



Prairie Steward

Farming For Your Future Environment



The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Summer Issue No. 39, 2003

SSCA Wins Award

By John Clair
SSCA President

It is an honor to serve as the president of SSCA. I was elected at the close of our annual meeting during our conference in February. I farm at Radisson with my wife and 2 adult children. We have been involved in minimum and zero-till since the early 80's, producing wheat, peas,

canola, and barley. We took over this farm from my parents and we are now in transition to the next generation. The successful transition of a farm today is a lot more involved than it was in 1975 when we took over from my parents!

I would like to update you with SSCA happenings. First, we held a very successful conference judging from the 900+ people that

attended. If you were one of those people, I'm sure you would agree that this was due in large part to the hard work of our staff recruiting excellent speakers on timely topics. The mix of speakers provided both practical and scientific information that was useful in the day to day operation of our farms.

and qualified agrologists. I think all board members agree that this was an excellent choice and we know our staff deserves the recognition.

I was pleased to be able to attend and take part in Seeding Trends 2003 at the Seager Wheeler Farm near Rosthern. This year was a tribute to Larry Janzen, a

long time promoter of both Seeding Trends and the Seager Wheeler Farm, who passed away this winter. Thanks to the organizers, the day offered both seminars and field demonstrations covering forages, herbs and spices, and fruits, as well as agronomics of traditional field crops. Judging by the comments from a number of producers and the size of the crowd, the day was well received.

Most of my SSCA time is currently being spent around the Soil Carbon issue. A number of us have been speaking to farm groups through out the winter, discussing Canada's Ag Sink policy. Because of the respect the industry has for the work of John Bennett, we find ourselves invited to conferences in other provinces and states as resource people on this issue. Our focus this June is changing to the Ottawa scene. We have a number of meetings set up with Federal Government



SSCA being presented with the SIA AGEX Award. Left to right: SIA President, Bernie Sonntag; SSCA Executive Manager, Blair McClinton; and SSCA President, John Clair

On the 10th of April, SSCA was honored by the Saskatchewan Institute of Agrologists. Our Executive Manager and I received the AGEX Award recognizing our staff for providing outstanding service to farmers. This award recognizes the efforts of both present and past staff. The official charter recognized SSCA for its commitment to providing outstanding service to soil conservation by providing dedicated

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Canada's Greencover Program Provides Assistance for Seeding Native Species

By **Juanita Polegi, PAg**
Assistant Manager

The Greencover Program is a 5 year, \$110 million Government of Canada initiative to help producers improve grassland management practises, protect water quality, reduce green house gas emissions, and enhance biodiversity and wildlife habitat. The program has 4 components including Land Conversion. The Land Conversion component will provide advice and financial incentives to convert environmentally sensitive land to perennial cover, pending approval of an application. Only registered land owners are eligible for assistance from the program. In 2003, the application deadline is **August 1**.

Once the application has been approved, Greencover will provide two one-time payments. The amount of the first payment depends on the type of permanent cover to be seeded. Tame forages and trees will receive \$20 per acre while native forages will receive a \$75 per acre payment for seeding or planting native species. Once the perennial cover has established, the area will be inspected and the producer will sign a 10 year land use agree-

ment. If all is well, a final payment of \$25 per acre will be paid on all perennial cover plantings.

With the significant dollars allocated for the seeding of native forage species, it's expected producers will be very interested in looking at the possibility of seeding some of these species. Brant Kirychuk is with PFRA in Regina. He said that the most common native grasses include Western Wheat grass (WWG), Northern Wheat Grass (NWG), Green Needle Grass (GNG), June Grass (JG), and Rough Fescue (RF). "These are the most important and dominant species in mixed grass prairie", he said. "A native forage stand fits well into a complimentary grazing system."

Another native species that could be included is winter fat. "Winter fat is a highly desirable forage as it is very palatable to livestock and is highly nutritious", Brant said. He added that winter fat is an important component of mixed prairie stands. Unfortunately, little winter fat seed is available.

PFRA has not designated a specific mix of native species for a region or province, however, once the Greencover Program receives an inquiry, a designated specialist

is to be consulted about designing a mixture of native species suitable for the area. In Saskatchewan, these specialists are the SAFRR Rangeland Agrologists and Forage Specialists



as well as selected staff from AAFC and PFRA. The staff manning the 1-866 number will provide the farmer with the name of the Specialist closest to him/her.

The Greencover Program is designed to encourage the conversion of land not suitable for annual crop production into perennial cover. A minimum of 40 acres must be seeded but up to 4 quarters (640 acres) may be under establishment at a time. If a farmer has been considering seeding some perennial forages or planting some trees, this program is worth looking into. For more information on the Greencover Program, check the web site at www.agr.gc.ca/greencover-verdir or contact the toll free number at **1-866-844-5620**.

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officials to advance our views on Soil Carbon Credits and their ownership. We feel Agriculture has the potential to play a large role in fulfilling Canada's Koyoto commitment. Farmers need to be recognized for the job they do in cleaning up the environment. We have a strong case and will not be silent on the issue!

In closing, I would like to remind you how lucky we are in this country. We may like or dislike those in power, we may think the world doesn't pay us enough for our products, but when I leave my house in the morning, I am pretty sure that no one is going to take a shot at me and I know I will have enough to eat for myself and my family. I would like to wish everyone a safe and prosperous harvest.

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Tim Nerbas, Lloydminster (306) 825-6476
Garry Mayerle, Tisdale (306) 878-8808
Rich Szwydtky, Saskatoon (306) 964-1120

HEAD OFFICE

Return Mail to:
Box 1360, Indian Head, SK S0G 2K0
(306) 695-4233 Fax: (306) 695-4236
Blair McClinton, Executive Manager
Juanita Polegi, Assistant Manager
Marilyn Martens, Office Manager
Direct Seeding Hotline 1-800-213-4287
e-mail: info@ssca.usask.ca

<http://ssca.usask.ca>

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The Prairie Steward is published three times a year by the Saskatchewan Soil Conservation Association with support from:

Monsanto

Executive Manager's Report - Soil and Nutrient Management Demonstrations

By Blair McClinton, PAg
SSCA Executive Manager

In the last Prairie Steward, I mentioned that SSCA would be operating the soil and nutrient components of the "Greenhouse Gas Mitigation Program for Canadian Agriculture" in Saskatchewan. Under this program, 32 demonstration sites were established throughout Saskatchewan including the eight Agri-ARM (Spoke) sites.

The primary focus of these demonstrations is to increase the adoption of low disturbance direct seeding. Under Saskatchewan conditions, direct seeding has been shown to both sequester carbon and lower nitrous oxide (N₂O) emissions. There is potential to make even further headway with N₂O emissions by optimizing nitrogen fertilizer management. To show the potential of some of these management strategies, SSCA has arranged demonstrations of variable rate fertilizer applications, split fertilizer

applications, and two new products: Agrotain-treated urea and polymer-coated urea.

Agrotain is a urease-inhibiting fertilizer treatment that slows the conversion of urea (46-0-0) to ammonium. This product is mainly used to increase the amount of seed-placed nitrogen that can safely be applied (by up to 50%). Polymer-coated urea is an experimental slow-release nitrogen product developed by Agrium. Urea granules are coated with a polymer that slows the speed at which the urea granules are dissolved. In theory, this should allow closer timing of nutrient availability to plant requirements. This product will also be very safe for seed-placement. However, polymer-coated urea is not yet registered for use in Canada.

Over the years there has been a significant amount of fertility research showing the benefits of fertilizing forage stands to increase both production and stand longevity. With increased forage production in Saskatchewan, we identified a need

to promote fertility management as a forage maintenance strategy. To address this, several fertility demonstrations have been established on forage stands around the province.

SSCA has established other demonstrations that show other ways to optimize direct seeding system management. A few of these are using crop competition to reduce in-crop herbicide use and optimizing weed control with the Roundup preseed treatment. As well, SSCA continues to work with the Seager Wheeler Farm to organize the Seeding Trends Field Day.

I hope you have an opportunity to check some out demo sites. Contact your local SSCA agrologist for information on sites in your area. ●



Crop Insurance Changes its Policy

By Garry Mayerle, PAg
Soil Conservation Agrologist

At SSCA's request, Saskatchewan Crop Insurance Corporation (SCIC) has changed its policy regarding insuring crops seeded into desiccated forage stands. Previously SCIC would provide establishment and yield loss only if the forage crop was desiccated prior to July 11th. SCIC will now insure crops desiccated after July 11th, provided the desiccation effectively kills the forage.

The old policy with a July 11th cutoff date for terminating the forage stand seemed to be based on the acceptable date for making summerfallow and receiving summerfallow coverage. Under the new policy, establishment benefit is available if the forage stand is terminated adequately by fall. If the crop is adequately established, then stubble coverage will apply.

The whole issue was brought to our attention when one of our members complained that SCIC's policies about

seeding into desiccated forage stands did not promote good soil conservation practices. One of the difficulties, of course, is putting together a policy that will apply across a province that covers so many different soil climatic zones.

In the northeast, there's a lot of alfalfa seed production. In fact, some producers establish alfalfa fields to be cut by the dehydrating industry for 3 to 4 years and then leave it in commercial seed production for another couple of years. The only time for termination of seed stands is the following spring or during a fallow year. A number of producers have had successful spring termination of these alfalfa stands and produced an adequate annual crop when direct seeding into these fields a week or so after termination. The biggest factor affecting a reasonably successful yield is moisture throughout the growing season. If sufficient moisture is received in a timely fashion, then average or even above average yields can be achieved. In dry years, the forage can be adequately terminated but

annual crop yields will be very poor. Because the forage must regrow enough to kill it with herbicide, sufficient spring moisture and growing degree days are required before it is too late to seed the annual crop. If a spring is dry, there will not be enough moisture to get the annual crop properly established.

Crop Insurance's policy on crops seeded into spring desiccated forage stands is that they will not provide establishment benefits but if the crop does establish adequately they will provide stubble yield coverage. Although our original complaint was about this very situation, the SSCA Board felt that Crop Insurance should not be bearing that risk, particularly looking at it from a provincial perspective.

Soil is so much better protected when direct seeding into terminated forage stands, especially on land prone to soil erosion. SSCA encourages all producers growing forages on annually cropped land to develop a system of terminating forage stands with very minimal or no cultivation. ●

Summary of Research on Forage Termination

By Garry Mayerle, PAg
Soil Conservation Agrologist

The projects being cited were carried out in the Moist Black and Gray soil climatic zones of Saskatchewan and Manitoba.

Dr. Martin Entz of the University of Manitoba has done a lot of research on recropping forage stands without tillage. In an article written for producers encompassing 6 years of research mostly at Carmen and Minnedosa, he lists some of his important conclusions. He found that fall spraying usually in early Sept. produced higher yields than termination in spring. Although herbicide application in the spring worked, it is important to have about 8 inches of growth before spraying and that can make seeding 2 or 3

weeks later. Forages which have been sprayed in the fall are often ready to seed as early as or even earlier than annual crop land because the fields are somewhat drier. He lists rates and herbicide mixtures that work but emphasizes that consideration must be given to weeds present in the stand (Entz, 97).

He and Bullied also found that terminating alfalfa stands with herbicides compared to traditional tillage termination resulted in more efficiently recharging the soil water profile. Soil moisture was recharged

faster and to a greater degree depending on the time of herbicide termination. Fields terminated after the first hay cut actually appeared to have deep water percolation whereas those fields which were terminated after the second cut had as much soil moisture available for spring crop growth but more of it came from over winter recharge. In fields with herbicide termination in the spring, there was soil moisture available for crop growth. They conclude that herbicide termination after the second hay cut was better than tillage termination after the first cut (Bullied & Entz, 99).

Entz was involved in another project with trials at Portage la Prairie and Glenlea.

Conclusions from that project were that there are 3 important management steps to making herbicide termination of alfalfa successful. 1) Termination. No-till termination and seeding help to reduce loss of soil moisture by drying as compared to termination with tillage. They found that termination with Roundup at 2 L/ac produced yields as high as or higher than termination with tillage unless there were rains after seeding. 2) Crop competition. When comparing barley or wheat seeded into the forage stand they found no difference in crop competitiveness. 3) Using in-crop herbicide to reduce forage that is still growing. They came up with a measurement of less than 2% of the soil surface containing alfalfa crown roots after the first

grain harvest as the measurement for adequate termination. To reach this level they suggest that the crop seeded into the forage sod needs to be competitive and tolerant to an effective in-crop treatment to reduce alfalfa escapes (Bullied, Entz, Smith, 99).

Another project was carried out by researchers from the Melfort Research Station. They were comparing alfalfa breaking methods and recropping. They evaluated 2 herbicide combinations with and without tillage and tillage alone. The times

of treatment were after first and second cut and after seed harvest. They ran the study at 3 locations but only harvested at 2 due to establishment and drought loss at the third. In unpublished results, Johnston says that most importantly only a cereal should be grown the year after termination. His second point is that in weedy stands with lots of dandelion, terminate with herbicide first followed by one fall tillage to cut off dandelions. He suggests that this would require spring inspection (Johnston & Loepky unpublished results).

There have been several projects completed in NE Sask. evaluating

different herbicide combinations to take out alfalfa and dandelions. In the early 90's, Roy Button evaluated a number of different herbicide combinations. The best of them did not include more than 1

L/ac of Roundup. He concluded that some of these herbicide mixtures could be used to eliminate 2 or 3 tillage operations when terminating an alfalfa stand (Button, 96). From this work, Entz increased the amount of Roundup to 2 L/ac in the projects mentioned above.

Another project was carried out in NE Sask by Cowell in 2000 & 01 (reported by Mayerle, 01). Results of treatments applied Sept 28, and rated for control of alfalfa and dandelions the following Aug. with no other treatment or crop competition are: 1 L/ac Roundup – dandelions 45% & alfalfa 65% control, 2 L/ac Roundup – dandelions 55% & alfalfa 75% control, and 1 L/ac Roundup mixed with 6 oz/ac 2,4-D – dandelions 55% & alfalfa 65% control (Cowell unpublished).

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Dr. Martin Entz speaking at a past SSCA Conference

Seeding Trends 2003: Direct Seeding – “What should you expect”

By Rich Szwydky, PAg
Soil Conservation Agrologist

On May 28th the historical Seager Wheeler farm east of Rosthern played host to a very successful direct seeding field day. Approximately 425 people gathered for Seeding Trends 2003, the event now known as Saskatchewan's only direct seeding field day. A large diverse crowd came from all four corners of the province to take in the ninth annual event. This year's Seeding Trends was dedicated to the memory of Larry Janzen, who passed away in early spring. Larry was the driving force behind the Seager Wheeler farm, and one of the initial organizers of past Seeding Trends events. If it were not for Larry's involvement, both the Seager Wheeler farm and the Seeding Trends field days would not be in existence.

The theme of this year's agenda was Direct Seeding – “What should you expect”. The topics that were addressed included fertility, rotations, weed control, as well as opener and equipment issues.

The day began with opening remarks from the SSCA chairman, followed by greetings from dignitaries. A letter was read from the Honourable Clay Serby, Deputy Premier and Minister of Agriculture, Food, and Rural Revitalization, who expressed his regrets at not being able to attend. Other dignitaries included Ben Heppner, MLA of the Rosthern constituency and Henry L. Funk, Reeve of the Rosthern R.M.

The next agenda item was a panel forum that featured three producers experienced in direct seeding. John Clair of Radisson, Laurie Regier of Laird, and Lyle Stucky of Osler described the changes that occurred on their respective farms with the initiation of direct seeding. The panel also included Dr. Adrian Johnston of the Potash and

Phosphate Institute and Dr. Eric Johnson with Agriculture and Agri-Food Canada, who shared some of their research on fertility and rotations.

Each producer on the panel described the benefits resulting from the switch to direct seeding. Some benefits included reduced soil degradation losses, increases in soil organic matter, improvements in soil tilth, and lower fuel, labour and equipment costs. Producers also identified some resulting challenges, including increased straw and residue management and proper crop rotation



Panelists discussing various topics and questions from the audience

maintenance. Each panel member stressed that proper crop rotations are needed to keep the weed spectrum in check and help alleviate some issues we currently face with certain herbicide residues.

Three concurrent sessions followed the panel discussion. Participants could take in field demonstrations on either prairie fruit production or forage management, or they could attend presentations by Johnston and Johnson on fertility best management practices and residual herbicide management.

This year's noon hour agenda included a tribute to the memory of Larry Janzen, followed by a moment of silence. Al Scholz concluded the program with his keynote speech on building upon Seager Wheeler's dream. Al made

mention of Seager Wheeler's vision at the turn of the century, when he first settled in the Rosthern area. Al proceeded to compare Larry Janzen's vision of the restored Seager Wheeler farm to that of Dr. Seager Wheeler.



The afternoon agenda began with an SSCA demonstration on the do's and don'ts of winter wheat production. This demonstration sparked a lot of interest, proving to many that the winter wheat acreage could possibly see an increase over the next couple of years. The demonstration addressed the topics of seeding depth, weed control issues, nitrogen fertility methods, seeding rates, variety selection, and the importance of phosphate fertility in winter wheat production.

The next demonstration profiled six high clearance sprayers. Brian Caldwell from Agriculture and Agri-Food Canada began the demonstration with a discussion on nozzle technology. Following Brian's presentation, representatives from Rogator, Apache, Brandt, CNH, Case IH and Eagle spoke about their respective machines, and proceeded to give an in-field demonstration.

Next on the agenda were the post emergent fertility application trials. This is the second year in a row the demonstration was showcased at Seeding Trends. 28-0-0 (UAN) was applied to Linola one week after it had emerged. The three machines that showcased the procedure included a liquid dribble bar,

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Direct Seeding with Sweeps?

By Dave Larsen
Soil Conservation Agriologist

Visitors to the South East Research Farm (SERF) at Redvers this spring may have wondered if high disturbance seeding was getting a second look. Mounted on a plot drill capable of low disturbance seeding were 14-inch sweeps on 10-inch row spacings creating complete disturbance. It was a flash back to the past that I wasn't ready to relive. The benefits of low disturbance seeding were well known to the staff and board at the Agri-Arm site, so why were they modifying a perfectly good drill? After a concerned inquiry about the direction and message the farm was conveying, I was reassured by manager Harvey Anderson the farm was still committed to low disturbance seeding. The high disturbance system is for an extensive study on flax for fibre production.

Flax Nutrient Uptake (24 bu/A)

	N	P ₂ O ₅	K ₂ O	S	Total
Total - lbs/ac	62 - 76	18 - 22	39 - 48	12 - 15	
- \$\$/ac	\$26 - 32	\$4.70 - 5.70	\$5.80 - 7.20	\$2.60 - 3.30	\$39.10 - 48.20
Seed Content - lbs/ac	46 - 56	14 - 17	13 - 16	5 - 6	
- \$\$/ac	\$19 - 24	\$3.60 - 4.40	\$2 - 2.40	\$1.10 - 1.30	\$25.70 - 32.10

Source - Potash and Phosphate Institute, 2001
Based on \$0.42N, \$0.26 P₂O₅, \$0.15 K₂O, \$0.22 S

The Agri-Arm sites at Redvers, Indian Head and Canora are conducting, in partnership with PAMI, AAFC and Biolin Research Inc., a series of agronomic studies to determine the production practices necessary for increasing flax fiber quality. Flax test sites are also established at Churchbridge, Preeceville, and 2 sites at Tisdale.

Flax straw is traditionally treated either as a liability or a low value commodity. As anyone who has grown flax knows, flax straw is a difficult thing to manage. Some producers have had success with good straw choppers, evenly spreading the straw, leaving the stubble tall and applying Roundup to the mature crop to facilitate fiber breakdown. However, straw management techniques usually still involve baling

or burning. Both of these techniques result in the export of large quantities of nutrients and organic material. The nutrients alone have a significant value.

Based on the values in the table, a 24 bushel crop would use between \$39.10 and \$48.20 per acre of nutrients for growth. Between \$25.70 and \$32.10 of the nutrients would be sold in the seed. That leaves between \$13.40 and \$16.10 per acre of nutrients left as plant residue. If you bale or burn the straw, this value of nutrients is not returned to the field. This is merely the nutrient value lost, and does not include the intrinsic value of increased crop residue.

The nutrient value of the straw is the minimum value you must receive for removing the straw or it is a financial liability. Currently, Sweitzer-Mauduit Inc (SMI) is buying flax straw in eastern Saskatchewan at \$5 per tonne. This works out to be around \$3.5 per acre for an average stand. At this price, the

value of the nutrients exported isn't covered. However, since producers are getting some value out of the straw and saving themselves the expense and time to remove the straw, it may be an attractive offer.

The main end product of the fibres obtained from SMI is cigarette paper. But flax straw has many uses other than an ingredient in cigarette paper. The straw is broken down into 2 marketable components: fibre and shives. Shives are the non-fibre component that can be used for plant mulches and horse bedding. Fibres have many uses including textiles, cottonizing, filters, plastic composites and paper to name a few. So, why is our flax straw seen as a liability or a low value commodity? Quite simply, flax is primarily grown as

a seed crop with little consideration for the flax straw.

The research at the Agri-Arm sites will help determine the methods of growing and handling flax to take advantage of the flax fibre market. This may mean growing flax exclusively for the fibre in order to capture the high-end textile industry, or it may mean growing seed varieties that have long fibres and handling it in a manner to retain the fibre quality.

The research conducted at Redvers is looking at both oilseed varieties and fibre varieties. Fibre varieties from Europe are planted alongside Canadian varieties to determine the seed and fibre yield, and quality of the fibres. While variety research is important, there is also a lot of agronomic research that has to be conducted to determine the optimal growing and handling methods. Seeding and harvesting techniques will greatly impact fibre yield and quality.

Oilseed flax is used for both the seed and the fibre. The goal of the research is to try to achieve more fibre of better quality while maintaining a good seed yield. Fibre flax plants are taller and grown strictly for the fibre. The seed is not harvested. Irregardless of the flax type, the best quality fibre comes from plants that have a slightly smaller and consistent stem diameter. A high (but not too high) plant density is the key to achieving this. Other desirable characteristics include tall stems and plants that are a little bit N stressed. A desirable plant density for fibre plants is 2000 viable seeds per square meter.

To achieve a high plant population and create the thick and even stand, a high seed bed utilization (SBU) is needed, preferably close to 100%. Achieving this high seed bed utilization while minimizing disturbance and



Those Addictions

By Tim Nerbas, PAg
Soil Conservation Agrologist

It is well known among reformed addicts that recovery requires 12 little things - actually 12 big things known as the 12 Step Program. Upon these, many addicts find their road out of some very bad habits.

There are producers out there with some pretty bad habits, too. One in particular requires immediate attention, that of cultivation.

What is it about cultivation that qualifies it for "bad habit" status? You can look to Mother Nature for the simplest answer. You won't find naturally occurring tillage anywhere. Except maybe when a tree falls down, and in those instances, nature is quick to establish new growth on those disturbances.

Tillage promotes soil degradation. However, low or non-disturbance systems not only minimize soil erosion, but also enhance both the soil building properties and the overall tilth of the land. Most producers know and appreciate the inherent fertility of

newly broken land. Using direct seeding techniques, soil quality can once again be rebuilt. Research has shown that after 20+ years of direct seeding, soil quality can be significantly enhanced.

Still not convinced standing stubble is great? Don't forget that these systems also promote improved water infiltration, reduced wind speed, and better protection for young seedlings.

For many producers, the proven benefits of low- and no-till are ignored simply because of ingrained routines. "My dad always did it this way, I've always done it this way, and I'm not changing, thank you very much." But remember: habits did not become habitual until they were practiced over and over again. Bad habits can be replaced with good ones with some simple retraining.

So if you have this addiction, what can you do about it?

The SSCA has a program, too, and it only has five steps - actually five pillars. Producers can use these pillars to build the strong foundation for escaping out of the tillage "trap":

1. Residue Management

2. Rotations
3. Seeding Principles
4. Weed Control
5. Fertility Principles

This probably sounds like too much to do all at once. "I don't have the right equipment." "I don't want to spray all those extra chemicals." But like the 12 Step Programs, SSCA's five pillars need to be understood one at a time.

Start at the beginning, step #1, with residue management.

Residue Management is the handling of crop residues so that they complement the seeding and crop production process. Therefore, the key to successful direct seeding is proper residue management taking place at harvest.

Here is a quick list of factors that affect residue management:

1. Crop Type

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DIRECT SEEDING WITH SWEEPS ... CONTINUED

maintaining trash clearance is a challenge. Gordon Hultgreen of PAMI stated that achieving a higher disturbance system with accurate seed placement and high seed bed utilization presents some unique challenges compared to low disturbance seeding systems. The increased use of low disturbance direct seeding has previously eliminated the need to research high disturbance seeding systems.

Narrow row spacing would increase the ease of maximizing seedbed utilization and increase the accuracy of the seed placement, but then trash clearance becomes an issue (as does increased machinery costs and increased draft). To maintain a one-pass system without getting specialized machinery, the Redvers group installed sweeps on their drill and added a Froc opener to distribute the seed over the width of the sweep. This allowed them to achieve about 80% SBU on the 10 inch centers. They

harrowed and packed the plots to replicate packing with a harrow packer drawbar.

Proper packing is another challenge as packer wheels are too narrow to cover the entire seedbed. The sweeps will be compared to the Stealth opener. The 2 seeding systems were seeded at 2 different dates: early and late May. Three different seeding rates of 40, 80 and 120 kg/ha were also used.

Harvey said that the stubble type had an impact on the effectiveness of the sweep seeding system. Canola stubble provided easier conditions for seeding and better emergence compared to cereal stubble.

A few different harvesting methods will also be compared. Like seeding, harvest equipment could be specialized, but conventional equipment should work with a few modifications. The fibre quality needs to be maintained. Running the straw through a combine does not do this. To harvest the seed, a stripper

header or straight cutting the crop as high as possible are ways to harvest the seed while still maintaining fibre quality. The research will look at some different harvesting techniques as well as some different straw management techniques.

The straw needs to ret (rot) before it can be processed. This is best achieved if it is uniformly laid on the ground and allowed some time to breakdown before it is raked and baled. Hence the reason for the complete ground cover when seeding. The researchers will look at different ways of facilitating retting and gathering.

While growing flax straw for processing is not a new or even radical development, it does make us take a step back and think. As Alvin Ulrich of Biolin Research said, "We need to think of agriculture as more than food production". If this involves knocking on sweeps when flax comes up in the rotation, then maybe that is a concession we, as direct seeders, have to make. ●

Trees as a Diversification Option

By Travis Goebel, PAg
Soil Conservation Agrologist

We have heard the buzz words “value added” and “diversification” quite often in this province over the past years. An ongoing and fairly new venture that involves value added and diversification is agroforestry and afforestation. Agroforestry combines agriculture and tree production with other activities such as inter-cropping, fruit production and others. Afforestation is the dense planting of trees (plantation farming) on land that was not previously treed. Saskatchewan’s forest sector is expanding and this will create an expanded market for wood fibre. The forest industry is looking toward private lands that contain aspen and poplar stands to deal with the shortage of wood. This area is referred to as the “forest fringe” and is south of the Crown Forest and north of the #16 highway. When these resources are expended, industry may focus on plantations to fulfill supply.

The expansion of Weyerhaeuser’s pulp and paper, the development of saw mills, and new oriented strand board (OSB) plants may cause a limited supply and increase demand for wood fibre. Furthermore, the industry is not likely to expand much further unless the availability of wood fibre increases.

The Saskatchewan Forest Centre (SFC) formed an agroforestry unit to help expand this industry and extend knowledge of forestry to areas south of the boreal forest to agricultural producers across the province. The agroforestry unit aims to broaden the economic choices for producers, and increase wood supply to demonstrate that trees are a viable cropping option in some management systems. This unit is the lead provincial agency for agroforestry activities and has an objective to provide technical information and education to landowners and

develop seminars and work shops to extend their information.

There are many obstacles and hurdles to overcome as far as tree farming is concerned. It is estimated that the cost for establishment of a plantation is in the ball park of \$800-\$1000 per acre in the first 3 – 5 years and approximately \$2500 for a 15 year old stand. This is quite substantial considering the stand will produce no returns for 15 years. Over time, the cost of establishment should decrease from improved technologies for management and better tree cultivars. A strong value added industry is required to make the industry more lucrative and profitable. Tree prices



Two year old hybrid poplar stand, Gerald, SK

are determined by the quality of the trees and their end use. If the trees are going into ethanol production, the returns will be significantly lower than if the trees were being processed into high grade wood used for production of furniture.

One of the main barriers to expansion is the lengthy cropping time with no returns for 15-25 years. The crop is exposed to risk of disease, fire, insects, wind, etc. for a long period of time. Crop insurance programs are still pending and are difficult to finalize due to the newness of the crop. Better technologies associated with production management may decrease risk of the crop and thus make insurance more affordable.

Hybrid poplar species is the most likely choice of tree used in planta-

tions. A hybrid is produced when two different varieties or species are bred. Poplar breeding is focusing on 5 main species: Eastern Cottonwood, Balsam Poplar, Black Cottonwood, Asian Black Cottonwood, and European Black Poplar. Eastern Cottonwood is the most popular species for breeding as it produces the most desirable material. Site location characteristics dictate



exactly what species/cultivar will do best in the given conditions. Hybrid poplars prefer a loam to clay loam soil without a hardpan and a pH in the range of 5.5-7.5, high moisture areas with a water table within 50 centimeters of the surface, nitrogen rich soils, and slopes less than 8 degrees. Growth rate and production are dependent on conditions so the production will decrease as conditions sway from

optimum. Fertility of poplars has not been studied extensively so there is not much literature on fertilizer guidelines for plantations. Hybrid poplar yield is in the range of 25-95 m³ at 15 years of maturity. Plantations are usually planted at 500-700 plants per acre with 8-10 foot row spacing. The return on a crop of poplar can be estimated at \$40 per m³, assuming 50% of the crop will be sold at better-than-pulp quality price. Examples of estimated net returns and expected costs of production of hybrid poplars compared to annual field crops are available from the Saskatchewan Forest Center.

It is not expected that plantations will take off over night due to the risk

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A Tribute To Larry Janzen

Presented by David Hryhor, Extension Agrolgist, SAFRR and Former Board Member of the Seager Wheeler Farm at Seeding Trends 2003

Ladies and Gentlemen, honoured guests, friends, and supporters of Seeding Trends 2003. I have been asked to say a few words about our friend, colleague and former chairman of the Seager Wheeler Historical Farm Society, Larry Janzen. This is indeed an honour.

Larry Janzen died on April 5th of 2003. He was only 55 years of age. Too young. He did manage, however, to squeeze a lot of living into those 55 years – and he did achieve a lot of the goals he set for himself. His was a life well lived – to the fullest.

He was devoted to family, to his community and to agriculture. Larry loved the challenges associated with farming. He was an early adaptor of new technology and was very knowledgeable on all aspects of agriculture. He shared this knowledge. Larry was very well spoken and participated as a producer panel member in many conferences and Field Days. He was a member of many agriculture organizations.

Larry was born and raised at Rosthern on the family farm. He attended Rosthern Junior College and the University of Saskatchewan where he trained as a teacher. Larry taught at Thom Collegiate in Regina and at Evan Hardy Collegiate in Saskatoon – working his way back to Rosthern where he wanted to farm.

In 1981, Larry became a full-time seed grower and moved his wife, Doreen and their two children, Wendy and Paul, to the farm at Rosthern. Larry and Doreen built a seed cleaning plant and became a full-service pedigree seed operation under the name Spruce Grove Seeds Ltd. in 1985. Doreen was an integral part of the operation.

In January of 2003, Larry was awarded the Saskatchewan Pulse Growers Association Pulse Promoter of the Year Award. In July of this year,

Larry will receive post humously, the Robertson Associate Award from the Canadian Seed Growers Association. This is the highest honour the CSGA bestows upon a member.

Larry was not all work and no play. Larry was very involved in the community and his sports. He coached wrestling and football while teaching high school and he also coached minor



Dave Hryhor presenting a plaque from Seager Wheeler Farm and Seeding Trends to George Janzen in memory of his brother Larry

hockey in Saskatoon and Rosthern. He coached the Rosthern Wheat Kings for three seasons and guided the team to the provincial finals.

Community was also very important to Larry. He volunteered his time and equipment to help farm the Rosthern Youth Farm land, the Seager Wheeler Farm land, as well as land for the Canadian Foodgrains Bank. He was also a Sunday school teacher, a church youth leader, Chair of the church council, worship leader and a choir member.

One of the reasons that we are here today at Seeding Trends 2003 at the Seager Wheeler Farm – is that in 1992, Larry was elected chair of the Seager Wheeler Historical Farm Society and served in this capacity until November of 2001. I fully believe that this Farm would not have enjoyed the success that it has without the guidance, enthusiasm and energy of Larry Janzen and his wife, Doreen.

My co-partner Bob Rugg and I first toured the Seager Wheeler Farm with Larry Janzen in the summer of 1993. Larry provided us with the vision for the Farm. The yard site was vacant and not occupied. The buildings were in generally poor condition. It was not a pretty site.

There have been many struggles associated with the development of the Farm. One cannot imagine the number of volunteer hours associated with the restoration. Money or the lack of funding was, and likely continues to be, the biggest challenge. Larry refused to give up when the going got tough and was able to achieve the “big dreams” for the Farm as an Agricultural Education Venue, a National Historic Site to preserve the history of Seager Wheeler and as a tourism site for the Rosthern area.

I had the privilege to work with Larry Janzen as a Board Member of the Farm and as a Seeding Trends Committee Member. Larry and I did not always agree on all things. We were always able to openly discuss all matters. Larry had tremendous energy and determination to see the farm restored. In March of this year, he made plans for the Annual Bean and Pulse Crop Field Day at the Farm.

One of the saddest days of my life was when Larry called me on November 5th, 2001 to advise me that he was diagnosed with cancer and that he and Doreen would be resigning from the Board. In the past year and a half, Larry maintained a very positive outlook and never gave up hope. He spoke openly about trusting God and lived each day to the fullest. He was very optimistic.

Larry’s wife and children are unable to be with us today because they are all gathered in Ontario for the wedding of his daughter, Wendy. However, Larry’s brother George is here and I would ask him to come forward to accept this plaque from the Farm.

Ladies and gentlemen, we will all miss Larry Janzen – but we will always remember him through our association with the Seager Wheeler Farm. May we please observe a moment of silence. ●

Affordable Residue Management Options

By Garry Mayerle PAg and Travis Goebel PAg
Soil Conservation Agrologists

In the northern part of the province, the last few years have shown that a different strategy for residue management is needed when conditions are dry. Instead of reducing residue loads, the tactic has been to keep an insulating blanket of residue on the soil surface to maintain soil moisture for seeding. This has meant conserving residue and spreading it as evenly as possible.

Several producers this winter have mentioned that although heavy harrows still have a fit in their system in the fall, they have found that a medium duty tine harrow with a spring pressure kit has a lot of advantages in the spring. These producers are finding that unless the operator watches very closely, the heavy harrow can breakdown a lot of residue in the spring. With softer ground conditions, dirt often starts to push and soon you have piles that take a lot of effort to undo.

Darrell Fedak crops 1400 acres east of Watson in partnership with his wife, Colleen. They have been direct seeding with a 2 pass low disturbance seeding system for the last 3 years. They use anhydrous ammonia as their primary source of N and knife it in on 12 inch spacing in the fall, if at all possible. They seed with a Bourgault 8810 air seeder with shank mounted packers from Valley Packing Systems. Their opener is a Bourgault Tillage Tools 1 inch Vertical Knife. For managing residue in the spring, Darrell has retrofitted the harrow packer bar he used for packing behind the air seeder. He has taken off the packers and refitted the 4 bar harrows with 16 inch long

straight tines. He has added a harrow pressure spring kit that utilizes 2 coil springs on either side of each lift arm to transfer weight from the bar to the harrow. Flexicoil makes these kits to fit their tine harrow bars and they retail for



Exner straw and chaff spreading kit

just over \$140 per harrow. Darrell pulls his set of harrows at 8 to 10 mph. He says they do pull heavier than tine harrows - about as much as the bar before he removed the packers. For effective residue spread, he adds that



Daryl Fedak refitted John Deere 9600 with Rodono straw chopper rotor

the tines have to be kept at a fairly upright angle.

The Fedaks own a set of Morris Heavy Harrows. The last few years they have only been using them on the fields where peas will be planted the following year. Darrell says he finds that the

anhydrous operation spreads residue sufficiently on the rest of his cropped acres. Before choosing these harrows, Darrell tried out a number of different makes of heavy harrows. He found that he wanted a set that followed the

contour of his rolling land well. One model was designed with a rigid pull at the front and dumped all the straw out in the drainage ditches because it wouldn't follow down into the ditch. His Morris harrows have a solid pull that can rotate up and down at the front. There are 3 adjustments for the angle of the pull at the front and he likes them set to pull down. Another model followed the

contour of the land reasonably well but had so many different settings that it would be hard to send the hired man to run. Yet another seemed to have no way to set it less aggressively and one was difficult to take in and out of transport.

Anyone who has had experience with heavy harrows will emphasize the importance of speed to breakdown residue. It seems the opposite is true as well. If you only want to spread residue and not break it down too much, reduce your speed.

SSCA has always maintained that the most important time to manage residue was at combining. The Fedaks have 2 combines. One of them is an IH 1682 pull type. They have purchased a kit from Exner Farms at Melville that does a good job of spreading straw up to 30 feet and an

adequate job of spreading chaff. The Fedaks made this changeover 3 years ago and had one crop with lots of residue before the last 2 dry years. Darrell says you can't see any rows when you walk across the field after combing and there is no stripping like

you often get behind a rotary combine. This kit adds 3 rubber bats to each of the spreaders. They move chaff with the wind they create. The kit includes a longer shaft to accommodate these wide bats.

Darrell has also retrofitted the chopper on this combine with a Rodono concave with longer stationary blades. This change gives him a much better chop.

The second combine the Fedak's run is a John Deere 9600. The chopper had a standard rotor in it when he purchased it. Darrell replaced this with a Rodono rotor. The blades were made of heavier metal that creates wind for spread but they are also tapered to give a better cut.

A pulley change also speeded up the chopper. The Fedak's swath 30 feet wide and this change over on the John Deere chopper gives better spread about 25 to 27 feet.

There are many different options producers have to equip themselves with acceptable straw spreading. Spreading the chaff and straw at the combine can help reduce the dependence on expensive heavy harrow operations. The Exner system that Darrell utilizes is an example of an inexpensive system that works well in Axial Flow combines especially if the combine has an internal chopper. The Exner kit uses three 6 inch high curved blades on each spreader that replaces the original six 2 inch strait blades. The newer IH axial flow combines have the spreaders dropped below the chaffer drop but older models may need a drop

kit to get the spreaders below the chaffer. Three blades seem to spread the chaff and straw further because more material is being thrown per blade while still not



John Deere 9600 with Rodono straw chopper rotor

piling the straw. Many producers that have adopted a system like this downsize the driven pulley to get more rpm out of the spreader and increase spread distance.

A more expensive but very effective manager of heavy straw is a Redekopp chopper/spreader. It is available to fit almost any combine. It both spreads and chops the straw; attachments can be added to the system to collect the straw, chaff, or both behind the combine for livestock. The Redekopp chopper works excellent but requires a fair bit of horsepower to operate. Some older combines may loose capacity as a result of this addition so this should be considered when making a purchasing decision.

Many farmers, after realizing that they can have acceptable residue manage-

ment using the combine, find it possible to lose the investment of a heavy harrow. A problem that still exists for farmers is the straw that does not run through the

combine. Low lying areas where the crop may be lodged causes problems for some producers. The stubble in these areas is left long and lying flat just waiting to plug the drills in the spring. This type of problem usually involves relatively few acres but can cause major headaches in tough spring conditions.

One option some find efficient is using rotary ditch mowers. These mowers cut close to the ground and mulch the remaining straw very effectively. These mowers are usually 12 feet – 20 feet

wide so they will work well for the patch work in the troubled areas. This is a very good option compared to trying to spread straw with light duty harrows, burning, or cultivation.

As was discussed, there are many residue management options. Some involve post combine activities such as harrowing or mowing. Ideally, residue management should occur at the back of the combine. The cost of combine spreading/chopping systems vary from hundreds to thousands of dollars, and not all of these fit every management system. A main focus for all operators should be trying to do the job at the combine in order to save time and money with other field operations. The goal is to find a residue management system that works in your area's conditions, and fits the farm budget. ●

SEEDING TRENDS 2003 ... CONTINUED FROM PAGE 5

a coulter, and a high clearance sprayer equipped with dribble caps.

The final event of the day was the direct seeding demonstration. Ten units were featured at the demonstration where Linola was seeded into wheat stubble. The drills and openers featured included EZEE-ON, Seed Hawk, Flexi-coil 5000, ConservaPak, TechnoTill packer, Morris Express air drill, Peacock openers, Bourgault 5710 mid row bander, Morris Maxim

II air drill, and Harvest technologies liquid side band opener.

The seeding pass made by each company will be signed for the summer tour season. Individuals interested in a particular opener or drill are welcome to stop by and view the crop through to maturity. Tours will also be arranged for early July. For more information, please contact the Seager Wheeler farm at 232-5959 or myself at 229-0230.

The high attendance rate at Seeding Trends 2003 shows there is still significant interest in the adoption of low disturbance seeding. As a result of this success, organizing for next year's field day has already begun. Seeding Trends is the major fund raising event for the Seager Wheeler Historical Society. We encourage everyone to visit the Seager Wheeler farm throughout the summer and attend Seeding Trends 2004. ●

Economical Farmer Designed Shank Retrofits Air Seeder

By Eric Oliver
Soil Conservation Agrologist

I met Gord and Wayne Freitag at the Crop Production Show last January. They described a shank they had designed and built to replace the C-shank on their 8800 Bourgault airseeder. When they also mentioned that the cost of materials to build their



Freitag's retrofit shanks mounted on Bourgault 8800 airseeder

shank amounted to only \$17.00 per shank, I had to have a look at their design firsthand. It wasn't until late spring that I had a chance to drive out to their farm near Richmond, SK and have a look at their retrofit and see how the crop established using it. The Freitag's farm 25 quarters of sandy loam soil and seeded about 3,100 acres this year, including durum, peas, lentils canary seed and sunflowers. Gord and Wayne like to seed as much as they can, but they are required to have fallow on some of the land they rent, which they generally chem fallow.

As with many farmers who have converted to direct seeding, they started using sweeps on their airseeder. Not happy with the field finish or the seed placement, they switched openers to 3 inch spoons, and then 2.25 inch spoons, but these openers still did not achieve the desired results they were looking for. The Freitags then tried welding a Gen 43 knife tip to the upper part of a knock-on spoon. It performed better, but it still did not give the desired seed placement they were

looking for and the field finish was still pretty rough for the sprayer.

In the spring of 2000, a neighbour of the Freitags suggested that they should visit another farmer nearby and look at the hoe drill he was using to seed directly into stubble. It turned out to be a Versatile Noble hoe drill with straight, vertical shanks. Gord and Wayne liked the vertical shank style

and thought they could design something like that to fit their air seeder. Incredibly, with only 2 weeks until they were about to start seeding, they designed and built the straight shanks to fit onto the original 500 lb. trip system on their Bourgault

8800 airseeder. The air seeder is 52 feet wide with 8 inch row spacing, so that meant at least 78 shanks needed to be built. They built 85 shanks so they would have a few spares. For the opener, they used the Gen 43 tips that attach to the shanks with a roll pin for easy changing. The knife tips in the picture have about 6000 acres on them and will be replaced with new ones for the 2004 season. As with other single shoot systems, the Freitags are limited in how much fertilizer they can place with the seed. On the cereals, they generally place a maximum of about 60 lbs/ac of 34-17-0.

The shanks are constructed out of 2 x 1 inch tube steel, reinforced along the two sides with 3/16 inch plates. The shank is angled back 3 or 4 degrees and the Freitags feel the angle should be a bit more (about 5 degrees) for a little better residue clearance off the shanks. However, the shanks are presently doing a pretty good job of residue clearance. A wear plate at the front was welded onto the front of the shank with abrasive resistant (AR)

high carbon steel that extends about ten inches above the knife tip. The shank is reinforced with a brace at the front. The seed tube enters the back of the shank about two thirds of the way up the shank and the seed and fertilizer flows through the shank and drops into the bottom of the seedbed. This steel tube is slotted at the bottom so a gear clamp can securely hold the plastic seed tube. This system of attaching the seed tube allows nothing to obstruct the seed inside the seed tube, even large seed, as it enters the shank.

Gord and Wayne have been very pleased with the seed placement of the seed and the surface finish after seeding. They generally seed at about 5 mph. There is very little soil disturbed between the rows and the ridges are



Vertical shank built by Gord and Wayne Freitag. The Gen 43 tip has 6000 acres on it.

TREES AS A DIVERSIFICATION OPTION ... CONTINUED FROM PAGE 8

associated with it. The risk of the crop is relatively high compared to annual crops. Expansion of the industry would proceed more quickly if government funding would increase. Funding that would enable processors and producers to meet in the middle would be great. Currently, industry does not want to expand because of no guarantee of raw material and producers do not want to grow the trees because of a questionable market. At present, the federal government does not see the agroforestry initiative worthy of funding to provide full extension services, therefore minimal funds are allocated. There is potential for programs arising from the implementation of the Kyoto Protocol. Wood is recognized as a carbon sink and as such will contain carbon credits. The amount of money available from the carbon stored in the trees is a wild card; right now we do not know what the potential is. There is a provincial green cover program that provides \$7.50 - \$15.00 per acre to

help cover the costs of seeding forage and pasture crops. SAFRR may expand the program to include tree plantations. If the funding stays at the \$15 range this will not be much help given that the total variable input cost for a 15 year old stand is around \$2500 per acre.

It seems quite apparent that there needs to be more funding in this industry for it to take off. There are a couple of key problems. There is minimal experience in agroforestry in Saskatchewan, poor mindset of the viability of plantations, and Saskatchewan has an underdeveloped value added forest industry. The value added activities include identification of new market opportunities for products and identifying improved processing technologies to make better use of existing supplies. Instead of shipping raw product, value could be added in our own province which would add jobs and money to the industry.

Saskatchewan has ample opportunity for increasing plantation acres. We

have 65 million acres of farm land and of that, 20% is marginal which is suited for tree production. The parkland area is close to the fibre industry plus it is most suitable for tree production. The Saskatchewan forest industry is expanding but its expansion is limited to availability of raw product.

There are many other potential benefits that can be realized from agroforestry and afforestation for producers. Land value will continually increase because of the growing commodity, soil erosion control on marginal land put into trees, control of salinity and other phytoremediation qualities, stream bank stabilization to conserve downstream water quality, income from a carbon credit market, utilization of otherwise non-cropable land, and crop diversification. It is understood there is good potential for a new industry to develop in Saskatchewan. The Saskatchewan Forest Centre is the main entity pursuing this venture. Hopefully, as agroforestry pushes onward, more producers and government officials realize the potential of this industry in Saskatchewan. ●



Side view of shank showing notched seed tube and new Gen 43 tip

much lower than with systems previously used. The smoother soil surface makes spraying much more pleasant for both operator and sprayer. Residue clearance has proven to be much better than with the C-shank system. This spring, the Freitag's had only one shank that was bent from a close encounter with a rock, but over the last four seasons, essentially there has been no difference in the number of bent shanks when compared to when they were using the C-shanks. They did encounter some plugging this spring when the soil was quite wet and muddy. However, once the surface dried a bit, there were few plugging problems.

Overall, this retrofit looks to perform very well, is simple in design and is inexpensive to build. The Freitag's did build jigs to weld the shanks, but there really wasn't any special equipment used that every farmer would not already have on their farm. It appears that farmer ingenuity is alive and well with simple, economical retrofits such as this. ●



Front view of shank showing its narrow profile and front wear plate

Seeding Native Forages

By Juanita Polegi, PAg
Assistant Manager

With the Green Cover Program offering significant financial assistance to establish native species, some producers may be interested in seeding some native forage stands. These producers should be aware that native forages aren't exactly like tame species so often they require special consideration.

For one thing, native grasses are not known for their prolific seed production. As a result, seed stock availability will be limited. Brant Kirychuk, PFRA in Regina said seeding the native species is not so different than seeding tame species. "Seed native species like you would seed tame grasses which is like seeding canola", said Brant. "Seed shallow into a firm seed bed".

As native grasses are slower to establish than many tame species, Brant recommends seeding as early in the spring as possible.

While dormant seeding in the Black Soil Zone after October 15 should work, Brant indicated that there hasn't been much experience with dormant seeded native species.

While many producers will seed a cover crop at a light rate with tame forages, it is **not** a recommended practise for native species. "Native species don't tolerate competition so a cover crop should not be used", said Brant. To provide protection to the little seedlings, Brant recommends seeding into standing stubble. Bridging of native grass seeds such as Green Needle Grass and Porcupine Grass will be less of a problem if they are de-awned prior to seeding. Mixing the seed with cracked wheat or

vermiculite will also enhance seed flow.

Competition from weeds will also negatively affect native forage seedlings. Brant recommends controlling the weeds prior to seeding with an application of glyphosate. Depending on the forage mix, controlling the weeds post-emergent will be difficult.

As for fertilizer requirements, phosphorous can significantly aid in the establishment of a forage crop. "No more than 15 lb/ac actual phosphate can be applied



Brant Kirychuk speaking at the SSCA Conference. Native species have different requirements than tame.

with the seed but higher amounts can be applied if there is good separation between the fertilizer and phosphate", said Brant.. Native species tend not to use much nitrogen while establishing so applying that nutrient at seeding is unnecessary. "Nitrogen applied at the time of seeding native grasses just doesn't make economic sense", he said.

Brant indicated that most fertility research has been conducted on native prairie. There is some uncertainty as to whether those results can be applied to seeded native stands. Research is needed on the economics and agronomics of applying fertilizer, and especially nitrogen, to established seeded native forages.

Native forages are meant to be grazed but not in the year of establishment. The seedlings need time to grow and put down roots. In Year 2, producers have a couple of options. They can graze the stand lightly or they can cut and bale it early, thereby giving the stand lots of time to recover.



Older stands fit into a controlled grazing system very well. "Native stands provide great summer and late fall grazing," said Brant. "Producers can graze their Crested Wheat Grass and Brome Grasses in the spring and then turn their cows onto the native stands in early July". Brant suggested that most native pastures should be grazed only once in a growing season. Some producers will divide their native pasture in half, using one side for

summer grazing and the other for late fall and early winter pasture.

Mature native stands are not usually cut for hay. "Tame species will generally provide greater tonnage than native stands; and due to the limited availability of native seed, it's best use in a production system is for summer and fall grazing," said Brant.

The Green Cover Program provides an incentive to grow native forage species. Understanding the agronomics and proper management of native species will ensure the successful establishment of these forages. With a little rain and a little luck, native forages will play an important role in diversifying rotations, extending the grazing season, and storing carbon. ●

New Demonstrations at the CLC

By Laurie Hayes, MSc, PAg
Manager, Conservation Learning
Centre

This is the beginning of an exciting season for the CLC – new projects, national funding for our school program and new board members to welcome. Of course, we had to close off last season first. We finished combining the wheat on May 6 (~5 bushels per acre; Grade #3) and the canola May 12 (~8 bushels per acre; Grade #1 with many splits). We encountered no problems and have yet to look at the yield maps.

The annual crop seeding (with the exception of a couple of demonstration plots) is complete but we have yet to seed our “riparian” and other forage areas. Some of the new demonstrations this year include 6045 Clearfield canola (40 acres), Prosper seed treatment for canola (40 acres), Headline fungicide and Apron Max seed treatment for peas (5 acres) and Snowbird hard white spring wheat (30 acres). Fields have been seeded to 2733 canola (40 acres), CDC Stratus malting barley (60 acres), AC Superb hard red spring wheat (30 acres) and CDC Bethune flax (110 acres). In addition, we have some smaller plot demonstrations of peas (3 varieties), pinto beans, fababeans, soybeans (2 varieties), corn (10 varieties), millet (2 varieties), turnips (2 varieties) and forage canola.

The flax variety CDC Bethune was seeded for our precision farming project. This variety was chosen based on its reduced straw strength, enabling us to straight cut it at harvest time, as we did in 2001. We have however encountered some problems with this project again this year.

The puzzle began before seeding, with the return of our soil analyses. The analyses were showing almost the exact opposite of what we were expecting – not really surprising given the drought of the last two years. There was no difference (unexpected) in the recommended rate of nitrogen for either half of the field (based on the probability of high versus low precipitation). There continued to be a difference (as expected) in the recommended rate of phosphate (28 versus 13 pounds per acre).

We applied the phosphate (as 11-52-0) before seeding. Since our prescription for nitrogen calls for 0.5X and 1.5X the recommended rates and there was nitrogen gained through the 11-52-0, although negligible, there remained a very low amount of nitrogen to be applied. This created problems with the application of such low rates – 1.1 gallons per acre as the lowest rate and 7.6 gallons per acre as the highest rate. In order to facilitate the application of the lowest rate, we diluted the liquid fertilizer 50-50 with water, giving application rates that varied between 2.2 and 15.2 gallons per acre.

Even with the dilution, monitors were continually “beeping” warnings and the monitor readings were very erratic during the seeding of the low-rate areas. In order to apply the lower rates, a specific size of orifice is required which then creates a problem when higher rates needed to be applied in other polygons.

In hindsight, we should have applied the variable rates of nitrogen first in the granular form and then put the phosphate (as liquid) down with the seed. But this raises another concern — the fact that, in order to demonstrate the “effectiveness” of precision farming this year, with our current program and equipment, we would have had to make two passes – and that isn’t exactly zero till!! We will need to further assess the design of our current project, keeping in mind the challenges of implementation.

Last fall, the emergence of the Osprey winter wheat was good. This spring, the sensitivity of winter wheat to even small amounts of laying water was evident. Any low areas that had even a minimal amount of water had no winter wheat present once they dried. Despite that, the crop is looking very good. Forty pounds of nitrogen was dribbled (through the seeder) onto the crop on May 15.

We are now waiting for rain – we have had about a half since the middle of April. While we came into the spring with better moisture conditions than last year, most of the moisture has moved down to the deeper water-depleted areas.

PAMI (jointly with SSCA) has established a demonstration on the benefits of swine manure injection on annual crops. They will be comparing different rates

(1X, 2X and 3X recommended rates) and times (preseed and post-emergent) of application. The intent is to inform hog producers, farmers and the public about the importance of appropriate swine manure application rates to reduce the potential negative effect of swine manure (through N₂O emissions) on the environment. The project will continue for three years. The CLC is also involved in other Greenhouse Gas Mitigation Projects with SSCA in the Soil and Nutrient Management sections.

When PAMI came to apply the preseed treatment, there was enough hog manure in the tank remaining to apply a treatment to the forage gardens. Since there are four reps, one rep was treated at the time and another will be treated when PAMI returns to apply the post-emergent treatment. There is already a visible difference in the growth of the treated rep and should we get some moisture, it will be interesting to observe the effect of the swine manure.

The environmental containment pit started for last year has been completed this spring. The pit was dug, bentonite worked into the top layer of soil and the liquid fertilizer tanks placed inside the pit onto gravel beds. There a couple of finishing touches left (seeding the berm; building steps into the pit; moving the fuel tanks) but they should be completed by mid-summer. This was a low cost, low labour project that directly addresses environmental concerns (particularly about water quality) with regard to potential leakage or spillage of agricultural products and fuel.

As mentioned in the last newsletter, our school program has been awarded a three-year grant. This funding, totaling \$50,000 over three years, was received from the Natural Sciences and Engineering Research Council of Canada, under the PromoScience program. A federal government program, PromoScience



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NEW DEMONSTRATIONS AT THE CLC ... CONTINUED FROM PAGE 15

offers financial support for organizations working with young Canadians to promote an understanding of science and engineering. This is a strong endorsement of the program that we have established and, together with other school sponsors, ensures the continuation of our high-quality school program.

Further to our plans enlisted in the last newsletter, we have planted 200 strawberry crowns in a trial with Karen Tanino and established a hybrid poplar stool bed with the Saskatchewan Forestry Centre.

Farewells and Welcomes

Long-time board member Jason Fradette (PFRA) has stepped off the board. He is the sole survivor of the original board and, through the years, his input and expertise has been invaluable. We appreciate his commitment and

dedication. We will all no doubt continue to "run into" him in his capacity as the Saskatchewan representative on the

terms. As a producer member of the board, his ideas and input have contributed to the relevancy and success of the CLC's projects. We thank him for his time and commitment and we will miss all the good jokes!!

David Griffin, a grain producer from Paddockwood, will be joining the CLC Board of Directors, representing the local ADD Board. He has implemented direct seeding techniques for the past four years. Philip Mansiere will also join the Board to replace David Newhouse. Philip operates a mixed farm near Meskanaw

and has direct seeded for nine years.

So, that is the lineup for this year. Please stop by the farm any time you are in the area to check out this year's projects.

Again, we thank our many supporters for their contributions. ●

Ten years!! It's been ten years since the Conservation Learning Centre opened its doors. Come and celebrate this anniversary with us on Tuesday, July 22, 2003.

Agenda:

- 10:00 am Direct-seeding retrofits
- 12:00 pm Lunch (sponsored by Gates Fertilizers)
- 1:00 pm Anniversary Presentations
- 1:30 pm Farm tours

Join the festivities and see the difference after ten years!

National Farm Plan Working Group. In his place, we welcome and look forward to working with Ian Pickering, Manager of the PFRA office in Melfort.

David Newhouse will also be leaving the Board after serving two three-year

BAD HABITS ... CONTINUED FROM PAGE 7

- cereals - lots of straw/little chaff
 - oilseeds- very little straw/lots of chaff
2. Width of Cut
 - The greater the width of cut, the greater the power requirement to spread both chaff and straw
 3. Stubble Height
 - Excessive stubble height can create plugging problems for hoe type openers
 - General rule of thumb is that stubble height should not exceed 1

½ times the row spacing of the seeding tool

- With disc type openers, tall stubble reduces seeding problems

4. Straw choppers and chaff spreaders

- Research by PAMI found that straw should be spread 80% the width of cut and chaff should be spread over 50% the width of cut
- Fields can be harrowed to provide sufficient spread of straw across the

field, however, chaff spreading must occur at the back of the combine

- Chaff collection can be an excellent alternative and important cattle feed

So how's your addiction doing? Remember, if you're considering moving to a one-pass seeding system, those plans should begin well in advance. For more information on the five pillars of direct seeding, visit our web site at www.scca.ca. ●

Publication Agreement No. 40065736