SSCA

Prairie Steward

Farming For Your Future Environment

The Newsletter of the Saskatchewan Soil Conservation Association Inc. Summer Issue No. 57, 2009

Greenhouse Gas Emission Calculator

By Garry Mayerle, PAg

Saskatchewan farmers have heard a lot about greenhouse gas emissions in relation to soil carbon storage. But do they know the ***bottom line*** **for these emissions on their own farms? Do they have a feel for the specific emission and storage numbers for different areas of their operations? There is a solution! A greenhouse gas emissions computer model has been developed for producers that can answer these questions for individual farms.**

In This Issue

Many producers have become disillusioned about the suggested impacts of greenhouse gas emissions and global warming on their farms. For the last 10 years or more there has been talk about emissions and potential significant dollar payments for storing soil carbon. And yet, it is pretty much all still in the political realm and nothing really significant seems to be happening. This has even led to questioning global warming. It is hard to get one's eyes off the short term after a long cold winter and such a cool spring and believe in long term average temperature increases and the impacts even a few degrees might make on one's farming operation.

Nonetheless, there is so much emphasis on the environment it is hard not to believe that one day society will place enough pressure on the politicians that a system of rewards and or penalties will be put in place to try to make a difference on greenhouse gas production. It behooves producers to know where they are at on their farms. It would also be beneficial to know what their options might be to capitalize on the rewards and mitigate the penalties as much as possible.

Agriculture and Agri-Food Canada (AAFC) put out a greenhouse gas calculator they have entitled Holos. The name comes from a Greek word meaning: all, entire, total. The significance of the title is that they have tried to develop a program that will account for all the greenhouse gas emissions produced on most Canadian farms. It is important to mention that the work on this program was extensive with many AAFC scientists working collaboratively to produce Holos.

The program allows producers to individualize their results by picking the operations they have on their farms. The options included can be seen in figure 1. For each of the crops grown on the farm the important entries are: the acres dedicated to that crop, the expected yield, and the amount of nitrogen and phosphorous fertilizers applied to that crop. In each of the livestock operations choices are given about production cycles, manure handling, feeding choices and number of animal units.

Because greenhouse gas emissions are impacted by the environment each producer indicates where his farm is located. The scientists have built into the program an ecodistrict location, as the program labels it, to take into account soil characteristics, evapotranspiration, and precipitation during the growing season.

The boundary for the program's calculation is the farm gate but it does include emissions from the manufacture and transportation of inputs used directly on the farm such

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President's Message

By Doyle Wiebe, PAg
SSCA President

As I prepare this article in mid-June both looking back on my first few months as President and at the issues farmers are facing today – I have to ask "Is it just me, or is the world turning faster than it used to?" Yes, we are inundated daily with so much information about so many things, but as farmers we seemed to have the luxury of at least being involved in an occupation as old as human society where the basics did not change – plants and animals are tended with Mother Nature to grow food. But these last few years, it seems like even nature is becoming as volatile and extreme as such things as the human created market system. Just this spring there was another "once in 100 years flood" and within weeks – vast areas on the prairie moisture map says "record dry".

As I sit here, my weather station data says we have not quite received one inch of rain this year – only water precipitation is measured – and by many accounts this is above the average in many parts west of here. And yet, I think of the soil I have been entrusted to manage. I believe I am seeing some of the benefits of changes I have made over the years to improve both the soil itself, and its ability to retain moisture and provide a better chance of growing a profitable crop. I suspect many of you will also be seeing this, and regardless of the outcome this fall, we can be assured that we have done what we can do to make the best of even a possible poor situation.

From the day I took over the SSCA President position, the list of places that SSCA needed to be represented at also seemed to take on new dimensions. During one week in March, each executive member and the executive director were at different meetings in different cities. Many of these meetings/conferences were opportunities to both interact with policy makers and to make the needs of Saskatchewan farmers known when it comes to issues surrounding land and water management issues.

When I attended the annual meeting of the Soil Conservation Council of Canada in Ottawa, it became very clear that farmers in Ontario were concerned about the possible next step following the Ontario government's legislated ban on cosmetic pesticide use. In a nutshell, farmers can still go about their regular activities on their farmland, but they cannot use the same products on their lawn.

As crazy as this may sound, it highlights the urban/rural divide that is engulfing this country and as you know, farmer votes don't elect many representatives. Are you concerned? Let us know what to do.

SSCA is being severally challenged to be able to continue operating in the way it has. Most projects we are involved with require contractors to do most of the work only mitigating overhead costs to a small degree. Your board of directors is working hard to determine what business model has the best chance of succeeding and ensuring that this valuable organization can continue to be both a voice for future policy changes that will impact the way you and I farm, and also "to be the recognised driver and facilitator of change that leads to conservation agriculture being practiced on prairie agricultural land".

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Blair McClinton, Executive Manager
Marilyn Martens, Office Manager

SSCA's mission is "to promote conservation agriculture systems that improve the land and environment for future generations."

SSCA's Vision is "to be the recognised driver and facilitator of change that leads to conservation agriculture being practiced on prairie agricultural land.

Executive Managers Report

By Blair McClinton, PAg
SSCA Executive Manager

SSCA is always looking for new opportunities to create new projects that add value to our members. Over the past few months SSCA has become involved in a few new projects.

PSCB

SSCA and Dr. Brian McConkey, AAFC-Swift Current, have secured funding from the Saskatchewan Pulse Growers to resample the Prairie Soil Carbon Balance Project (PSCB) in the spring of 2010. SSCA will be contacting cooperating farmers later this fall to collect site history data.

The PSCB is a long-term study to measure soil carbon changes from direct seeding. Over 120 fields throughout Saskatchewan were established as benchmark sites in the spring of 1997. These benchmark sites have been resampled twice since then in 1999 and 2005. This information is used to establish carbon sequestration coefficients for direct seeding.

Conservation Agriculture

Conservation Agriculture (CA) is the new buzz term for continuous no-till management systems. Two years ago, SSCA became a founding member of the Conservation Agriculture Systems Alliance (CASA). CASA is an international network of conservation agriculture/no-till groups from across North America with connections into South America, Africa, Asia and Australia.

This spring, SSCA decided to develop a communications package to educate the agriculture community and general public about conservation agriculture. This communications effort will focus on developing a poster, brochure and website to help develop the conservation agriculture brand in Saskatchewan. This project is being funded through the AAFC's ACAAFS program administered by the Agriculture Council of Saskatchewan.

Carbon Policy Communications

Carbon trading is still on SSCA's radar screen. There have been a few developments over the past few years, but everything now seems to be heading towards the establishment of a common North American system or at least two equivalent systems. Because this is taking time to develop, SSCA, with funding from Saskatchewan Pulse Growers, are working to develop a communications strategy to increase the profile of soil carbon sinks with the public and governments. You will hear more about this as this effort rolls out over the coming months.

Holos and eJournal

Over the past year, SSCA rolled out two other projects. Two issues of the Prairie Soils and Crops eJournal are now available for subscribers. As an SSCA member, you are entitled to free subscription. If you have not taken a look at the eJournal go to www.prairiesoilsandcrops.ca. If you have provided us with your e-mail address, your login information was e-mailed out to you in March. If you have any trouble please contact SSCA at 1-800-213-4287 for assistance.

SSCA is field testing AAFC's Holos GHG-calculator with Saskatchewan farmers and ranchers as part of a national initiative through the Soil Conservation Council of Canada. Former SSCA staffers, Eric Oliver and Garry Mayerle, will be conducting small focus group meetings throughout the province over the coming year. Contact SSCA for more information about this or checkout Garry Mayerle's article elsewhere in this newsletter.

New Initiatives

The SSCA is always looking for new project ideas or ways to better serve our members. Our board is looking into developing an on-line store and using more pay-per-access features on our website including webcasts of our Conference and Crop Advisors Workshop. If you have any ideas that you think SSCA could help with, please let us know.

WINTER WHEAT, BACK TO THE BASICS ... CONTINUED FROM PAGE 5

winter wheat (the current Saskatchewan Crop Insurance deadline) but not always is stubble available for seeding. Growers also realize that seeding into standing stubble will increase chances of success but at times acceptable stubble is not available at seeding time or suitable stubble is destroyed by equipment traffic at harvest and seeding.

Winter wheat should be seeded early (August 20-September 15) into tall standing stubble. Seeding early requires planning on the part of the winter wheat grower. First, the crop preceding winter wheat should be planted early enough to allow late August or early September harvest, second the grower should prepare seeding equipment and have inputs in place prior to seeding and third the grower must harvest the proceeding crop in a timely manner. Seeding into tall stubble requires picking tall dense stubble (canola, mustard, flax, or cereal stubble) and managing that stubble to ensure as much is left standing through harvest and seeding. This can be accomplished by reducing traffic in headland areas during harvest and seeding as well as planting the winter wheat with a seeding tool that provides minimal disturbance.

Early seeding and good stubble are key building blocks to a healthy start for winter wheat. Experienced winter wheat growers understand that the basics are important - a health start means a successful crop.

Improving Moisture Use Efficiency with Tall Stubble Technology

by Patrick Mooleki PAg, Agriculture Knowledge Centre
and Ken Panchuk PAg, Crops Branch
Saskatchewan Ministry of Agriculture

Moisture is one of the most limiting factors in crop production in the semi-arid Canadian prairies. In Saskatchewan, moisture limitations are more pronounced in the Brown and Dark Brown soil zones. In the past, practices such as summerfallowing were promoted in order to build soil moisture reserves during the fallow season. However, this practice is no longer recommended due to soil degradation issues such as water and wind erosion. Instead, practices that promote the retention of straw and stubble on the soil surface are being promoted. In this article, we review and highlight how tall stubble technology

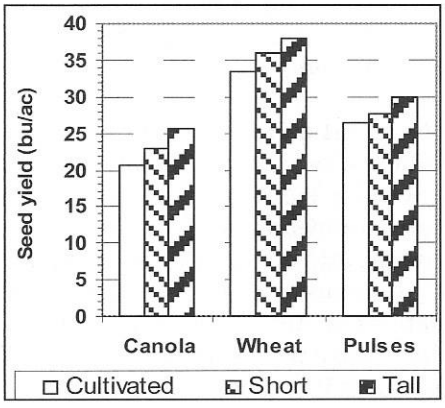

Figure 1. Source: AAFC

enhances moisture use efficiency and crop yield.

Research conducted by Agriculture and Agri-Food Canada (AAFC) scientists at Swift Current, shows that compared to cultivated stubble, tall stubble increased grain yield of canola, spring wheat and pulses by 16, 12 and 13 per cent, respectively (Figure 1). These increases in yield were a result of improved water use efficiency (WUE) under tall stubble management.

The micro-climate near the soil surface created by the tall stubble reduces daily average wind speed, soil temperature and incoming solar radiation, while increasing reflected solar radiation. During the early growth stages, such conditions provided the crop with the much needed protection from wind, water evaporation from the soil surface, and excessive transpiration from the leaves. These plants were also found to have greater leaf area index and accumulated more biomass than those under cultivated stubble. Under such conditions, potential evapotranspiration (ET) is reduced, mainly through the reduction in the evaporation of water from the soil surface.

To achieve this yield advantage, adjustments have to be made to residue management and seeding technology. Tall stubble can be achieved by use of a straight cutting header or a stripper header.

Proper straw management at harvest allows for ease of seeding the next crop and also improves soil moisture conservation. Fine cut straw choppers are now the standard in the industry, allowing the chopped straw and chaff to be spread uniformly over the width of the cut. These high performance choppers also require periodic maintenance to be able to effectively handle a wide variety of crop types under variable harvest conditions. Keeping the flails and knives in good condition assures that the straw chopper will do the job effectively and efficiently. This is particularly important for harder to chop crop residues like flax.

Upgrading to high durability, self-sharpening knives, will greatly extend the life of the straw chopper wear parts and reduce down time during the harvest rush.

Some producers, in the more moist areas of Saskatchewan, are experimenting with an even newer straw management system. This system uses a straight cutting header or stripper-header that leaves the stubble tall. Then, some time between harvest and seeding, a specially designed rotary mower is used to chop and spread the stubble to allow for seeding. This system allows for flexibility on timing of the residue management – in the fall, if soil moisture recharge is adequate or in the spring, to allow the tall stubble to collect snow for extra moisture recharge.

Figure 2. Source: AAFC

The next step, selecting the proper zero-till seeding equipment, is critical. Generally, for short stubble (about 15 cm (6 in.)) hoe, knife and disc openers work well. For tall stubble up to 30 cm (12 in.) knife and disc openers work well. For extra tall stubble (45 cm, (18 in.)) disc openers may work best. However, producers using knife openers can use GPS guidance to make the rows straight in the first year and then seeding between the rows of the extra tall stubble using GPS and other between-the-row technologies to handle the extra tall stubble without plugging (Figure 2). It's best to become familiar with the extra tall stubble system by first talking to researchers and producers who are using tall stubble systems and then experimenting on a few fields.

The first noticeable advantage of tall stubble technology is that it will collect more snow. Research results from AAFC, Swift Current, show that tall stubble increased stored soil water from five to 30 mm (0.2 to 1.2 in.) as compared to cultivated stubble.

Winter Wheat, Back to the Basics

By Mark Akins, P.Ag CCA
Conservation Program Specialist
Ducks Unlimited Canada

Interest in winter wheat is on the rise! One doesn't need to go further than the acreage in fall 2007 (600,000 acres) and in 2008 (450,000 acres) to back up this statement.

Winter wheat has become a popular choice for growers for many reasons including increased yield potential, spreading seeding and harvest workload and the ability to avoid pests common in other classes of wheat. Winter wheat yield potential in Saskatchewan has been superior with Stats Canada yield numbers showing a 24% yield advantage over spring wheat over the last 5 years. Spreading workload is a difficult advantage to quantify, but time and time again growers see this as the number one advantage to adopting winter wheat into their rotation. Seeding in fall increases the number of acres that can be seeded in spring or makes those spring seeded acres more timely. The same theory applies to harvest, getting started early reduces the bottleneck of cereal acres to be harvested at one time and often improves grades for winter and spring cereals. Last but not least, winter wheat's life cycle provides advantages relating to pests. The early emergence and vigorous growth helps avoid pests like wild oats, wheat midge and wheat stem sawfly that can affect spring wheat and reduce profits.

The resurgence in acres has also been aided by more suitable varieties and the wholesale shift in the prairies to direct seeding. These two changes have given producers more confidence in winter wheat and its ability to survive the winter and reach its genetic potential the next summer. This confidence in the crop is important, as it seems the barrier for many growers to try the crop is perceived risk of winterkill. Confidence is infectious and a successful winter wheat grower who models the best management practices for his neighbors and friends generates new interest for the crop. This grower to grower contact and promotion has been the key building block to increasing winter wheat acreage to its current numbers.

Confidence that winter wheat can overwinter is warranted in most cases, given that records from Saskatchewan Crop Insurance show that winterkill cases have averaged less than 8% and for the last 4 seasons records are in the 2.5% to 3.5% range. Still growers must understand best management practices relating to winter wheat that will improve their chances of a successful crop and minimize winterkill potential. As with any crop, cutting corners relating to best management practices can be costly.

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manitoba	66%	82%	99%	128%	136%	131%	164%	153%	164%
Sask	98%	116%	115%	106%	114%	106%	119%	145%	123%
Alberta	114%	117%	118%	94%	105%	121%	130%	96%	104%
	2002	2003	2004	2005	2006	2007	2008	AVE	5 yr AVE
Manitoba	142%	134%	162%	105%	153%	168%	150%	133%	147%
Sask	143%	133%	130%	105%	133%	137%	117%	121%	124%
Alberta	172%	132%	103%	121%	119%	115%	117%	117%	115%

Winter Wheat yield as a percent of Spring Wheat

When growers encounter winterkill issues, most often there are management issues that contribute to the crop damage. The two most common and avoidable of these mistakes are seeding too late and seeding into unsuitable stubble. To understand why these two mistakes can cause problems to a winter wheat crop one must first understand some basics of winter wheat.

Winter wheat ideally germinates in early fall, growing to the 3-4 leaf stage with a tiller or two. In the fall winter wheat's priority is to catch light with the leaves it produces and store that light as energy in the "crown" of the plant. The crown is a small bulb of tissue below the soil surface that stores the photosynthetic energy collected in fall and uses it as the fuel for the plant to resume growth in spring. As a general rule the larger the plant, the more developed the crown and the hardier the plant is through the winter and more vigorously the plant resumes growth in spring. Think of a small (1-2 leaf) winter wheat plant to an open pollinated canola seed while a larger (3-4 leaf plus a tiller) plant reacts more like a hybrid canola seed. The larger winter wheat plant with more crown tissue is more vigorous, resumes growth in spring earlier, competes with weeds more aggressively, matures earlier and usually yield more, much like hybrid canola.

The other key to getting a crop through the winter is insulation. Plants are damaged if soil temperature is reduced to a point where the crown tissue can be damaged. Temperature is important, with most winter wheat withstanding -22 to -24 degrees Celsius. The temperature where plants are damage is reduced if the soil is cold for longer periods of time. The primary solution is to buffering soil temperature from the colder air temperature with insulation. Insulation provided by a snow cover of 4 inches or more. This can be achieved by seeding winter wheat into standing stubble of crops like canola, mustard flax or barley. The standing stubble of this previous crop helps trap the snow and provides a blanket of insulation, buffering the soil temperature from the cold winter air temperatures.

As grower's confidence has grown in the crop and interest has expanded often corners are cut when seeding winter wheat. It is generally accepted that September 15 is the last date to seed

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Camelina – the New Biofuel Crop Option for Fall Seeding

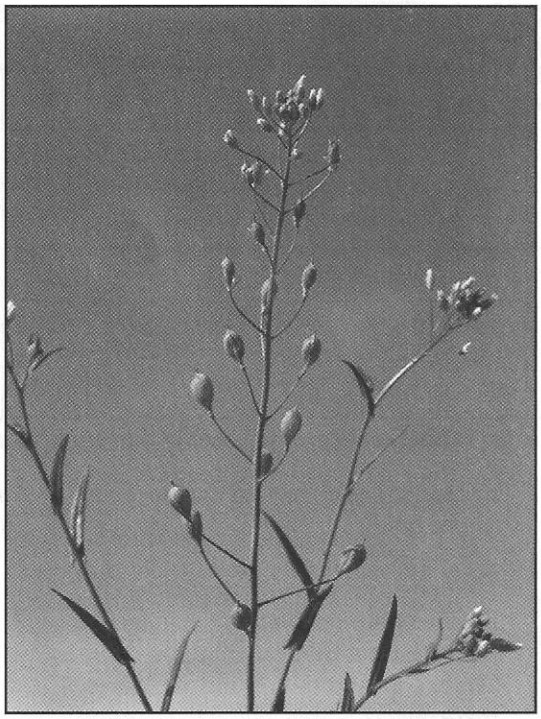
By Dan Kusalik, CCA, VP of Canadian Production and
Eric Oliver, PAg, Saskatchewan Field Service Rep
Great Plains – The Camelina Company

Camelina (camelina sativa) is a new oilseed crop being grown on the prairies that is used exclusively for biodiesel production and for livestock feed. It belongs to the brassica family along with mustard and canola. Although relatively new to prairies, it is an old crop, dating back to the Bronze Age in central Asia and the Mediterranean. It was cultivated and used for a salad oil and lamp oil throughout much of Europe. Because of its pleasant aroma and long shelf life, it was also used as a massage oil and was often referred to as the "gold of pleasure". Camelina slowly died out as a crop as other sources of oil became available and many other crops became cultivated.

Today camelina has become valued again as a crop for biofuel and the meal is valued for its relatively high protein, Omega-3, and vitamin E content as a poultry and swine feed. The oil is used to The oil is used to produces a "drop in" ready biodiesel and jet fuel that does not need to be blended with petroleum fuels.

Camelina has several traits that make it very attractive to producers. Camelina is a short season crop that is very frost tolerant, has good drought and flea beetle resistance, and naturally resists shelling when standing ripe for straight combining. It also has natural blackleg and alternaria resistance. Gophers are reported to leave camelina alone once it becomes established.

Camelina offers a lot of flexibility to producers when seeding this crop. It appears the only time we won't be seeding camelina on the Prairies will be in July and August. It can be seeded in the fall, toward the end of September till early October so a small rosette is produced before winter sets in. Camelina has also been successfully dormant seeded in the late fall and even during the winter as conditions permit. It also can be seeded in the early spring as it is very frost tolerant (comparable to field peas). Camelina can also be late June seeded as it only needs about 85 days to mature, depending on the season and variety. Fall and dormant seeding times help reduce the work load during the busy spring seeding time and also allows for very early development of the crop before most weeds are even emerging. Because of its short growing seasonal requirement, it can also be used as a "rescue crop" if other crops become frozen.



Camelina pods and flowering. Photo by Eric Oliver

There are less inputs involved in growing camelina so the margin of profit for farmers is attractive. Fertilizer inputs are significantly lower than other oilseed crops and with fewer operations in the field, it also helps to reduce overall operating expenses of the crop. Because camelina is usually harvested much earlier than most other crops, any precipitation afterwards is stored in the soil. Camelina is a very water use efficient crop and has been grown successfully in all soil zones. The crop is also a good option for organic growers. No special equipment is required to seed or harvest camelina. If your seeding equipment can seed small oilseeds, it can seed camelina.

Camelina is particularly suitable for a cropping system with reduced chemical use. Sow early and ahead of the weeds, camelina has proven to outperform many annual weeds. Combining its allelopathic effect with narrow seed rows and a relatively high density of plants per ft^2, **has given acceptable weed control with NO IN-CROP HERBICIDE used. Start by seeding onto clean fields as there are no herbicides registered for this crop. The higher plant density will help allow the crop to provide a canopy that will help prevent weed growth as competitive weed control.**

The pods of camelina are pear-shaped and are therefore not as susceptible to shattering as other oilseeds. As a result, camelina is naturally well-suited to be straight combined, but can also be swathed, depending on the grower's equipment and the circumstances at harvest time. Camelina has no grading factors, such as green count, protein content, frost, shrivelled, etc.

Overall, camelina can provide producers with another crop with flexibility of seeding times, early harvest, and a good margin of return, reduced risk, frost and drought tolerance and fewer insect and disease issues.

For more information on camelina, please contact Eric Oliver, PAg, Field Service Rep for Saskatchewan, 306.741.2188 or Dan Kusalik, CCA, VP of Canadian Production, 403.330.8687. www.camelinacompany.com

A Look at Fall Weed Control

Brent Flaten, PAg, CCA
Integrated Pest Management Specialist
Saskatchewan Agriculture

This spring presented challenges with pre-seed burnoffs. Frosts, snow, high winds and generally slow growing conditions resulted in poor perennial and winter annual control. Given the right conditions, fall is a great time to control perennials and fall germinating winter annuals and often results in better control than spring herbicide applications.

Planning ahead is essential to good crop rotation management. Managing weed control one or two years prior to seeding any particular crop is an important factor. It's best to clean up perennial weeds prior to seeding less competitive crops such as flax or mixed forage stands where perennial weed control options are very limited or non existent.

Pre-harvest use of glyphosate

Research has shown that pre-harvest glyphosate can provide effective control of weeds such as Canada thistle, quackgrass, dandelion and perennial sow thistle. This provides a head start on next year's weed control and a more uniform crop and weed dry down. However, be aware that glyphosate is not a quick acting desiccant. In most cases, weed control should be the driver in making a decision whether to use glyphosate pre-harvest or not. A cautionary note: if dry conditions have halted weed growth by this crop stage, a pre-harvest application of glyphosate will give you reduced weed control. Use only on registered crops. Also make sure end users buying your grain allow pre-harvest glyphosate. This may apply to malt barley or milling oats even though they are registered crops. Control of foxtail barley may be difficult at pre-harvest due to plants not actively growing.

Canada thistle

Spray when Canada thistle is at or beyond the bud stage. At this stage thistles are generally large and actively growing with lots of leaf surface for glyphosate to be absorbed and translocated into the plant roots. If you used a herbicide earlier in the season that suppresses Canada thistle, make sure the Canada thistle is actively growing with enough regrowth to ensure adequate glyphosate translocation.

Quackgrass

At the pre-harvest stage of the crop, quackgrass usually has lots of leaf surface to absorb glyphosate and is actively growing, allowing good translocation to the roots.

Dandelion and Perennial Sow Thistle

To control dandelion and perennial sow thistle, they should be in the bud to bloom stage and actively growing. If dandelions are covered by a thick canopy of crop, it may be tough to get spray coverage down to the dandelions, so control could be reduced. Also sometimes the sow thistle won't be actively growing or have enough leaves on it by harvest time to obtain good control.

Terminating forage hay stands

Forage stands can be sprayed with glyphosate prior to cutting for hay. Wait three to seven days after application before cutting the stand to allow translocation into the roots. Use the higher registered rate when terminating a stand with legumes such as alfalfa. If the forage stand is under stress and not actively growing, the control may be reduced. Even under good conditions, alfalfa is difficult to terminate and sequential herbicide applications pre-seed and in-crop will likely be necessary.

Post-harvest use of glyphosate

If pre-harvest control of these and other weeds is not an option, post-harvest control of perennial weeds is a good option and in some cases provides even better control. Actively growing weeds and sufficient regrowth is critical to successful post-harvest perennial weed control. This isn't always possible, so evaluate the conditions carefully. Post-harvest glyphosate use also provides an opportunity to control perennial seedlings that have germinated over the summer before they overwinter and become tougher to kill.

Post-harvest glyphosate use will control both perennial and winter annual weeds. However consider that often later applications on winter annuals allow more weeds to germinate and emerge prior to spraying, while earlier fall application often results in better perennial weed control.

Post-harvest glyphosate targets the following weeds:

Perennial weeds: quackgrass, Canada thistle, dandelion and foxtail barley.

Winter annuals: ball and dog mustards, bluebur, Canada fleabane, chickweed, cleavers, common groundsel, common peppergrass, downy brome, flixweed, narrow-leaved hawk's-beard, night-flowering catchfly, prickly lettuce, pygmy flower, scentless chamomile, shepherd's-purse, stinkweed, stork's bill and yellow whitlow grass.

The impact of frost on fall weed control varies depending on severity and length of frost, and the type of weed. Monsanto has the following advice regarding

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The Saskatchewan Prairie Conservation Action Plan (SK PCAP)

By Michelle Yaskowich, PCAP Manager

The Saskatchewan Prairie Conservation Action Plan (SK PCAP) brings together agencies and organizations representing producers, industry, provincial & federal governments, non-government organizations and research & educational institutions working towards a common vision of prairie conservation in Saskatchewan. The PCAP Partnership has proven to be an important forum for guiding conservation and management efforts within Saskatchewan's Prairie Ecozone. On Tuesday, June 23, 2009, 26 PCAP partners renewed their commitment to native prairie conservation at a Signing Ceremony held in Regina, SK to launch the 2009-2013 Prairie Conversation Action Plan. This was the third consecutive 5-year Plan signed by the PCAP Partnership but instead of an all inclusive 5-Year Plan, the Partnership decided to embrace a new approach with the implementation of a 5-Year Framework upon which Annual Work Plans are developed. Two 5-year Plans were previously signed in 2000 (1998-2003 Plan) and 2003 (2003-2008 Plan). The Signing Ceremony officially kicked-off Native Prairie Appreciation Week 2009.

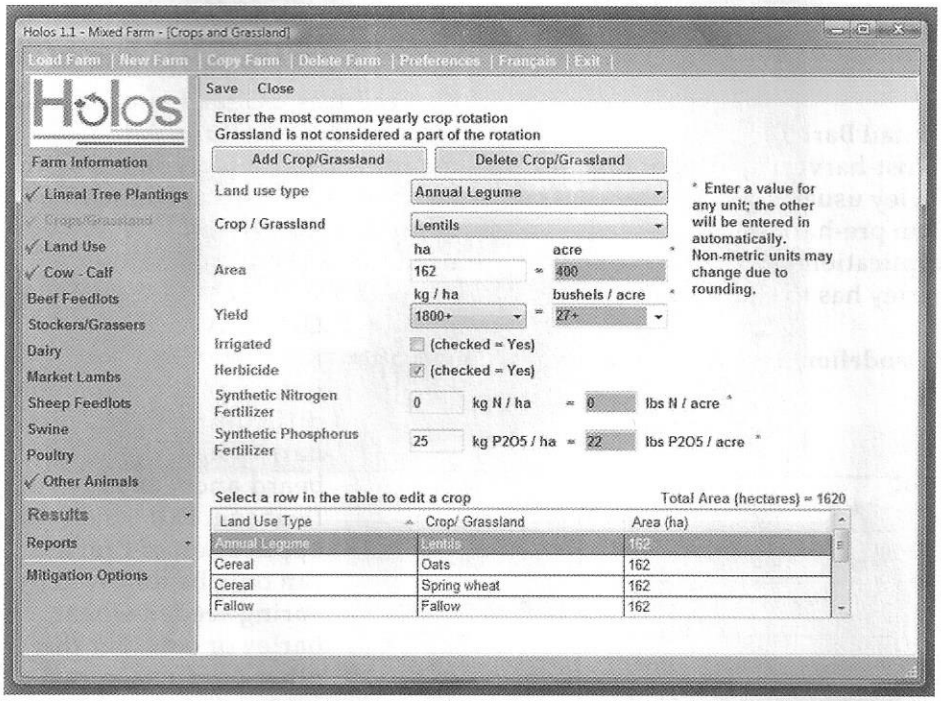
Native Prairie Appreciation Week (NPAW) is the only week in North America dedicated to increasing awareness and appreciation of native prairie ecosystems and their importance to Saskatchewan's provincial, environmental and agriculture sectors. Held every third week in June since 1999, it is an opportunity for Saskatchewan residents, especially ranchers, naturalists, hunters, educators and resource agency specialists, to recognize and celebrate the value of native prairie. Jointly proclaimed by the Minister of Agriculture and the Minister of Environment, NPAW 2009 ran from June 21-27, 2009 and included the Society for Range Management's "Discovering the Missouri Coteau" Workshop and Field Tour based out of Moose Jaw, SK. The two and a half day event included presentations on the Geomorphology, Grazing Management, Plants and Animals (including species at risk) of the Missouri Coteau, Managing Invasive Plant Species, Moose Jaw River Watershed Stewards (including Growing Forward) and The Environmental Stewardship Award (TESA) with tours of the Saskatchewan Burrowing Owl Interpretive Centre, Val Jean SK Provincial Community Pasture, Mortlach SK Provincial Community Sheep Pasture, National Historic Site – Claybank brick factory, a local producer's seeded native pasture and the Key West/Excel P.F.R.A. pasture.

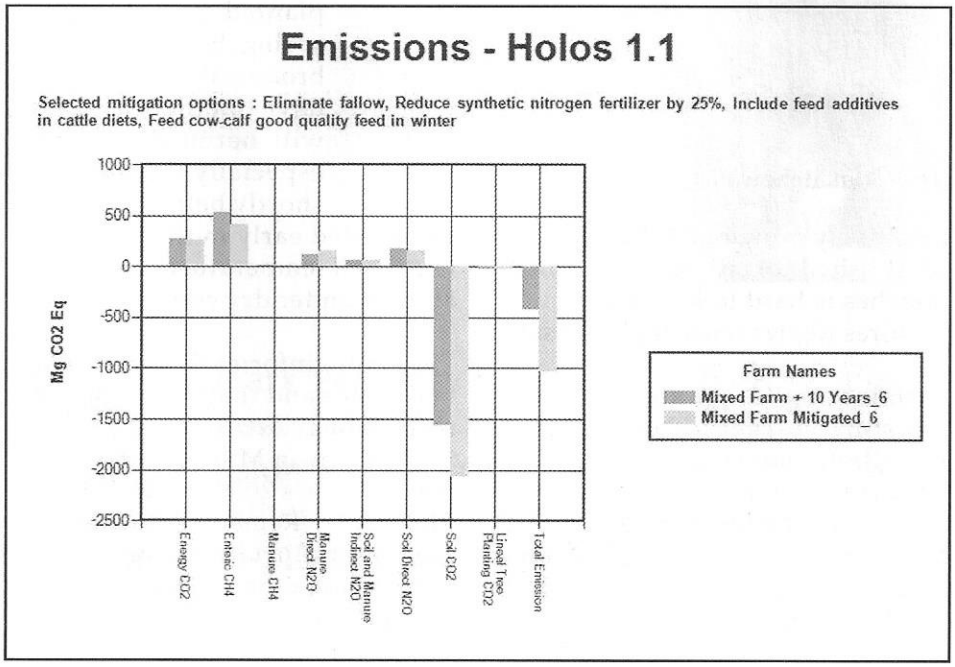
Photo courtesy of Andrea Kotylak

On May 4, 2009, PCAP launched their new website, one of their main communication tools, to reflect the commitment to increasing awareness about native prairie and its conservation by the PCAP Partnership. The website is now full of easily accessible, prairie related, information including who PCAP is, its partners and supporters, communications, resources and literature, upcoming events and workshops, and other related websites and photos. The "What's New" section on the website's Homepage allows anyone to keep up to date with what's going on with the PCAP partners and other prairie conservation activities in our province. Everyone is invited to visit PCAP's website at **www.pcap-sk.org!**

as herbicides and fertilizer. Emissions associated with manure are attributed to the farm of origin even if it is "exported" off the farm. A feedlot includes emissions tied to purchased feed by entering the crop complex involved in the feed production.

Results can be displayed in several fashions. The easy to understand one is a bar chart with emissions in tonnes of carbon dioxide equivalent (mg CO_2 eq) as seen figure 2. The *bottom line* is given with the bar called total emissions. The other areas of a typical farm that the scientists developing the program have deemed to have significant amounts of greenhouse gas production on farms are displayed in the chart as: methane (CH_4) production from manure and ruminant activity, nitrous oxide (N_2O) production from manure and fertilizer application to soils, CO_2 from energy use as well as the amount sequestered in soil and planted tree production. At the top of the page it can be seen that comparisons can become part of the chart as different mitigation options or greenhouse gas reducing practices are hypothesized for any particular farm.





It is important to note that another aspect of any farms entered information includes time sensitive factors for changes in land use. Most producers are familiar with the concept that at the outset of initiating a practice that impacts carbon storage or sequestration the change can be large in the first few years but eventually reaches equilibrium. Running several scenarios on this program can quickly give producers a feel for the length of time it takes to near this equilibrium.

The program devotes a significant area to running mitigation options depending on any one farms particular mix of operations. These are simple to run scenarios the scientists designing the program felt were good mitigation options for producers to explore. There is also the opportunity to rework a producer's initial farm information with proposed changes and then compare the emission results in chart format as referred to earlier.

Currently AAFC has contracted provincial organizations across Canada to get producers to try out the program with their farm information and then evaluate program aspects and results. In Saskatchewan, SSCA has been contracted for this project. SSCA has in turn hired Garry Mayerle and Eric Oliver to find individual and small groups of producers that would like to go through this calculator. These 2 fellows are looking for producers they can guide through the program who will then do the short evaluation. They can easily go through the calculator with you in 2 to 3 hours. If you or a small group of your producer buddies are interested in working through this calculator they should contact SSCA head office, or Garry Mayerle - 306-873-5993 – gmayerle@gmail.com or Eric Oliver – 306-741-2188 - eoliver@sasktel.net.

post-harvest spraying and frost implications.

Light frost (0 to 4 °C) shouldn't negatively affect perennial or winter annual weed control. Spray if the daytime forecast is 8 °C for at least two to four hours and there's no risk of a nighttime frost.

For heavy frost (-5 °C or colder), wait at least one to two days to assess injury severity; treat only if the majority of plants are more than 60 per cent green and showing signs of active growth. Spray if the daytime forecast is 8 °C for at least two to four hours and there's no risk of frost.

Canada thistle

Research has indicated a post-harvest glyphosate application may only provide 65 per cent control of Canada thistle but the level of control can increase to 82 per cent if more regrowth (i.e. three to four new leaves) is present (Table 1). The rate of regrowth will vary among the Canada thistle populations within a field. Ensure at least 85 per cent of the field's population has adequate regrowth before applying glyphosate.

Dandelion

Generally post-harvest application gives better and longer lasting control of dandelions than pre-seed applications (see graph 1). Similar results were found with fall vs spring applied Prepass or glyphosate at 0.5 l/ac + Express. Also dandelion control at pre-harvest can be challenging because good coverage is difficult. Research at the U of S found pre-harvest control of dandelions was lower than September post-harvest applications. October applications sometimes had lower control due to the plants becoming dormant.

Table 1. Canada thistle control with Roundup. Rate is based on 360 grams/litre concentration.

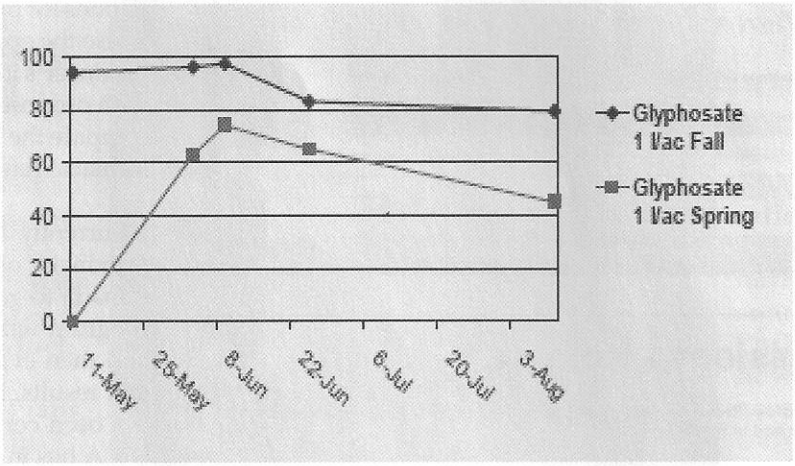
Treatment	Rate (L/ac)	% Control (9-10 MAT*)
Preharvest	1	90
Post-harvest (all trials)	1 – 2	65
Post – harvest (3-4 new leaves)	1 – 2	82

Source: Monsanto. *MAT = months after treatment.

Foxtail Barley

Post-harvest control of foxtail barley usually gives better control than pre-harvest or pre-seed applications. Again, the foxtail barley has to show regrowth and be actively growing for best results. Established foxtail barley in bunches is hard to kill and requires higher rates of glyphosate.

Graph 1: Per cent Dandelion control assessed during summer after treatment



Source: University of Saskatchewan

Terminating forage stands

Post-harvest control of hard to kill alfalfa plants gives an opportunity for sequential applications going into the following year, ie. spring burnoff and in-crop suppression. Use 540 to 720 grams active per acre of glyphosate (1.5 to 2 litres per acre of 360 grams/litre concentration). If seeding to cereals the following spring, add one half to one litre per acre of 2,4-D to the glyphosate to boost control.

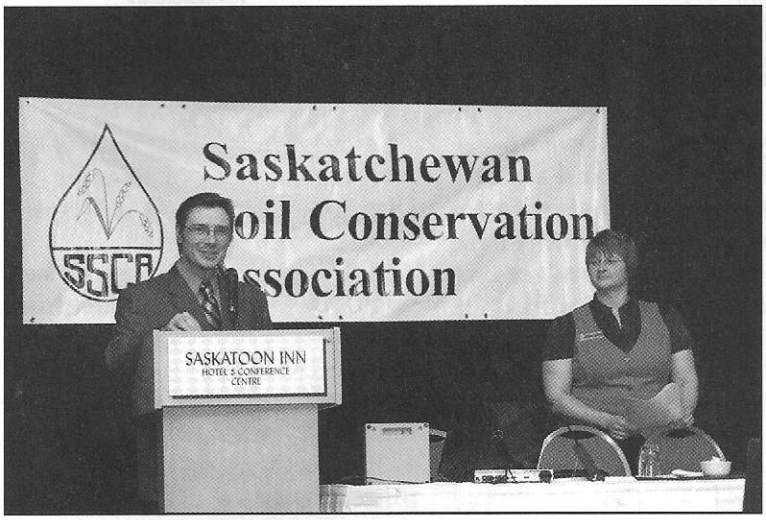
Other options for winter annual control

Winter annuals are generally easier to kill in the fall as seedlings versus established over-wintered plants. Controlling them in the fall also reduces usage of late fall and early spring moisture. As mentioned earlier, glyphosate can be used to control certain winter annuals. Other herbicides often used for fall control of winter annuals are PrePass, Express, 2,4-D, MCPA or dicamba. Recognize that some winter annuals are more difficult to kill such as narrow-leaved hawk's beard and Canada fleabane. Fall application of PrePass can only be followed by spring seeded wheat, barley or oats. For the other products, cereal crops can be safely planted the following spring, however broadleaf crops may have tolerance issues with herbicide residues especially if applied shortly before freeze up and seeded early in the spring when soil temperatures are cold and/or under dry conditions.

For more information on residual herbicides and their re-cropping restrictions refer to the Saskatchewan Ministry of Agriculture's 2009 Guide to Crop Protection. Remember to always refer to product labels for application details and precautions.

SSCA Annual Conference and Trade Show

February 9 & 10, 2010
Evraz Place, Regina, SK



Be sure to mark February 9-10, 2010 at EVRAZ Place in Regina on your calendar and plan to attend the SSCA Annual Conference. As in past years, there will be a mix of professional and producers speaking on a variety of topics relating to direct seeding and other agronomic issues. For more information, contact the SSCA head office at **1-800-213-4287 or www.ssca.ca**

Call for Nominations

A number of SSCA Director Positions are coming open.

At a recent Board Meeting, we asked the Board members what appealed to them about serving as a Director. Networking with fellow Board members was the best part of being on the SSCA Board. The directors indicated that they are always learning something from their fellow directors. That there are only 3 Board meetings per year is also appealing. Everyone knows that we all attend a large number of meetings when we live in rural Saskatchewan. Being entrusted to represent the views of farmers from their respective regions is generally considered an honor by the directors. The SSCA Board has a number of standing and special committees so each director has the opportunity to serve on a committee in which he/she is particularly interested. The SSCA also pays expenses and a small honorarium to compensate for the time away from the farm.

A couple of the disadvantages of serving on a provincial board included time away from home and long drives to meetings and that some of the Committees meet more frequently than at the Board meetings.

In spite of those disadvantages, the SSCA has been fortunate to have many committed, knowledgeable people serving on its Board. Now is a great opportunity for you **to serve on the Board of the SSCA and assist the other Directors in their efforts to represent the province's farmers on agricultural and environmental issues.**

There are 4 directorships available this fall. The North East Region has been vacant since February 2008. If you reside in this region and are interested in being on the Board, please let Doyle Wiebe or Blair McClinton know that at your earliest convenience.

In the Southwest Region, Dan O'Reilly will finish his final term as the SE Director in February. He will not, therefore, be seeking re-election.

In the Northwest Region, Laura Reiter will finish her final term as the SE Director in February. She will not, therefore, be seeking re-election.

Completing his first term is Ken Abrahamson, one of 3 Famer Directors-At-Large (DAL).

Nomination papers for all the positions except the NE are to be filed by September 30 and signed by 3 SSCA members. To obtain nomination papers, please contact the SSCA Head Office at (306) 695-4233 or send an email to info@ssca.ca

www.ssca.ca

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