



# Prairie Steward

## Farming For Your Future Environment



The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Fall Issue No. 51, 2007

## Highlights from the 2006 Ag Census

By Blair McClinton, PAg  
SSCA Executive Manager

Every five years Canadian farmers are asked to participate in the Census of Agriculture. Unlike the annual cropping statistics tracked by Statistics Canada, the census is unique in two ways: it collects information from all farmers (not just a sampling), and it tracks other production information like farm size, gross returns, input use and soil conservation practices. From SSCA's perspective, we track several trends related to soil conservation.

### CONSERVATION TILLAGE

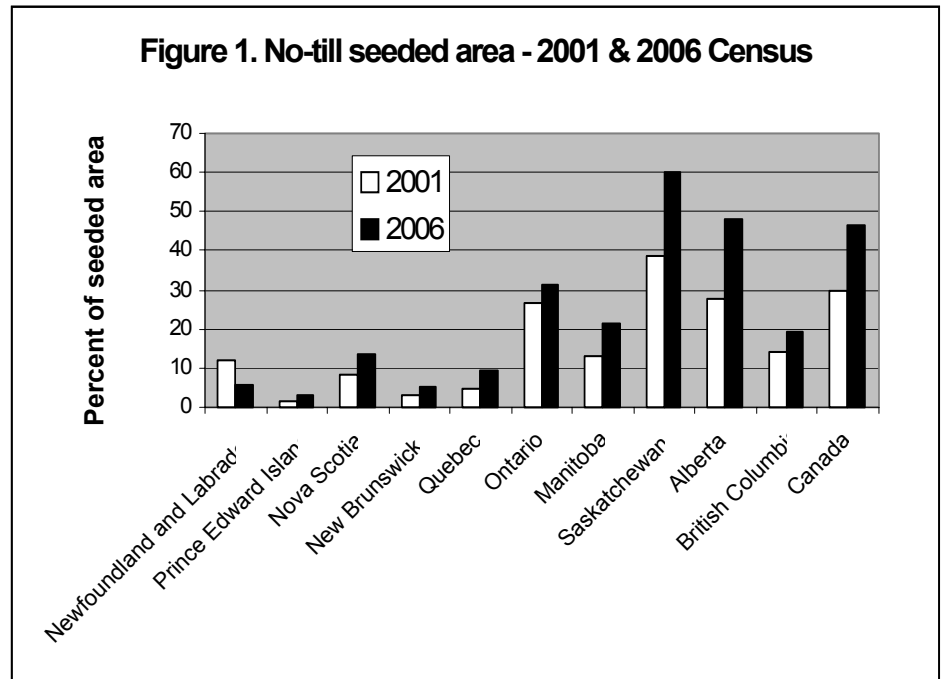
The movement towards direct seeding has been going on since the early 90's. There is a great deal of

interest in if the trend is continuing to increase or is it levelling off. There was a major increase in direct seeding across Canada (46% in 2006) was particularly strong in Saskatchewan

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Figure 1. No-till seeded area - 2001 & 2006 Census



and Alberta (Figure 1). In Saskatchewan, the direct seeding area increased from 39% to 60% between 2001 and 2006. Alberta saw a similar increase going from 27% to 48%.

Within Saskatchewan there variability in direct seeding adoption ranges from a low of around 46% in a Census Region in east central Saskatchewan to a high of around 69% in a Census Region in southwest Saskatchewan. However, only three Census Regions had direct seeding levels below 55%.

I also compared Census Regions in eastern Saskatchewan with the adjacent Regions in western Manitoba. This comparison typically found 20% higher levels of direct seeding in the adjacent regions in eastern Saskatchewan. This implies that agri-environmental program differences between the provinces can explain these different outcomes..

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# Your Executive at Work for You

There is always behind-the-scenes work that occurs by the Board and Executive of any volunteer organization. The SSCA is no exception. Over the past few months SSCA has been involved in a wide variety of activities.

Last winter, Alberta Environment announced that, starting July 1, 2007, they would begin regulating greenhouse gas emissions (GHG) from Alberta-based facilities. Offset trading was included as one of the methods companies could use to meet their requirements. SSCA was invited to participate in their industry meetings and offset protocol development meetings.

Last spring, the Saskatchewan government announced both their Green Strategy, and their Climate Change and Energy Strategy. SSCA attended the announcement meetings. In addition, SSCA also participated in a Saskatchewan Climate Change Stakeholders meeting. Saskatchewan Industry and Resources, and Saskatchewan Environment established the stakeholders group to share information on climate change with all sectors of the Saskatchewan economy.

In April, the Federal government announced its intent to regulate GHG emissions through the Clean Air Act. Environment Canada conducted a series of consultation meetings across Canada in the spring. SSCA participated in the Vancouver meeting.

SSCA also prepared a written submission to Environment Canada.

SSCA has also been keeping an eye on developments in the global carbon market. Dan O'Reilly recently attended the Carbon Markets North America Conference in New York on SSCA's behalf. Both voluntary and regulated markets are quickly developing in the United States. Since the USA is the largest emitter in the world, it will be important to track this developing market.

Since the last edition of the Prairie Steward, the following is a list of activities in which each Executive member has been involved.

## EDGAR HAMMERMEISTER, PRESIDENT

March 21 - Soil Conservation Council of Canada Annual General Meeting - Kananaskis, AB.

March 22 - SK Provincial Budget Address.

March 23 - Ag Forum, Yorkton organized by Gary Breitreuz, MP.

April 4 - SSCA Conference Planning meeting.

June 4-5, Carbon Offset System Consultation, Vancouver.

June 25 & 26 SSCA Board Meeting.

July 4 - SK National Farmers' Union Summer Meeting - speaking engagement - carbon policy.

July 5-6 - Soil Conservation Council of Canada Summer Meeting - Dawson Creek, BC.

July 23 - Parkland Agri Services & EpCor "CROP Project" meeting.

July 31 - Submitted position paper to Environment Canada's consultations on offset trading.

## LAURA REITER, 1<sup>ST</sup> VICE-PRESIDENT

March 11 - Carbon meeting in Saskatoon.

March 13 - SCCD meeting in Saskatoon.

March 18 - Conference call.

April 26 - Meeting at U of S for Carbon.

June 14 - Saskatoon for the Premier's Sustainable Energy Strategy Launch.

June 25 & 26 - SSCA Board Meeting.

July 23 - Parkland Agri Services & EpCor "CROP Project" meeting.

July 31 - Submitted position paper to Environment Canada's consultations on offset trading.

## DOYLE WEIBE, 2<sup>ND</sup> VICE-PRESIDENT

April 25, 2007 - Alberta Offset System Information Meeting, Calgary.

June 25 & 26 - Attended the June Board Meeting.

July 23 - Parkland Agri Services & EpCor "CROP Project" meeting.

July 31 - Submitted position paper to Environment Canada's consultations on offset trading. ●

## 2007-08 SSCA BOARD OF DIRECTORS

### Regional Directors

Daniel O'Reilly SW 642-5863

Doyle Wiebe WC, 2nd VP 283-4340

Laura Reiter NW, 1st VP 827-2267

Edgar Hammermeister SE, President 489-2281

Keith Stephens EC 334-2862

Stacey Moskal NE 277-4433

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Ken Abrahamson, 595-2082

Garry Noble 354-2679

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Guy Lafond 695-5220

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### Direct Seeding Hotline

**1-800-213-4287**

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

### Disclaimer:

The opinions of the authors do not necessarily reflect the position of the Saskatchewan Soil Conservation Association.

## HEAD OFFICE

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# President's Report

By Edgar Hammermeister, PAg  
SSCA President

Congratulations are in order. The Saskatchewan farmer continues to lead the country in adopting management practices that both protect and enhance our soil resource. **According to the 2006 Census, 60% of Saskatchewan's land is under 0-till management.** The credit belongs to you the farmer who took the risks, suffered the scrutiny and criticism of neighbours, and invested in the land (building organic matter does not come cheaply). The SSCA served as a facilitator for this change and as such, we have been roundly recognized for our professional delivery of programs and expertise.

Congratulations are also in order to the newly elected Saskatchewan Party. With the new Government comes new ideas and enthusiasm for meeting the opportunities that are in Saskatchewan. During the election campaign, light was shed on Saskatchewan's growing Greenhouse Gas emission challenges. Saskatchewan's emissions have increased 62% from 1990 to 2004. These challenges come from a booming economy generating products for export. Recognizing Saskatchewan is part of a National economy playing in international markets, our province will be impacted tremendously by what ever climate change mitigation strategy is developed for Canada. Agriculture is identified as part of the solution. We have the soil carbon sink, we have emission reductions and we have the opportunity of bio-fuels. Each strategy will provide results, or can provide fantastic results, dependent on the policies shaping the opportunity. The SSCA looks forward to working with the new Government in highlighting our opportunities with the Federal Government.

Federal Climate Change Policy continues to evolve. The opposition parties rejected the Federal Government's first attempt at environmental policy. It was sent to committee and returned re-written as "Bill C-30 – Clean Air and Climate Change Act". This Bill "died on the order paper" earlier this fall when Prime Minister Harper prorogued Parliament. The Government has indicated that it intends to reintroduce elements of the Bill in the coming months. The governing Conservatives have put forward their own plans to meet greenhouse gas emission reductions and the reduction of air pollution. Though they use different base years (avoiding references to the Kyoto protocol), government officials acknowledge the targets for Industry are quite aggressive despite what the environmentalists say.

**The more things change the more they seem to stay the same.**

As directed by Environment Minister John Baird, Environment Canada has been consulting with stakeholders and the provinces. Submissions were received over the summer and Cabinet will be making important decisions on how the Carbon Offset trading system will evolve. For Agriculture, the fundamentals remain the same. We can deliver "carbon credits" through our soil sinks and through emission reductions. Industry badly needs the credits that we can produce. The system design needs to encourage farmers to participate; without us, regulated industry will move from very challenging emission reduction targets to nearly impossible ones.

The principles that the SSCA had advocated for in the past still apply, principally:

- C credit ownership - farmer created, maintained, & owned.
- If the credit has value to Canada, then it has value to the farmer.
- Simple and science based.



Edgar Hammermeister  
SSCA President

- Price Discovery: transparent, liquid, linked to global market.

A major debate will be over the baseline year and the project start date. To put it simply, the earlier the baseline year is established, the greater the recognition and potential value for the farmers building the soil sink. The earlier the baseline, the greater the percentage of the carbon you store each year will be available for carbon credits. An early baseline and project start year will also simplify the administration and tracking of fields thereby reducing costs to the system.

Fortunately, many of our concerns are similar to that of industry and our advocacy is matching their lobby.

Regardless, what you personally think of the climate change issue, remain focused on where policy is going. If industry becomes regulated, our cost of production will go up. We need a sound offset trading system to cover these costs.

I hope to see many of you at the our 20<sup>th</sup> annual conference in Regina. ●

# Herbicide Resistant Weeds – Prospective

Jody Dexter and Linda Hall

Herbicide resistant (HR) weeds threaten the sustainability of Canadian cropping systems. As the number of HR weeds continues to increase in Canada and worldwide (Figure 1), many growers are left with fewer alternative weed control products and often are forced to change their crop management practices.

Herbicide resistance is the inherited ability of a weed population to survive and reproduce following exposure to a herbicide dose that would normally be lethal. Susceptible weed

populations evolve herbicide resistance through selection, following frequent use of one or more herbicides with the same mode of action. HR weeds are normally very rare in a weedy population. However, if the selection pressure is maintained (herbicide from the same group is repeatedly used), the number of HR plants in the seed bank increases and over space and time, the frequency of these biotypes dominate the weedy population. Since HR weeds are initially present at low densities and because weeds occur in patches, a producer may not notice the HR weeds until the plants reach 10 to 30% of the weed population.

HR weeds may be resistant to only 1 herbicide group or to 2 or more herbicide groups. Also, resistant weeds may be resistant to a herbicide class within a herbicide group or all of the herbicide classes within a herbicide group. In western Canada, several weed biotypes have been reported to be HR, but

to evolve herbicide resistance than are weeds with an annual lifecycle which rely on seed production for propagation and dispersal. Some herbicides select for resistant weeds more quickly than others. Herbicides at risk are those that have been used extensively and those from high risk groups (Figure 2). Herbicide risk is estimated by

the number of applications that have been required previously to select for HR weeds (in western Canada or in other parts of the world). Not enough information is available for all herbicide groups to estimate herbicide risk, so some herbicide

groups are not classified.

**A recently registered herbicide called Cleanstart® from Nufarm may be of interest to Canadian growers that are looking for an alternative pre-seed herbicide to control problematic or HR weeds. Cleanstart® contains the active ingredients glyphosate and carfentrazone. Glyphosate belongs to Herbicide Group 9, whereas Carfentrazone belongs to Herbicide Group 14.**

Carfentrazone provides a novel mode of action for chemical weed control in western Canada. It presents an opportunity to diversify away from the use of glyphosate as the sole provider of chemical pre-seed weed control.

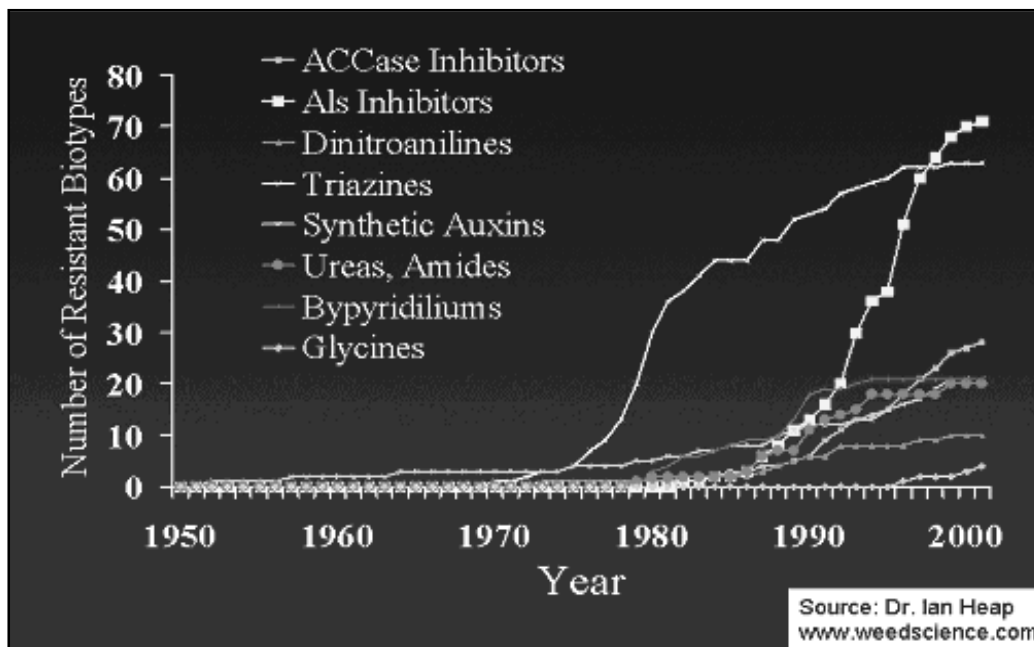


Figure 1. The number of reported HR weed biotypes world wide.

the number and incidence of HR weeds varies among the provinces (Table 1). Herbicide resistance was first reported to the Group 8 herbicides in western Canada and incidences of resistance to groups 2, 3 and 1 quickly followed.

Not all weeds and herbicides are the same from a resistance perspective. Weeds possess traits that promote the evolution of herbicide resistance. High rates of seed production with most seeds germinating within a year of entering the seedbank can accelerate the evolution of herbicide resistance. On the other hand, perennial weeds, particularly those with vegetative reproductive tissues, are less likely



As a nonresidual herbicide, this product is suitable for use in crop rotations that include sensitive crops such as pulses (peas, lentils, chickpeas and beans), potatoes, canola, flax, sunflowers, wheat, barley, oats and corn. The recommended application rate for this herbicide is 15 mL/ac of Carfentrazone plus 0.5 L/ac of Glyphosate.

Only emerged weeds will be controlled and because it is a contact herbicide, proper coverage is extremely important.

While Group 14 herbicides provide an alternative means of pre-seed weed control, their long term incorporation into western Canadian cropping systems will depend on stewardship of use. As of 2005, 3 weed species have been reported to be resistant to Group 14 herbicides across 2 countries.

Herbicide resistance to all groups of herbicides can be delayed or prevented. Herbicide resistance is a consequence of relying too much on herbicides for weed control. Any management action that reduces the selection for resistance will reduce the rate of resistance evolution. Tactics to delay herbicide resistance are most useful if they are a part of an Integrated Weed Management (IWM) system. An IWM ap-

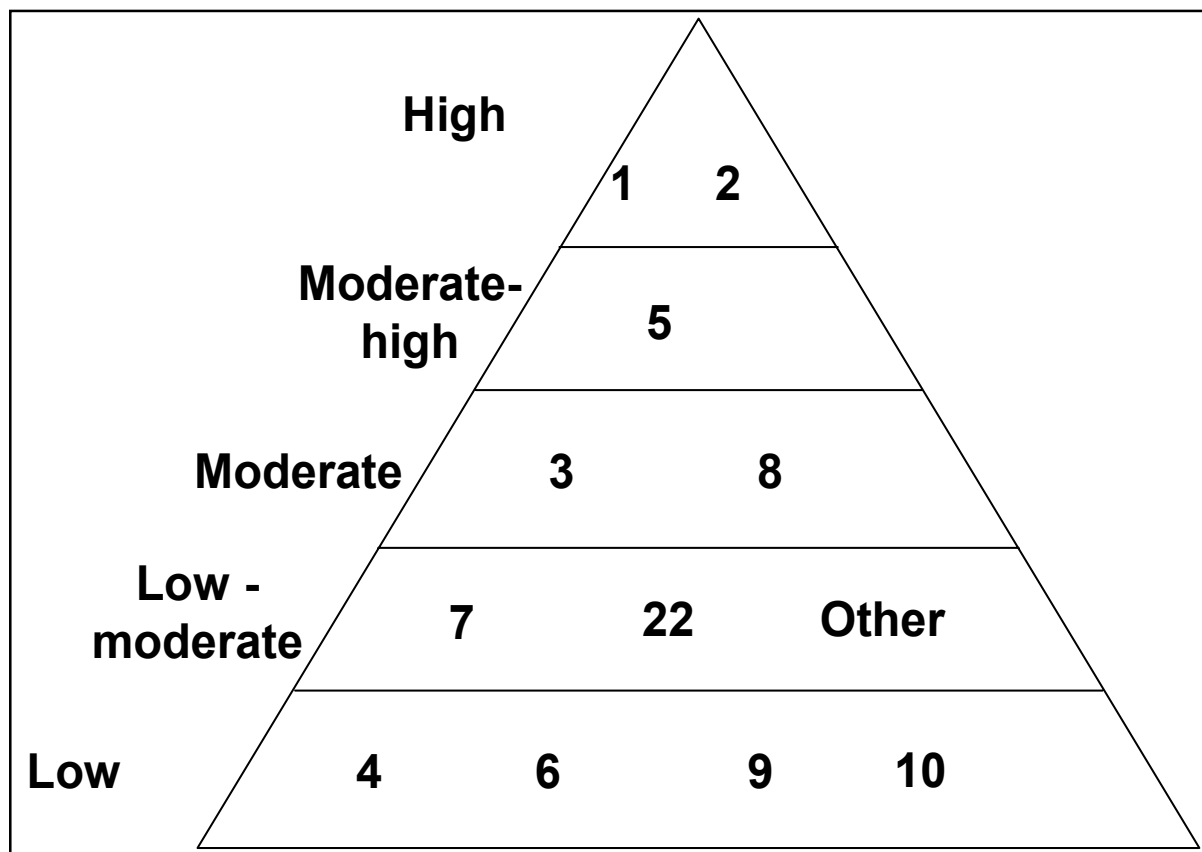


Figure 2. Herbicides at risk for developing herbicide resistance. Modified from Beckie.

proach combines all available weed control tools while maintaining an economic approach to crop production. In IWM, cultural and mechanical weed control methods are utilized and complement chemical weed control. Cultural control methods include using certified seed and varieties or hybrids that are more competitive, crop rotation, seeding in narrow rows or planting cover crops. Mechanical weed control may include inter-row cultivation or other forms of tillage. IWM encourages the use of herbicides in a rotation or as a mixture. Good mix partners are those that control the same weed(s) and those that come from different herbicide groups. Cleanstart® is an example of a good mix partner as it combines two different herbicides with two

different modes of action. For this reason, Cleanstart® can be used to slow the evolution of both glyphosate and carfentrazone resistant weeds.

Herbicides are very important tools for weed management and provide an efficient and cost effective means of weed control. All herbicides should be seen as a limited resource that needs to be protected if they are to be utilized in the future. With the recent registration of Cleanstart® in western Canada, producers have access to a novel mode of herbicide action but its long term use in Canadian cropping systems will depend on producers adopting an IWM approach to weed control. By adopting an IWM approach, the evolution of HR weeds may be effectively delayed or prevented. ●

# Fuelling the Farm

SSCA's 20Th Annual Conference  
February 12 & 13, 2008  
IPSCO Place, Regina, Saskatchewan

## MONDAY, FEBRUARY 11

8:00 p.m. 20th Anniversary Reception  
Ramada Hotel

## TUESDAY, FEBRUARY 12

8:00 a.m. Registration

9:45 a.m. Opening Remarks

10:00 a.m. Keynote Address:  
Dr. David Kohl, Agricultural Economist,  
Virginia Tech University

### SESSION 1 IMPACTS OF DIRECT SEEDING

10:45 a.m. "Soil Changes" - Dr. Jeff Schoenau, PAg,  
U of S, Saskatoon, SK

11:05 a.m. "Soil Biology" - Dr. Newton Lupwayi,  
AAFC, Lacombe, AB

11:25 a.m. "Weed Dynamics" - Gord Thomas PAg,  
AAFC, Saskatoon, SK

11:45 a.m. "Long-Term vs Short-Term Conservation  
Tillage" - Dr. Guy Lafond, PAg, AAFC,  
Indian Head, SK

12:05 P.m. Lunch break & Poster Session

### SESSION 2 CONCURRENT SESSIONS

#### 2A. POTENTIAL NEW CROPS

1:30 p.m. "Camelina" - Ryan Mercer, Producer,  
Lethbridge, AB

1:50 p.m. "Prairie Carnation" - Dr. John Balsevich,  
National Research Council, Saskatoon, SK

2:10 p.m. "Soybeans" - Kevin Elmy PAg, Producer,  
Saltcoats, SK

#### 2B. GRAINS & GRAZING

1:30 p.m. "Selecting Feed Barley based on NIRS" -  
Dr. James Helm, Alberta Agriculture,  
Lacombe, AB

1:50 p.m. "Grazing Alfalfa & Managing Bloat" -  
Dave Kerr, Producer, Lashburn, SK

2:10 p.m. "Grazing Native Forages" - Dr. Michael  
Schellenberg, AAFC, Swift Current, SK

### SESSION 3. INTERACTION OF CROP ROTATION AND SEEDING SYSTEMS

3:15 p.m. "Alternative Cropping Systems Study: An  
Overview" - Stu Brandt, AAFC, Scott, SK

3:35 p.m. "Alternative Cropping Systems Study:  
Nutrient Cycling" - Dr. S. Malhi, AAFC, Saskatoon, SK

3:55 p.m. "Crop Rotations on My Farm" - Colin  
Rosengren, Producer, Midale, SK

4:30 p.m. SSCA Annual Meeting

6:00 p.m. Awards Banquet

8:30 p.m. Bearpit Sessions

### BEARPIT SESSIONS

#### #1 CROP MANAGEMENT

Practical tips on minimizing production risk and improving  
management of crop establishment, fertility, weeds, and  
diseases.

- Dr. Tom Jensen, Internation Plant Nutrition Institute,  
Saskatoon, SK

#### #2 CATTLE AND GRAIN

Practical tips on livestock and forage management, and  
integrating cattle into grain operations.

- Glen Barclay, PAg, Saskatchewan Agriculture & Food,  
Saskatoon, SK

## WEDNESDAY, FEBRUARY 13

### SESSION 4. ENVIRONMENTAL STEWARDSHIP EQUALS POSITIVE ECONOMICS

8:30 a.m. "Conservation Agriculture is Sustainable"  
- Wendy Holm, PAg Bowen Island, BC

9:15 a.m. "How Consumers Think" - CJ Katz, Media  
Commentator, Regina, SK

9:40 a.m. "Natural Systems Farming"  
- Dr. Martin Entz, U of M, Winnipeg, MB

10:00 a.m. "Marketing Sustainability" - Karl Kupers,  
Shepherd's Grain, Spokane, WA



## FUELLING THE FARM CONFERENCE REGISTRATION

To Register Call 1-800-213-4287  
or (306) 695-4233

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

Prov: \_\_\_\_\_

Postal Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

RM# \_\_\_\_\_

Representing: \_\_\_\_\_

Producer: Yes  No

SSCA Member: Yes  No

### SSCA Members

**Before February 1, 2008** (GST Included)  
Includes: all meals & conference proceedings. \$95.40

Additional Farm Unit Members  
Includes: all meals & no conference proceedings. \$84.80

**After February 2, 2007**  
Includes: all meals & conference proceedings. \$116.60

Additional Farm Unit Members  
Includes: all meals & no conference proceedings. \$106.00

### Non-Members

**Before February 2, 2007**  
Includes: all meals, conference proceedings & 1 year SSCA Membership. \$145.40

**After February 2, 2007**  
Includes: all meals, conference proceedings & 1 year SSCA Membership. \$166.60

### Single Day

**SSCA Members**  
Includes: lunch & conference proceedings. \$74.20

Additional Farm Unit Members  
Includes: lunch & no conference proceedings. \$63.60

**Non-Members**  
Includes: all meals, conference proceedings & 1 year SSCA Membership. \$124.20

### Extras

Extra Banquet Tickets \$37.10

Extra Conference Proceedings \$13.00

Total Amount Enclosed \$ \_\_\_\_\_

Please make cheques payable to:  
SSCA

Box 1360, Indian Head, SK, S0G 2K0

Fax: (306) 695-4236

GST#: 137200515 RT0001

### SESSION 5. CONCURRENT SESSIONS

#### 5A. NEW FARM TECHNOLOGIES

10:45 a.m. "Upgrading the Sprayer" - Brian Storozynsky, Ag Tech Centre, Lethbridge, AB

11:05 a.m. "Retrofitting My Equipment with Electronics" - Keith Stephens, Producer, Balcarres, SK

11:25 a.m. "Leaf Wetness Sensors" - Dr. Ron Pitblado, U of Guelph, Guelph, ON

#### 5B. DEVELOPMENTS IN NUTRIENT MANAGEMENT

10:45 a.m. "Controlled Release of N & P" - Ray Dowbenko, PAg, Agrium, Calgary, AB

11:05 a.m. "Hydrogen Fertilization of the Soils: Is This A Benefit of Legumes In Rotation?" - Dr. David Layzell, Queen's University, Kingston, ON

11:25 a.m. "Interpreting Yield Maps" - Ken Greer, PAg, Western Ag Innovations, Saskatoon, SK

### SESSION 6. NEW AND EMERGING ISSUES

1:00 p.m. "Nano technology: Potential for Agriculture" - Dr. Bernardo Predicala, U of S, Saskatoon, SK

1:25 p.m. "Cellulosic bioproduct economy" - Dr. Danny LeRoy, U of L, Lethbridge, AB

1:50 p.m. "China's Impact on the Prairie Farm Gate" - Carl Potts, Pulse Canada, Winnipeg, MB

2:50 p.m. **Closing Address:**

"Opportunities in Agriculture & in Saskatchewan!" - Dr. Graham F. Parsons, Prairie Centre Policy Institute, Regina, SK

3:35 p.m. Draw for Conference Prizes

### ACCOMMODATIONS

Rooms have been blocked for the conference at the following Hotels under the Saskatchewan Soil Conservation Association's name. Rooms must be reserved before **January 12, 2008** to receive the conference rate.

#### Hotel

Ramada Hotel (306) 569-1666

Wingate Hotel (306) 584-7400

# Using Microbes for Weed Control – What is it?

By Gary Peng, Karen L. Bailey, and Susan, M. Boyetchko  
Agriculture and Agri-Food Canada (AAFC)

Saskatoon Research Centre

For decades we have been quite dependent on herbicides for weed control, due mostly to relatively inexpensive and effective chemicals available in the marketplace. Increasing adoption of no-till direct seeding and herbicide-tolerant crops in western Canada is changing the dynamics of herbicide use, with applications gradually concentrating to fewer modes of action. Under these circumstances, an integrated strategy is particularly important to maintain a biodiversity within crop production systems and the long-term effectiveness of weed control.

Microbial weed control is an ecologically based approach within the framework of integrated weed management that involves deliberate release of exotic pathogens (classical) or mass application of indigenous microorganisms (bioherbicides). The classical approach can be useful for introduced weeds in pastures and rangeland, whereas bioherbicides are used in a similar manner as chemical herbicides. These microbes can be fungi, bacteria, or even viruses. There are several potential benefits to this approach; microbes have different modes of action from those of common herbicides and provide an additional weed control option. Often host-specific strains are selected. They are highly efficacious against a single weed or a group of weed targets, safe to crops, and benign to the environment.

We have probably all seen sick weed plants caused by pathogens. Under most field conditions, however, these diseases frequently are either too light or too late in the season to provide adequate, timely weed control. Applying a dose of microbial inoculum (bioherbicides) will jump start the

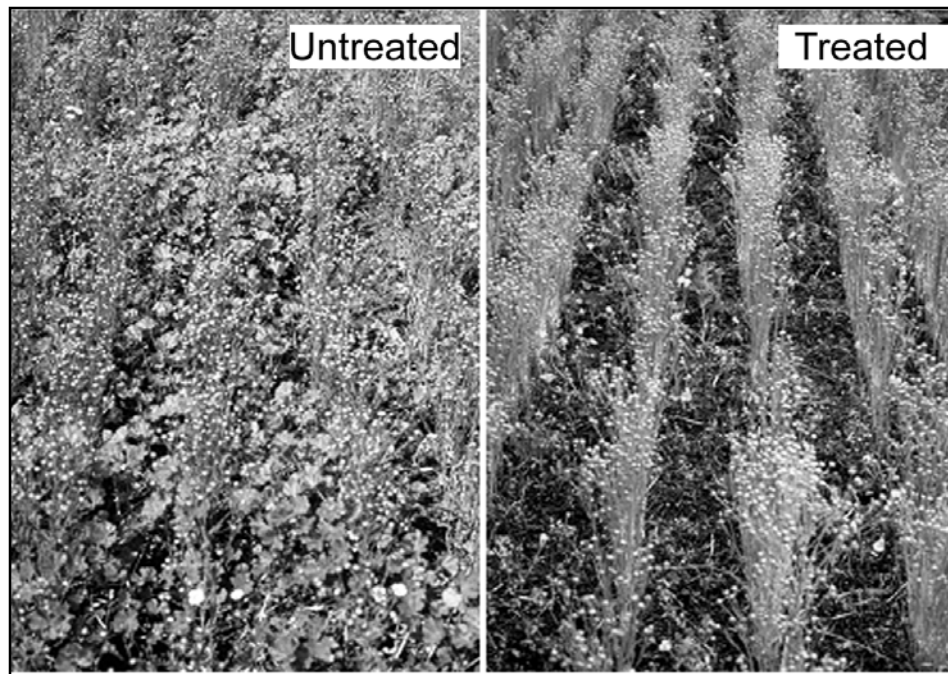


Figure 1. Control of round-leaved mallow with BioMalO in flax (Pictures provided by Philom Bios)

disease at a great severity, thus resulting in sufficient weed suppression or control in a timely fashion. Several factors are critical to success of this technology. First of all, the microbial agent selected has to be efficacious against the weed target(s) and tremendous efforts are required to survey, screen, and identify candidates from a diverse population of microbes. The agents have to be safe to crops, humans and the environment. For commercial feasibility, these microbes will have to be mass produced at reasonable costs and can be applied using common field equipment. Because bioherbicides contain living

organisms, special formulations are normally required to protect the microbes from adverse conditions during storage and post applications. BioMalO is the first bioherbicide developed at AAFC Saskatoon for control of round-leaved mallow (Figure 1). As a proto-type, BioMal demonstrates the potential of microbial weed control and more are in the works. One of them is for biocontrol of scentless chamomile, an invasive species on the prairies.

Continued next page

Table 1. Percent control of scentless chamomile at the 11-leaf stage

Fungus alone	26%
Curtail M alone	58%
Sencor alone	49%
Curtail M plus Fungus	70%
Sencor plus Fungus	76%

\* Based on fresh-weight comparison against untreated controls.



## Using Microbes for Weed Control - continued

Scentsless chamomile (Figure 2) is now widespread in Saskatchewan, especially in parkland areas with higher rainfalls. Scentsless chamomile was introduced from Europe about 100 years ago and has been a very adaptable species on the prairies. It is common around sloughs and along transition areas such as fence lines or right-of-ways. In an infested field, scentsless chamomile can often become the worst weed problem because of its strong competitiveness and tolerance to herbicides. Some herbicides are effective only before the weed reaches the 4-leaf stage. Serious yield losses can occur in spring cereals, and 25 weeds per square meter can cause a yield reduction of 50-80% during a cool and wet season.

Microbes were explored as a potential new option for control of scentsless chamomile. Extensive field surveys were conducted in Saskatchewan as well as in west-central Europe, with over 700 fungal isolates evaluated. A fungus named *Colletotrichum truncatum* was found to be promising. This is a distinct strain that causes no diseases on any field crops. When applied at volumes less than 90 L per acre, this fungus resulted in moderate only weed control.

Can the efficacy be enhanced? Our study found that several chemical herbicides could be tank mixed with the fungus for synergy, resulting in more effective weed control than either component applied alone. Normally, with direct attack by pathogens, chamomile plants (or weeds in general) would try to resist the strike by mobilizing their defense mechanisms including various physiological and biochemical changes, leading to reduced disease damage. Many herbicides, however, affect weeds by targeting certain biochemical processes and some of these interruptions significantly lower plant defense reactions, allowing pathogens to become much more destructive on the weed. This is the basis for the fungus-herbicide synergy.

Potential benefits of this synergy may include enhanced efficacy of weed control, lowered rates of application



Figure 2. A lentil field in southern Saskatchewan infested by scentsless chamomile

for microbes/herbicides or both, and sometimes an increased spectrum of weed control. In the case of scentsless chamomile, spray window was also widened; high efficacy was seen on scentsless chamomile at even the 11-leaf stage when the fungus was tank mixed with the herbicide Sencor or Curtail M at label rates (Table 1). In the field, similar results were observed and the fungus plus Sencor treatment reduced the competitiveness of scentsless chamomile substantially in lentil plots (Figure 3).

There is tremendous diversity within microbial populations and we have barely scratched the surface. Although still in its infancy, microbial weed control holds promise and further research is needed to bring more of them into the use. ●

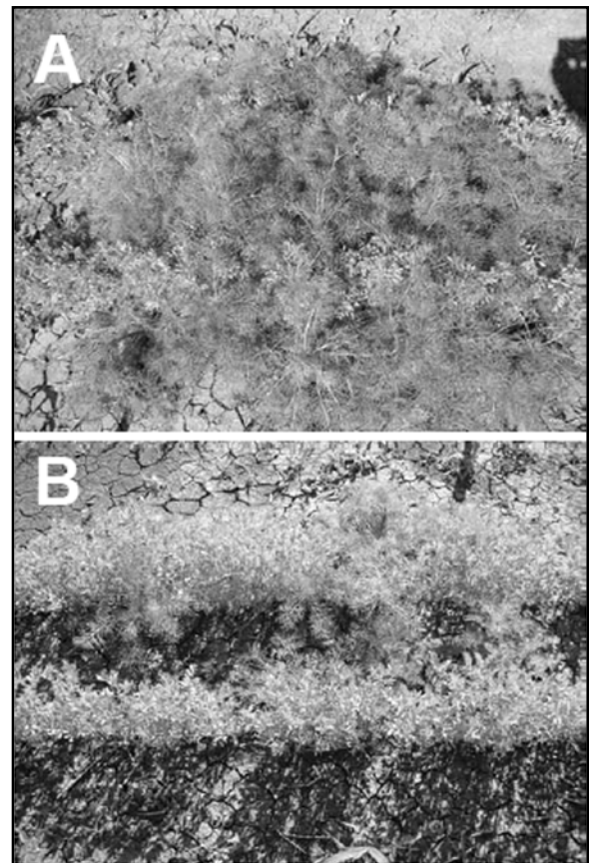


Figure 3. Scentsless chamomile in lentil plots treated with water (A) and Sencor plus the fungus *C. truncatum* (B).

# Why are some farms more *profitable*?

## Looking for what works: Featuring the AIC

*Adapted from "Looking for what works: Why are some farms more profitable?" from the April/May 2007 Canadian Farm Manager Newsletter from the Canadian Farm Business Management Council.*

Is this yet another report on what ails Canadian agriculture? That would be the cynical response to a recent study on profitability commissioned by the Agricultural Institute of Canada [AIC].

But the report raises questions – and suggests solutions – that all farmers need to consider, as suggested by the leading farmers that were part of the research process.

So the question was posed to Glen Laxdal of Lakeside Machinery Co-op, a grain farmer near Wynyard, Saskatchewan, "Why is it that some farms are very successful and others are not?"

"The answers are not easy to pinpoint, but that's what they're trying to do in this report," replies Laxdal. "To figure out why some farmers are more successful than others."

Laxdal, who is part of a co-operative farm in partnership with four other farmers doesn't hold himself up as a model, even though he's one of the "leading farmers" whose business practices are at the heart of the recommendations of the report. [The paper, entitled Redefining Agriculture is available at [www.aic.ca](http://www.aic.ca)].

Rather, Laxdal says that he and his partners are doing what they need to do in order to survive the rapidly changing agricultural environment.

"Even if you're doing everything you should, farming is still not as profitable a business as other sectors in the economy", he says.

"When you look at the amount of work we're doing and the hours we put in, you can be doing pretty good but not making as much as you would in another business. So you have to really like what you're doing."

Many of the report's findings aren't exactly new. It identifies no fewer than

16 best practices, including better marketing and cost management; product differentiation and selling into higher-margin niche markets; and forming value-chains and alliances.

"The solutions we're putting forward are based on what we've learned from interviews with leading farmers across Canada," says Al Scholz, one of the report's authors.

"There's a lot that farmers can do themselves – but it's based on innovation and diversification."

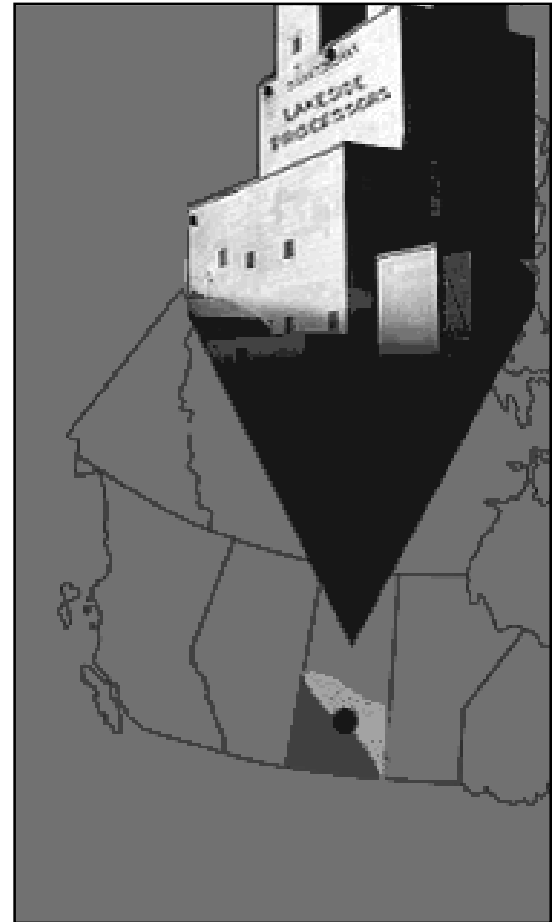
Glen Laxdal, and his partners in Lakeside Global Grain, is an excellent example of this, says Scholz, who has studied and written about leading farmers across Canada.

**"You have a small group of small farmers, who by working together, have been able to create some tremendous synergies,"** says Scholz. "This has allowed them to move up the value chain and into higher value processing and export marketing, resulting in less stress, less debt, sustained profits and high quality of life.

Lakeside Global Grains is also a good example of why adopting best practices means taking a lot of bits and pieces and assembling them in just the right way. To help farm managers get a better handle on this approach, Scholz and his co-authors grouped their 16 best practices into three broad categories.

Here's how it works in the case of Lakeside Global Grains.

The first category is called Relationship Management, and emphasizes alliances and networking, acquiring knowledge and dividing up roles that play to the individual strengths of various players in the farm enterprise.



That's the essence of the game plan adopted by Laxdal and his partners, whose father's initially joined forces as Lakeside Machinery Co-op in 1971. In addition to the five of them working together, they've recently brought in two new members who are the sons of two partners. Third generation succession planning is a critical component of their long-term planning and efforts are made to link the various skill sets of the seven partners with new business opportunities.

In addition, Lakeside has also teamed up with several other farm-owned special crop processing firms, across the prairies, involved in the export market. Each of these alliances is a story in itself, as they are specific moves taken to position Lakeside into specialty organic, spice and pulse markets across the globe.

# C Report *Refining Agriculture*

But behind all of those partnership and alliance efforts is a very simple thought: There's not much money in just growing bulk commodities and hauling the product to the local elevator.

"In commodity agriculture, the margins of the profits are usually very low," says Laxdal. "But when you can specialize and work in groups, in order to give yourself production and market advantages, then there can be big differences in profitability.

The Lakeside business fits that philosophy. The seven farm families work together on a pedigreed seed business that serves the Prairie market. As well, they own a cleaning, packaging and shipping business that markets specialty products by intermodal containers to specific export customers in 21 countries around the world.

"It is extra work and sometimes we gain only a few cents a pound but it's still worthwhile because, on average, we do get prices substantially higher than bulk commodity prices."

This is where the second category of the best practices summary comes in, which is Higher Gain. This category includes things such as diversification, value-added processing, strategic niche marketing and export development.

Since 1971, the Lakeside partners have tested and tried new ideas almost every year. Over the years they have identified premium export markets for brown flax, specialty spices such as mustard, coriander and caraway seed and high quality lentil and peas for the food market.

"They're all successful, but only up to a point", say Laxdal. The partners are constantly trying new things but always take a low-risk approach.

"To know the minds of consumers and what they will want is almost impossible," says Laxdal. "So we like to start small and feel the market out. For example, the export market opened

in 1989 with an opportunity to market a small amount of bagged flax to France. The customer liked the product, which resulted in more sales and referrals to other customers in other countries.

"By starting small and focusing on follow-up to the sale," says Laxdal, "we are able to better understand exactly what each customer wants. We focus on supplying to smaller customers because we can service their specific needs much better than the larger exporters. And we get an additional premium for this individualized service."

"There is a huge unmet demand for this type of service from Canadian farmers", says Scholz. "Leading farmers are only touching the surface of the global demand for identity preserved, high quality Canadian food products. With today's global communications systems, it is now much easier to link directly with individual buyers around the world."

Of course, strong sales don't equal a strong profit, which is what the third category of the best practices study is Cost Management. This is summarized as a constant effort to drive out inefficiency and lower per-unit costs. And the critical first step here is knowing your costs, not approximately, but the exact costs per acre or per unit.

When you work together, you can obtain significant cost efficiencies. When the farm is close to the break-even point, every bit counts. So, if you're a little bit above the line and you have volume, you're doing pretty well. But, if you're below the line, you're always in bad shape, volume or not.

It's very important to have good record keeping," says Laxdal. "It's hard to do it sometimes but you have to. So for every little project, we put the costs for wages, equipment and other expenses. So when we're working on the farm, we know exactly when we're

working for customers in Asian, Europe, North Africa or in South America.

So is Laxdal and his partners a good model for other farmers? "It's so different for every area and every farm," he notes.

Scholz agrees, but only up to a point. When you study leading farmers, the same elements come up over and over again, he says.

In fact, he says, most farmers will find they're already doing many of the 16 best practices listed in the report.

"Any farm operation might be doing reasonably well in four or five of them," says Scholz. "But maybe there are two or three others that they can grab onto and say, 'OK, here are some areas that we really haven't thought much about and when I look at the case studies, I can see they work'."

"That's why we broke it down into 16 recommended practices – to make it easier for people to identify areas where they may be weak."

And even one farm can go a long way, says Laxdal, who's obviously a fan of best practice #7 – Relationship Building.

"In our case, the biggest innovation in our farm operation is the co-operation among the partners," he says. "I know that's not the traditional mindset. **In the past, every farmer wanted to be independent, but if you can co-operate, it opens a whole bunch of opportunities.**"

## **Additional Resources:**

The AIC paper Redefining Agriculture draws heavily on the best practices work done by Scholz and others. That report can be found in the Publications section of [www.agrivation.ca](http://www.agrivation.ca). More information on Lakeside Global Grains can be found at [www.lakesideglobal.ca](http://www.lakesideglobal.ca).

**Photo from** <http://www.lakesideglobal.ca/producers.html> ●



## Highlights of 2006 Ag Census - continued

In Saskatchewan and Alberta, conventional tillage is should now be considered “unconventional.” It was the least common tillage system in these two provinces. It was particularly low in Saskatchewan with only 18% seeded using conventional tillage. Conventional tillage was the most common seeding system in all other provinces.

These trends are not unique to the Prairies. There is a global trend to no-till agriculture. Some parts of South America and Australia have adoption rates over 80%.

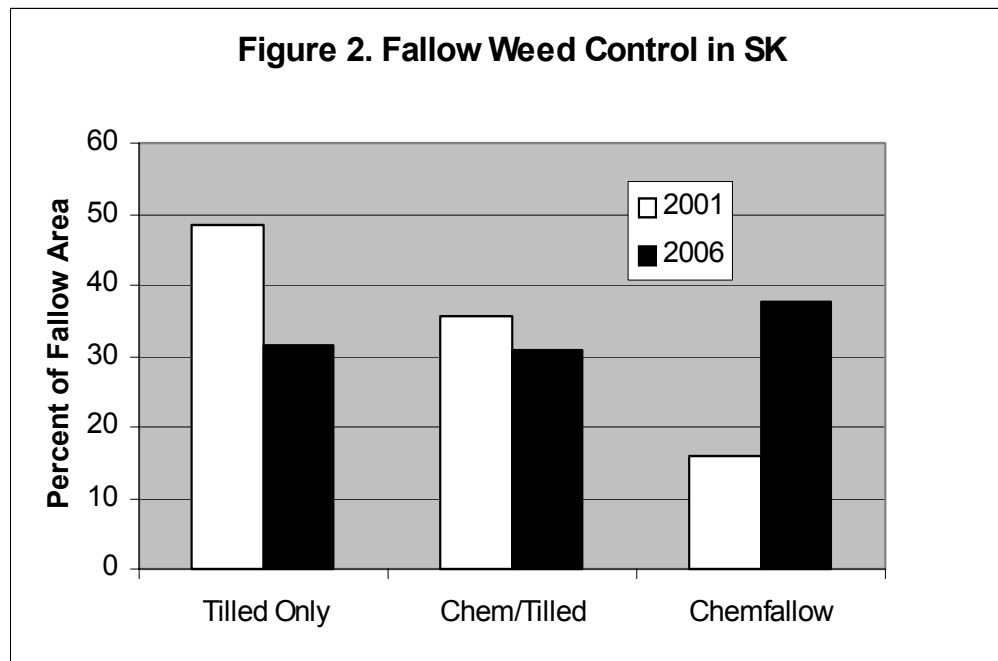
### SUMMERFALLOW

Summerfallow continues its long-term decline.

Summerfallow has declined steadily since the early 70's.

However, the trend accelerated around 1990 and has been decreasing in a straight line ever since. This trend will likely continue for the foreseeable future (no matter what people on coffee-row say).

However, in Saskatchewan, there was a major shift in how summerfallow in managed between 2001 and 2006. Chemfallow has moved from the least common fallow management practice in 2001 (16%) to the most common fallow management practice in 2006 (38%) (Figure 2). My



explanation is that producers efforts to minimize erosion in the drought years in the early 2000's started this trend with lower glyphosate prices and higher fuel prices as contributing factors.

### MISCELLANEOUS STATISTICS

There has been some movement to convert cropland to forage production. There was an increase of approximately 1.4 Million acres of land in pasture since 2001. In addition, there was increase of 1.4

Million acres of land in various hay crops. Taking the two numbers combined, around 5% of cultivated land in Saskatchewan was converted to perennial cover.

Organic farm numbers are continuing to increase. There are 1181 certified organic farms in 2006 as compared to 773 in 2001. There were an additional 184 farms in transition to organic. The farm size data for organic production has not been released yet so it is not clear how much land this affects. ●

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