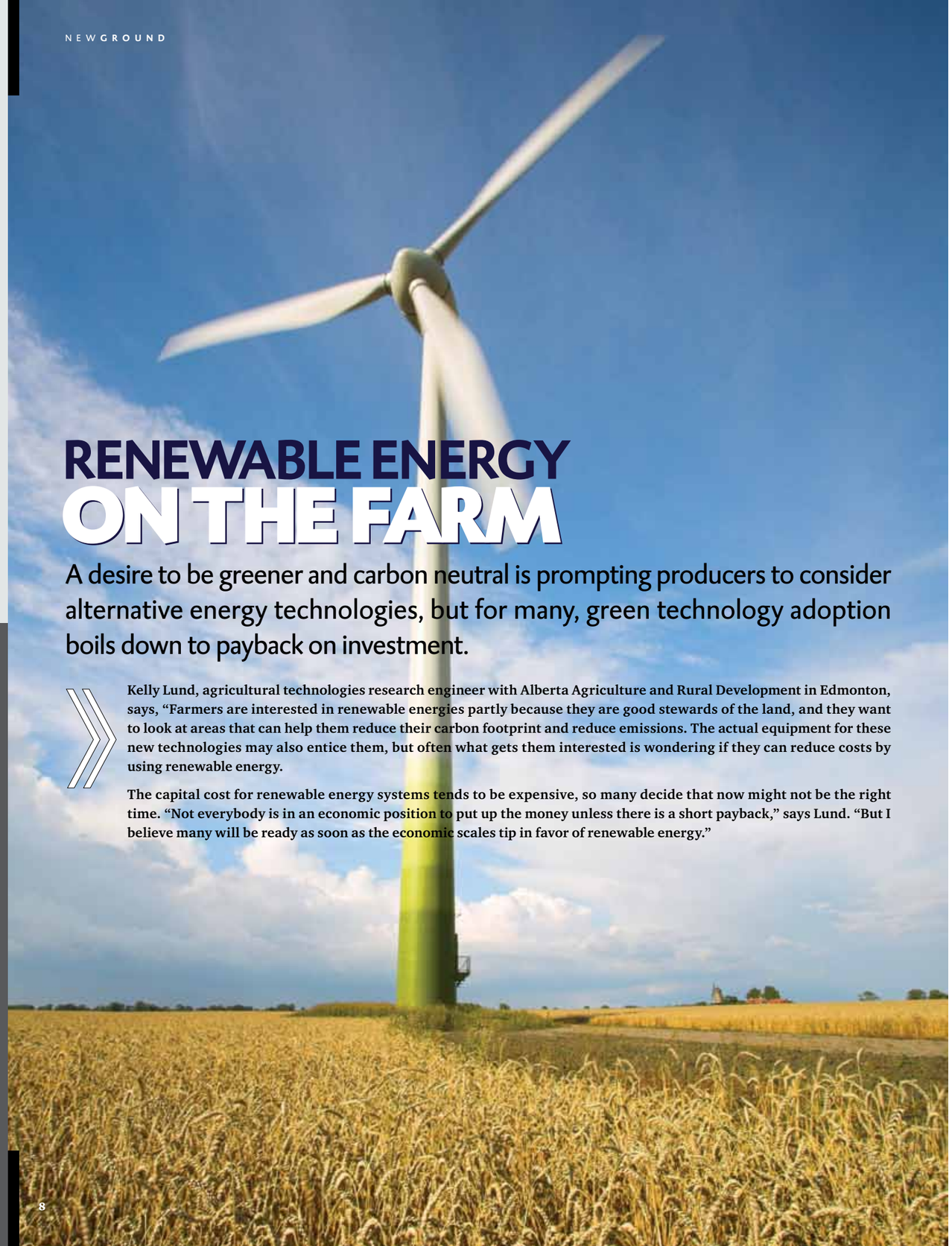
"If the crop is too big, by the time you do your weed control you're just doing it for cosmetic reasons."

If you have an old history of legumes or forage crops, your field could already be in pretty good shape. "We're seeing value from a forage crop that was in the rotation 15 or 20 years ago. That area always produces more grain compared to the rest of the field, even today. It's amazing."

Barnes thinks farmers sometimes limit their own yield potential. "They fertilize for 40 bushels per acre and get 40. They could probably get 65 but that won't happen if the crop is only fertilized for 40. But if you fertilize for 65 and only have weather to grow 40, you're only going to get 40. Fertilizer just does not trump weather."

In dry areas, if you over fertilize and soil test the following year, Barnes says you'll find you have extra fertilizer left over. "We've learned we don't lose as much fertilizer as we've been told we do. That's been pretty amazing to me. There's a lot of talk about leaching and nitrification, but it's not as common as people think."

Crop fertility is top of mind, but what about weed fertility? Understanding how weeds react to fertilizer and how much fertility is required by your wheat crop are two good ways to boost yield.



RENEWABLE ENERGY ON THE FARM

A desire to be greener and carbon neutral is prompting producers to consider alternative energy technologies, but for many, green technology adoption boils down to payback on investment.

Kelly Lund, agricultural technologies research engineer with Alberta Agriculture and Rural Development in Edmonton, says, "Farmers are interested in renewable energies partly because they are good stewards of the land, and they want to look at areas that can help them reduce their carbon footprint and reduce emissions. The actual equipment for these new technologies may also entice them, but often what gets them interested is wondering if they can reduce costs by using renewable energy.

The capital cost for renewable energy systems tends to be expensive, so many decide that now might not be the right time. "Not everybody is in an economic position to put up the money unless there is a short payback," says Lund. "But I believe many will be ready as soon as the economic scales tip in favor of renewable energy."

Funding green technology on the rise

Alternative energy has received a huge boost in the U.S. where investment in wind energy alone reached more than $16.4 billion in 2008. This helped the United States surpass Germany to become the world's leader in wind power, according to the U.S. Department of Energy (DOE). In July 2009, 28 new wind energy projects were selected for funding for up to $13.8 million. DOE said that the project will help address market and deployment challenges.

In Canada, the province of Ontario bit the green energy bullet. Ontario's leading-edge Green Energy Act is creating production and jobs from renewable energy. Through incentives and rebates, Ontario has put green energy into the economy scale of the producer to help offset capital costs.

The province of Saskatchewan is rebating capital costs on renewal energy installations, including wind and solar. Rebates can take an expensive technology like solar almost to the break-even point.

"If the individual is convinced that green energy is something they want, and they have personal and economic value assigned to that, a break-even point may be all they are looking for to give them the go-ahead to invest," Lund says. "They may have identified the potential for a green-energy-related niche market for their product or maybe want to brand their product. If they have a personal conviction, the breakeven range may not be a lot, but it may be enough."

Peak demand and storage

Lund says the Agricultural Technologies Section receives a lot of questions in the fall about electricity use and grain drying. "Renewable energy is not extremely suitable for handling high peak demand," she says. "Storing energy is also an issue. In Alberta, the Micro Generation Regulation allows for net billing, where the producer can generate renewable electricity to offset consumption. It's not meant as an avenue of commercial production – you can't get rich by doing it – but you can offset your own consumption and save some money."

If a grid-tied Alberta producer gets approved as a micro-generator, any energy produced and not used can be put back into the grid. Two meters are installed. One registers electricity imported from the grid, the other registers electricity sent back to the grid. "You pay non-energy charges like transmission and distribution charges, access fees, etc., on all the imported electricity, the same as usual. The savings come on the energy charges, where you only pay on the net amount of energy (kWh) used," Lund explains. "But in terms of instantaneous peak demand, you're not going to meet it with renewable energy. To size your renewable energy system to meet peak demand for most farms would cost an outrageous amount of money."

Solar energy

Solar energy technologies take the sun's energy and use it in different systems to provide useful energy for people, either heat or electricity. With solar thermal collectors, sunlight falls on collectors that heat up a circulating fluid, and that energy is transferred to a heat exchanger where the heat is used for domestic purposes. An individual might have a solar hot water collector in a residence, or a dairy farm might use one where a lot of hot water is needed for cleaning. Solar thermal collectors have a relatively high efficiency.

"Solar thermal is probably the first place to get into solar technology because a solar thermal collector system is the lowest cost solar technology you can get into," says Lund. "And you would probably have a reasonable payback. It's not necessarily a fast payback, but you'd see payback in less than 20 years, and in some situations you might have a payback in as low as eight years. It's best to look at this on a case-by-case basis based on your application and the geographical location."

In the other solar technology, solar photovoltaic (PV), sunlight strikes a solar module creating electricity. Currently available PV module efficiencies are in the range of only 10 to 15 percent efficiency, and they are more expensive on a capital purchase basis, although costs are decreasing over time. "Based on our relatively cheap cost of electricity, when you compare the rates of solar PV systems to that cost, you're looking at extremely long payback, well over 30 years. It really depends on whether your area has any purchase rebates or incentives to lower initial costs, or if you're facing high energy costs now or predict them in future.

"Renewable energy is exciting, but let's not miss the boat on energy efficiency because that's the cheapest energy you can buy," says Lund. "Producers looking to make a dollar or save a dollar want to start with energy efficiency first. Governments realize this and are slowly starting to bring energy efficiency initiatives online for ratepayers, including farmers, so people should investigate these opportunities."

Agricultural producers are uniquely positioned to test the practicalities of green energy technology and initiatives. "At heart, they are interested in technology. They like to tinker with technology, and they like to be aware of new technology on the horizon," says Lund.

Affordable green energy technology may be in its infancy, but agricultural producers will be among the first to put it to the test in terms of economics and practical application.

Rating The Alternatives

Rating system: 1 - 5 (1 less appropriate - 5 most appropriate)

	Electricity	Heating	Transportation
Biodiesel	3	3	5
Anaerobic Digestion	3	3	1
Wind	5	3	1
Solar	5	4	2
Earth Energy	1	5	1

Courtesy Alberta Agriculture and Rural Development.

Farmers' Roundtable

Spring Weed Control Strategies

Wheat growers Shawn Lyberg at St. Thomas, North Dakota, Ernest Meding at Trochu, Alberta, and Chris Page at Souris, Manitoba, have a few things in common. They all experienced a cool, if not cold, spring in 2009.

» Newground: Does looking back at last fall help you plan your weed control for this spring?

LYBERG – You bet. We look at our fields to see what weeds may have been missed in last year's application. We want to identify the best mode of action to take the survivors out next season because they're obviously going to be a problem.

PAGE – We try to do a fall burnoff and then a spring burnoff to give the crops a good jump in the spring so they can compete with the weeds. We also put all our fertilizer on in the spring now. We don't do any fall fertilizing so we don't feed the weeds.

LYBERG – It's different every year. When we pick up new land, we get a different set of problems. Obviously we're in expansion mode here. Since I started at McMartin Farms, we've just about doubled our acres in five years. We like a broad-spectrum chemical that's going to take out a lot of grasses and a broadleaf chemical that's going to take out the vast majority of broadleafs.

» Newground: Is your weed spectrum changing?

MEDING – We're not having as much problem with canada thistle, but I think some wild oats are getting Group 1 resistance.

PAGE – We're getting into minimum till, so the weed spectrum is changing slowly, very slowly. A few different weeds are starting to pop up. We've got some catchfly and white cockle. The night-flowering came off a neighbor's pasture and it's hard to kill.

LYBERG – Some of our weed spectrum is changing as a result of Roundup Ready® technology. The late-season weeds like wormwood are more of a problem. Just when we get finished spraying they'll germinate. Weeds that germinate in late summer could become more of a problem. Yeah, you put the sprayers away and think you're done spraying and then some of the weeds will show up.

MEDING – Continuous use of Group 1 (ACCase inhibitors) herbicides has affected the weed spectrum for sure.

PAGE – In the last five years, since we went to minimum and no-till, we've noticed the weed spectrum has changed.

» Newground: How is your tillage system affecting your weed control?

MEDING – We do direct seeding. Last year I put down Pre-Pare® with glyphosate and I also used Edge®. The Pre-Pare was an Arysta test plot.

LYBERG – We do more conventional tillage with a little bit of no-till. Some of the farms up at Minot are in a no-till situation. We'd like all the land to be in minimum or no till. Regardless, weed control takes planning. The chemical's ease of use is very important. Less volume to handle is a big thing for us. That's why we like Everest® - not a lot of volume, just a half-ounce an acre.

PAGE – We do some zero and minimum till. We've been on a wheat-canola rotation, so every other year we work some of the stubble. We're as close as we can get to zero till, but we probably won't get to 100 percent because we've got a lot of real heavy land that doesn't drain well. If we don't open it up, we won't be able to get on it.

» Newground: How important is a burndown to your crop yield and return on investment?

MEDING – It's important to get rid of all the weeds and any weed growth that was there before. Using a chemical with residual action will control any broadleafs well into the early growing season. It gives me another shot at nailing some of the weeds.

PAGE – As the crops are coming up, I think it's very important to get the land as clean as possible. That way there's no reason to worry about weeds competing for the fertilizer and moisture. I think we burned off everything in a pre-seed burnoff – pretty near every chunk of dirt that we have.

MEDING – Volunteers have been a problem. I've never grown Roundup Ready in my life, but we had some Roundup Ready volunteers that we couldn't kill off. I've never even combined with anybody that had Roundup Ready anything.

» Newground: Are you making any changes to your crop plans as a result of prices?

MEDING – No, I'll continue our rotation.

LYBERG – We plant whatever the markets tell us to plant. We'll switch it up to plant more of a certain crop, up until April that is.

PAGE – We generally stick with what we're doing. We don't tend to let prices drive what we decide to plant. We want to be aware of the stewardship of the land. That said, we don't ignore prices, either. We do venture out a little bit. We'll throw in mustard or something the odd time, but not very often. We were growing quite a bit of winter wheat, but we're starting to get yields with our spring wheat that are as good as our winter wheat, and obviously spring wheat is worth more, so we'll go that route.

» Newground: What weeds will you be up against next spring?

MEDING – Same weeds. I'm not sure we'll see anything new.

LYBERG – I would say kochia and wild oats.

We want to be aware of the stewardship of the land. That said, we don't ignore prices, either.

PAGE – We've got just about everything. On half the farm, I've got a lot of dandelion and wild buckwheat, and a lot of millet on 1,000 to 1500 acres. We always have some wild oats, but we've started to get those beat. Yeah, millet is a big problem.

» Newground: Thanks for taking the time to talk with us. Good luck with the 2010 growing season, hopefully it won't be as cold as last year.

For a longer lasting burndown just add PRE-PARE® Burndown Herbicide to your glyphosate; giving your wheat the head start it needs. And that can heat up your yield potential beyond any other burndown application.
To learn more, visit prepareforthe season.com

Arysta LifeScience

Pre-Pare®

for a longer lasting burndown.

EARLY BURNDOWN
In Conservation Tillage Systems
Get the best bang for your buck

Every day you delay spring burndown, you can bet winter annuals and early perennials are gobbling up the moisture and nutrients meant for the crop.

"An early pre-seed burndown, even weeks before planting, provides the highest yields," says University of Saskatchewan, Department of Plant Sciences, Research Assistant, Ken Sapsford, in Saskatoon. "A high weed population in spring can reduce yield potential before the crop is even planted."

"The benefit we think we get from early seeding may actually come from the weed control operation prior to seeding."

In a six-year study of wheat performance under three burndown systems, options were compared for burndown and seeding in the first week of May, the last week in May, and burndown in the first week with seeding in the last week. The study focused on early spring annual weeds and concluded in 2007.

"Regardless of when we seeded, we ended up with similar yields – if we controlled the weeds early. But we got a yield reduction if we delayed weed control until late May," Sapsford says.

"Weeds growing in May suck out a lot of surface moisture and nutrients, so they're not available to the crop."

Moisture conditions in the study were good in relatively wet years. In dry conditions, Sapsford says the yield differences would have been greater.

» More bang for the air seeding $$$

Traditional advice – seed early for the best yield – may need further clarification. "The benefit we think we get from early seeding may actually come from the weed control operation prior to seeding rather than from getting the seed in the ground earlier," says Saskatchewan Agriculture's Extension Weed Specialist Clark Brenzil.

Earlier burndown may reduce trouble with hard-to-control winter annual weeds like narrow-leaved hawk's-beard and cleavers. Delaying burndown often requires more glyphosate or a second active ingredient.

Brenzil sees a relationship between deep roots and precision seeding. "A heavy population of tap-rooted perennials, like dandelions, can result in poor depth control and some obstruction issues for direct seeding," he says. "Controlling these shortly before seeding may not make a lot of difference in depth control and draft on the implement, but a few weeks of decay before seeding will minimize the physical interference. Fall application allows even more time for decay."

"Earlier burndown may reduce trouble with hard-to-control winter annual weeds."

The best yield response occurs if dandelions are sprayed before the vast majority begin to flower.

If winter annual weeds are the only targets for an early burndown, it may be safe to seed just one day after spraying. However, Brenzil says to delay seeding at least three days if the targets include perennial weeds. "As long as conditions are ideal for glyphosate application (sunny and reasonably warm), three days will be adequate for the product to circulate through the plant and get down into the perennial root."

» Ultra clean

Producers, thinking fields are relatively weed-free, sometimes choose to seed early without a burndown. "That's usually a mistake," says Blair McClinton, executive manager, Saskatchewan Soil Conservation Association in Regina.

"Be very careful about deciding against a burndown," says McClinton. "The earliest weeds can be very small and hard to see. You may get away without one, assuming you don't have winter annuals. Usually after May 1 on the Prairies, you can almost plan a burndown as a course of action on every field. Burndown becomes more important as the seeding date progresses in May."

The last thing a grower wants to see is a flush of wild oats or green foxtail after burndown before the crop gets established. "Wild oats probably will take over if you have a reasonable infestation emerge two or three days ahead of the wheat," McClinton says.

Extending control in an early burndown can help to prevent this situation. It's also a good practice for anyone who has previously planted one of the glyphosate-tolerant crops, like canola or soybeans, in rotation.

"Extended glyphosate control improves the likelihood that you will have a relatively clean field at the time of crop emergence, assuming the residual products do not injure your crop rotation," says McClinton. "Some of the products that extend the control of glyphosate come with varying levels of toxicity and residual. Growers should be aware of that."

Ideally, fields should be as clean as possible prior to seeding the new crop. "We always say that whatever plant gets out of the ground first will win the competition. Anything you can do to get your crop ahead of weeds will work in your favor," advises McClinton.

Morris Industries' AIR SEEDER TIPS FOR SPRING

A few extra hours in the farmyard can save you valuable time in the seeding rush.
The first step is to check your air cart's operator's manual to make sure all items have been properly serviced.

- Check for proper tire pressures.
- Grease the machine thoroughly if not done prior to parking the unit for the winter.
- Clean the air cart out properly if this was not done before storing it.
- Inspect the metering components for binding product build-up.
- Clean any affected metering components.
- Check parts to see if they are damaged; repair or replace them prior to use.
- Check all chains to make sure that they are properly lubricated.
- Make sure chain tensions are set properly.
- Check conditions of any foam or rubber seals. This is critical since leaky seals can cause air leaks or tank pressurization changes.
- Loosen off components that use a seal (tank lids, meter bottoms, etc.) if the unit will be inactive for a long period of time so the flexibility of the seal is not affected.
- Check your air-seeder hose. It is a wearing item that can cause problems if not properly maintained. The hose will weather and sun fade, so it is a good idea to loosen off the lines on the seed tool as well. Taking time to rotate these lines will gain you more acres in the long run before hose changes are required.
- Inspect any flat fan dividers before you begin seeding to make sure they are not plugged after winter storage. Open the trap doors to ensure that no debris is inside.
- Run the air cart fan and inspect the air system for leaks prior to seeding. **Important note**: When cleaning the air cart out, always use compressed air rather than water to flush all residue from the machine as water may cause rusting of some components.

Information courtesy Morris Industries, Saskatoon, Saskatchewan and Minot, North Dakota.
Visit www.morris-industries.com.

How the Critical Weed-Free Period Affects Wheat Yields

In both winter and spring wheat, early weed control minimizes yield losses. The impact of weed infestations on yield depends on whether the weeds emerge prior to the crop, at the same time as the crop, or after the crop has already emerged and is more competitive.

Sometimes winter wheat producers forget that a strategy used to control weeds early in spring wheat should also be developed to protect yield in winter wheat.

Dr. Phil Stahlman, research weed scientist with Kansas State University Agricultural Research Center at Hays, says, "Anything a grower can do to give the winter wheat crop an advantage over the weeds will pay off," he says. "The winter wheat grower wants to get the crop up and out of the ground and growing rapidly. Giving that crop a three-week head start over any weed development means you've won quite a bit of the battle."

Stahlman says the research data is consistent. "Data indicates that weeds that emerge within two to three weeks of the time the crop emerges are the most competitive," he explains. "Weeds that emerge three weeks or later after the crop, in particular spring weed emergence, are going to be much less competitive than weeds that emerge simultaneously with the crop."

In essence, the weed-free period is the minimum length of time that a crop should be weed-free or very close to weed-free in order to avoid a yield or quality reduction.

"For spring wheat, the critical weed-free period is the one- to three-leaf stage of development," explains Pamela de Rocquigny, provincial cereal specialist with Manitoba Agriculture, Food and Rural Initiatives in Carman. "However, the critical weed-free period can vary by the year and the field. It is affected by factors such as weather conditions, moisture, soils, weed species, weed density and crop competitiveness."

When weeds emerge at the same time as a spring wheat crop, they should be controlled at the one- to three-leaf stage of the crop. "The optimal timing will depend on weeds present, the stage of the weeds, the stage of the crop and the herbicide used," says de Rocquigny. "Fields with uneven emergence or variability in the field can impact the timing of spraying the crop."

"Read herbicide product labels carefully," de Rocquigny advises. They outline the recommended crop and weed stage for optimal control of weeds. Selection and timing in the various herbicide products vary in optimal crop and weed growth staging for control.

It makes sense that an early herbicide application to control weeds will benefit the crop and help it get ahead of the weeds by reducing competition for moisture and nutrients.

"Growers need to be aware that larger weeds are more difficult to control," says Stahlman. "So by waiting to control weeds, not only will you end up with a larger weed that may be more difficult to control, you will have already allowed quite a bit of the weed's interference with the crop to take place."

Stahlman says the critical weed-free period for winter wheat is a complex question and depends a great deal on the level of resources – water, nutrients, growing conditions – and weed density.

Winter wheat yield loss

"For winter wheat growers, having weeds controlled within a month after green-up in the spring is critical," says Stahlman. "It's the critical period. Yield loss during that time is not that great; however, previous research shows that each week delay after that time period results in exponential increases of yield loss."

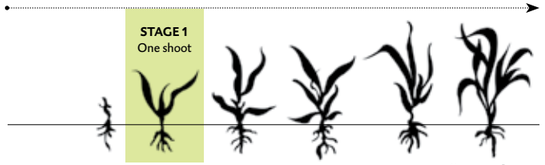
Removing early weed competition in winter wheat also improves establishment and the ability to survive over the winter. U.S. winter wheat producers in the southern and central Great Plains typically control weeds in the spring. They wait to assess crop conditions until the winter eases up.

"A lot of our growers like to do some top-dressing of nitrogen in the spring and prefer to couple that with the herbicide application," says Stahlman. "However, if growers have to wait for better timing for the fertilizer application, they may have waited too long for the best herbicide application timing."

Employ all the strategies

"Herbicides are one strategy for early weed control in spring and winter wheat crops," says de Rocquigny. "Other important integrated weed management strategies include field scouting, crop rotations, crop type and field selection."

She adds: "For both spring and winter wheat crops, it is well known that the earlier the producer can get in the field and apply herbicides, the better the control. Make it your priority to do anything you can do to give your crop the advantage, particularly in the critical weed-free period. Otherwise, the weeds compete for available light, nutrients and moisture, reducing yield potential and net returns."



Source reference
http://www.ag.ndsu.edu/pubs/plantsci/smgrains/w564w.htm

ONE HERBICIDE PRODUCT

Several Different Chemical Groups

Producers are going to have to know what's in the products

One thing for sure, you want to handle multi-Group herbicides correctly from the get-go.

You've walked your fields with an agronomist you trust. The agronomist has identified weeds you didn't know you had. You tell your retailer about your weed spectrum, and the retailer suggests a new herbicide you haven't used before. When you read the label, you suddenly realize that you are going to spray a herbicide with three separate herbicide Groups listed on the label. How do you handle that?

"As chemicals get more complicated and we get two or three Groups in premixed products, producers need to know what's in the products," says Kim Brown-Livingston, farm production advisor with Manitoba Agriculture Food and Rural Initiatives in Carman. "Farmers want to familiarize themselves with the names of the active ingredients for each component in the product."

Farmers will want to familiarize themselves with the chemical names for the modes of action in the product.

The name of the active ingredient won't change, but trade names come and go as new products are added and subtracted every year. "Herbicide trade names change every year," says Chad Effertz, Arysta LifeScience herbicide and insecticide development manager in Minot, North Dakota. "With the addition of generics we've got many more names now. There are no more active ingredients; there are just more products. It's a lot to keep track of."

Brown-Livingston says, "Most people know whether the chemical they're using is safe for the crop, but they also need to ask: Will this product fit with what I'm going to grow in this field next year and the year after? Make sure the chemical fits your long term rotation plan."

Effertz says that often the easiest choice for the farmer is to use a familiar product over and over again. However, there are a few pitfalls: resistance can build up and the product may not be the best fit for the farmer's particular weed spectrum.

"We don't want to use the same chemistry in back-to-back years," Effertz says. "It takes some planning to figure out how to rotate out of a product with two or three chemical Groups. You might not be able to rotate out of every Group completely every season, but you can at least rotate half your acres. That will shake things up a little bit and prolong the productivity of the herbicide's active ingredients. A lot of producers are seeking the help and advice of their retailers. I think this is a good idea. Chemistry is complicated and nobody wants to see weed escapes."

Preventing weed escapes in the field can depend on whether the producer has identified the active ingredient(s). "If I check a field and find a bunch of wild oats, I want to ask the farmer if he has resistance issues and, if so, what Group he's using for control," says Darin Chrisp, manager of Munro Farm Supplies Ltd. in Neepawa, Manitoba. "A farmer may not know the Groups in a new chemical. If the farmer has a weed that's resistant to a certain Group, he'd have weed escapes."

You want to record your active ingredients and the site of action.

If you're working with a herbicide that contains more than one Group, read the label and write down the active ingredient as well as the chemical's trade name – before you head to the field.

Brian Schilling, Arysta LifeScience product development manager in Edmonton, Alberta, says: "It is important to record what you sprayed on your field the year before. You want to record your active ingredients and the site of action. Keep good scouting notes that include what weeds were and were not controlled. Then you'll have an idea of what your issues might be the following year."

At the very least, record more than the product's trade name. Enter into your herbicide records whether the product is a grassy or broadleaf herbicide (or both), the field or site where applied, the herbicide Group and active ingredient, e.g., glyphosate, flucarbazone, bromoxynil.

Record the Group and chemical information at the time of application or even before you get to the field. Brown-Livingston says, "Two years from now your record-keeping information could be very important, and the trade name may no longer be easy to find."

Record keeping is a key to success when working with multi-Group herbicide products. Schilling says, "After the application of a one-pass solution with two or more Groups, don't walk away from the field until you've done your record keeping."

Effertz says some of the products with multiple herbicide Groups have made things easier. "Tank mixing three or four products in one spray tank was difficult and often resulted in poor performance," he points out. "Trying to keep track of rates and which surfactants to use was confusing. Sometimes antagonism between the products would occur. Many of the new multiple herbicide Group products have been formulated at specific ratios to overcome these potential antagonism issues and to simplify surfactant use."

For best results, add field scouting to great record keeping and application techniques. "Make sure you're controlling all the weeds and no escapes are occurring," Schilling advises. "Go into the field two weeks or a month after the herbicide application to be sure the application is working as expected."

Trifluralin Resistance

Let that be a lesson to us

Foxtail resistant to dintroanalines (Group 3) is an old issue in North Dakota. "Dinitroanalines are no longer used," says Arysta LifeScience researcher Chad Effertz. "Resistance to dinitroanaline is old news, but its development is a fact we shouldn't ignore."

Unless we're careful, trifluralin resistance could be the tip of the proverbial iceberg.

Dinitroaniline herbicides caught on like wildfire when they were introduced in the 1960s. Trifluralin was the first and most prominent chemistry in the Group. It was extremely volatile and required incorporation into the soil, nevertheless, farmers considered it a valuable weapon in the battle against a wide spectrum of grasses and broadleaf weeds. Overuse prevailed, weeds adapted and widespread resistance developed.

"Trifluralin is a reminder of what can happen to useful herbicide chemistry through overuse," says Effertz. "Herbicide rotation is the key to prolonging the use of the herbicides we have that are working for us."

According to Canadian Weed Scientist, wild oat resistance to Group 1 or 2 is found in 25 per cent of Canadian prairie fields. And Group 1 resistant green foxtail is present in 22 per cent of Manitoba fields.

In 2009, a few North Dakota farmers submitted suspect weed samples for resistance testing, but results are not yet available. Dr. Richard Zollinger at North Dakota State University says that a discovery of more widespread resistant foxtail would be new.

The gene pool starts to shift …

Some of the weeds in a given population carry a resistant gene. The number of resistant weeds increase with each use of the herbicide. This happens because the gene pool in the field starts to shift from susceptible to the herbicide, to resistant.

The best resistance management strategy: rotation of herbicide Groups, early identification of resistant plants, and complete eradification of the resistant plants while the infestation is small.

Weed resistance is preventable. "Even if resistance develops, it doesn't mean the sky is falling," says Dr. Zollinger. "It just means we have issues that we have to deal with."

Family Photos

Now's the time to preserve the stories that go with them.

Bonnie Curran in Calgary, Alberta, and her sister Betty Gregory in High River, Alberta, decided to preserve their family's history in a book before the photos and the stories that bring them alive are lost to time.

Bonnie and Betty, two sisters of nine siblings, were lucky. They didn't have to rely solely on oral histories. "My grandfather kept a journal of his trip west from Ottawa to Fort Macleod in 1883," Bonnie says. "My dad found the journal in an old trunk. The journal, along with my grandfather's letters to his parents in Ottawa, gave us a good idea of what he went through after he made the decision to homestead out west."

Betty's and Bonnie's grandfather and his younger brother set out for southern Alberta, travelling by train from Ottawa through the States to Billings, Montana. From Billings, they rode by stage to Fort Macleod. They left Ottawa on March 19th and finally arrived in Fort Macleod on April 24, 1883.

"You know how it is when you're a kid, you don't pay close enough attention to remember all the details."

The family's history was too precious to lose to time. In 1998 Bonnie and Betty began writing and choosing pictures from the family's store of old photos. "My son had just moved to Australia, and we thought it would be nice to give him a little history of our family," says Betty.

Bonnie says she didn't include much detail in the stories that go with the pictures, but says now, "I wish I had included more of the stories of my parents, brother and sisters."

The art of writing life stories to accompany photos is called "photoscribing" and, according to the Soleil Lifestory Network, based in Lisbon Falls, Maine, anyone with the interest can learn to do it. Denis Ledoux, founder of the Soleil LifestoryNetwork and author of Turning Memories Into Memoirs/A Handbook for Writing Lifestories, says that preserving the stories is just as important as preserving the image itself. Photoscribing adds a personal story or perhaps a family's story to photo albums for the enjoyment and edification of future generations.

"Cameo" narratives of between 50 to 150 words can be used to accompany groups of photos or even just one photo. Sometimes the writer chooses to write short cameos even when there are no accompanying photos.

Bonnie and Betty included some short narratives in their family's book. "Dad raised a horse called Midnight that became a world-famous bucking horse, so we included that story along with newspaper clippings and interviews," says Bonnie. "In his journal, my grandfather talked about establishing a garden and selling vegetables to the Mounties in Fort Macleod in the early days, but he saw that ranching was the coming thing. To his parents, he wrote, ' … if we once get a start and a little band of cattle, we will never see a poor day. A band of cattle is as good as a gold mine in this country."

History confirms his early vision. With the arrival of the parents and younger brother, McNab and Sons established the Horseshoe Outfit, that by 1889, ran 1500 to 1800 head of cattle using Highlander and Shorthorn bulls.

Sometimes when people have different versions of family stories, discrepancies pop up, but that wasn't the case with Bonnie's and Betty's project. "The stories pretty well all matched up," says Betty. "We had some newspaper clippings about the family coming west, and they seemed to support what we were writing based on the letters and journals."

They describe their dad as an old-time cowboy and a great storyteller. "He saw cowboys come up the Chisholm Trail from Texas," says Bonnie. "He was a wrangler when he was just a kid and worked for big outfits before there were fences. He had wonderful stories to tell, but you know how it is when you're a kid, you don't pay close enough attention to remember all the details."

Their dad started writing his memoirs, but Bonnie says he got sidetracked researching different brands and never finished it. "It's a real shame because he had a great way of expressing himself and was a great storyteller."

The family sold the farm near Fort Macleod, but the memories, with the help of their book, live on. When Betty's son was home from Australia in October, he and his wife wanted to take a trip out to the old farm. Says Bonnie, "The old farm's not the same anymore, but we're really happy the book generated that kind of interest."

Once completed, the book was photocopied so each family member could receive one and give copies to their children.

"It's a nice keepsake that people have really enjoyed," says Bonnie. "For me, the book's been just wonderful because I never met my grandfather. It's a connection to him that's really important to me." ❦

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