SSCA Staff and Board of Directors
(l to r - front row) Dave Bueckert, Gary Schweitzer, James Lokken, Pat Flaten, John Kiss and Gerry Willerth. (middle row) Bob Linnell, Ken Sapsford, Terry Pearse, Dean Smith, Garth Patterson, Juanita Polegi and Yvette Crane. (back row) Marv Fenrich, Garry Meier, David Thompson and Guy Chartier.

As of March 2nd, Cheryl Armbruster has become SSCA's full time secretary\receptionist.

Howard Fox (SSCA's tree guru) has returned to the PFRA Shelterbelt Centre in Indian Head.

Ron Alton — Carrot River
Dale Anderson — Richard
Array Farms Ltd. — Delmas
Bill Ayrey — Evesham

Ed Beauchesne — Albertville
Colin Beaulieu — Estevan
Karen Benjaminson — Rosetown
Craig Bews — Eatonia
Rod Blenkiron — Beechy
Murray Blyth — Waseca
Francis Bouchard — Kerrobert
Tom Bridge — North Battleford
Paul Brule — Albertville
Larry Bryck — Hubbard
David Bryden — Arborfield
Clarence Buele — Albertville
Wayne Burziwski — Lloydminster

Gregory Cameron — Stoughton
Claude Carles — Radville
Wayne Clancy — Birch Hills
Shawn Compton — Darlingford
Robert Cooper — Regina
Dennis Cruywels — Alida
Cummings Farms Ltd. — Unity
John Curle — Porcupine Plain

Stan Daniel — Lloydminster
Allen Davey — Wilkie
Arnold Denham — Weekes
Garry Dennis — Perdue
Dow Elanco Inc. — Newmarket
S.W. Dowling — Prince Albert
Barry Ducherer — Neilburg
Layne Duke — Plunkett

Eastview Acres — Wolseley
Darin Egert — Cando
Oscar Epp — Rosthern

Keith Fournier — Rivercourse
John W. Fowler — Arbourfield
Dave Francis — Unity
Joe Frank — Ft. Qu'Appelle
Aaron Friesen — Rosthern
Philip Fullerton — Lacadena
Ray Gabruch — Paynton
Randy Greenwald — Scott
Lyle Greiner — Moose Jaw
Andy Grenier — Bellevue
Arnold Groves — Portreeve
Don Gunn — Tyner

Erni Hall — Wynyard
Gary Hanson — Hanson
Guenter Harder — Carlton
Owen Hartman — Elrose
Andrew Hawrysh — Bordon
Glenn Helgason — Foam Lake
Lorne Herzog — Mayview
Ernest Holinaty — Porcupine Plain
James Hopkins — Melfort

Lorne Inverarity — Dinsmore

Rene Jalbert — Perdue

Wayne Kalthoff — Humboldt
Kambeitz Agriculture Inc. — Sedley
Kelly Farms Ltd. — Sceptre
Jerry Kindrat — Ridgedale
David Kirkland — Wilkie
John Kutz — Elrose

Herb Lang — Ridgedale
Barry Larsen — Radville
Louis Lavoie — Battleford
Ellis Leaman — Chaplin
Byron Lennox — Kuroki
Corey Loessin — Radisson
Lows Farms Ltd. — Birch Hills
Petere Lussier — Arborfield
Jim Luthje — Baldwinton
Les Lynch — Osage
Ron Lyseng — Winnipeg

Dave Marshall — Semans
Bill McLaren — Maidstone
K. Scott McNally — Rosetown
Ken McPhee — Tisdale
Stewart Mitchell — Battleford
Dwayne Mitchell — Battleford
Monsanto Canada Inc. — Saskatoon
Arthur Murray — Glenavon

Garry Noble — Assiniboia

Gordon Ofstie — Glenside
Robert Olson — Quill Lake

Boyd Partington — Evesham
Rick Pattison — Lemburg
Fran Petruic — Avonlea
Tim Pfeiffer — Lake Lenore
Ed Pomedli — Lake Lenore
Garry Poole — Edam
Bill Presber — Naicam
Walter Pritchard — Moose Jaw
Jon Proctor — Marsden
Bruce Pugh — Rose Valley

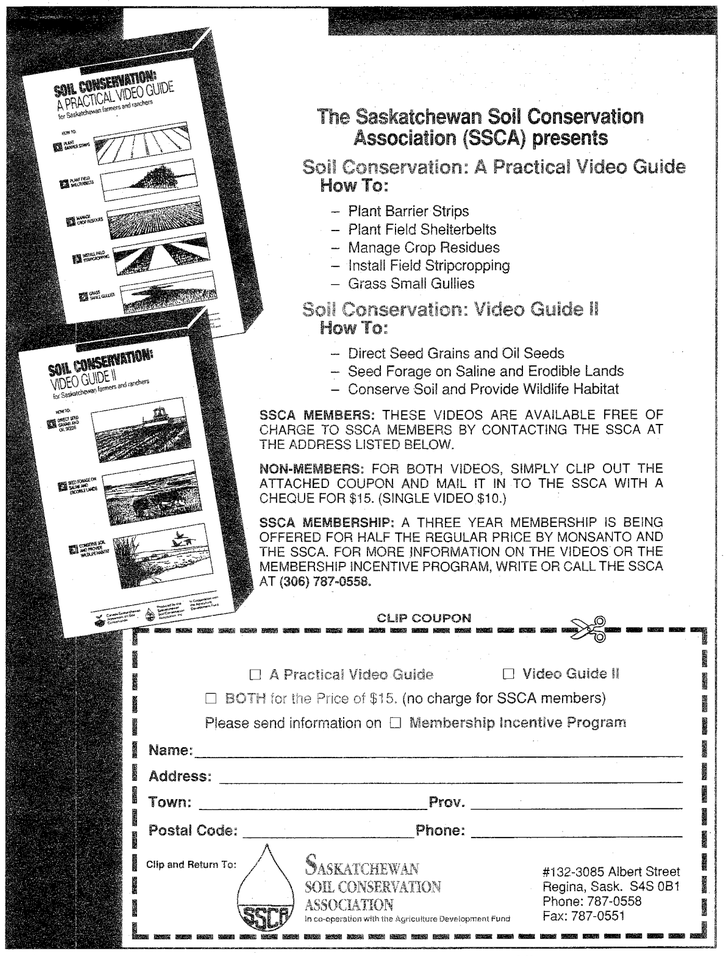
Robert Schindel — Lintlaw
David Schommer — Handel
Lorne Scott — Indian Head
Lorne Sheppard — Lucky Lake
Gerry Sieresy — Warburg
Les Sjovold — Outlook
Jim Sowa — Wadena
Lyle Spearing — Oxbow
W.K. Spearing — Pense

John Tarnowetzki — Tuffnell
Brian Thiessen — Langham
Tower Drive Farms — Delmas
Triple H Farms Ltd. — Middle Lake

Cy Udell — Viscount

E. Bruce Walker — Lloydminster
Ormond Wedin — Midale
Larry Whitehead — Viscount
George Wilson — Saskatoon
Dale Wylie — Biggar

Daryl Young — Maidstone



The Saskatchewan Soil Conservation Association (SSCA) presents

Soil Conservation: A Practical Video Guide How To:

- Plant Barrier Strips
- Plant Field Shelterbelts
- Manage Crop Residues
- Install Field Stripcropping
- Grass Small Gullies

Soil Conservation: Video Guide II How To:

- Direct Seed Grains and Oil Seeds
- Seed Forage on Saline and Erodible Lands
- Conserve Soil and Provide Wildlife Habitat

SSCA MEMBERS: THESE VIDEOS ARE AVAILABLE FREE OF CHARGE TO SSCA MEMBERS BY CONTACTING THE SSCA AT THE ADDRESS LISTED BELOW.

NON-MEMBERS: FOR BOTH VIDEOS, SIMPLY CLIP OUT THE ATTACHED COUPON AND MAIL IT IN TO THE SSCA WITH A CHEQUE FOR $15. (SINGLE VIDEO $10.)

SSCA MEMBERSHIP: A THREE YEAR MEMBERSHIP IS BEING OFFERED FOR HALF THE REGULAR PRICE BY MONSANTO AND THE SSCA. FOR MORE INFORMATION ON THE VIDEOS OR THE MEMBERSHIP INCENTIVE PROGRAM, WRITE OR CALL THE SSCA AT (306) 787-0558.

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Phone: 787-0558
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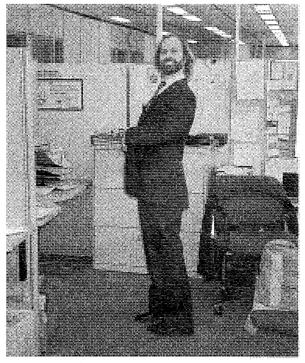


SSCA Employee of the Month is Economist James Lokken who won for his meticulous attire.

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. Pertinent photographs would be appreciated) Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert Street
Regina, Sask.
S4S 0B1

The Newsletter of the Saskatchewan Soil Conservation Association Inc.

SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
in co-operation with the Agriculture Development Fund

Conference chairman Terry Pearse fields questions aimed at Sask. Producer Panel. Panel members (L to R) included Lucien LePage (Montmartre), David Sefton (Broadview) and Marcel Couture (Debden).

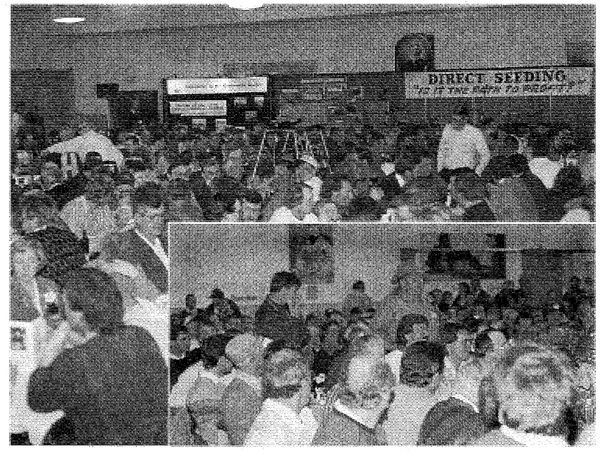
Farmers talking to farmers could have been the theme at this year's Direct Seeding Conference in Prince Albert, as producers from the three Prairie Provinces exchanged knowledge and experiences on direct seeding equipment and techniques.

"The idea behind the conference was to share ideas. By utilizing experienced farmers, we were able to present the direct seeding concept from the grass roots," said Garry Meier, organizing committee member.

By presenting such a diverse range of speakers, the committee's efforts resulted in a crowd that exceeded their expectations and resulted in total success. As part of the organizing committee, the Saskatchewan Soil Conservation Association take this opportunity to publicly thank everyone who participated in the conference. A special thank you is extended to Selmar Njaa, Stewart Adams, Wyatt Meyers, Sid Zdrill and Barry Swanson for their input for making the conference the success it was.

At the annual business meeting of the SSCA, all six Proposed Extraordinary Resolutions were adopted by the membership. These constitutional changes have created two new seats on the SSCA Board of Directors and gives ALL SSCA MEMBERS voting privileges at meetings and elections.

The two new seats on the Board are open to ANY SSCA MEMBER. The SSCA will be opening one seat for elections in the Fall of 1992 and the other in the Fall of 1993. Nominations must be submitted to the SSCA before Sept. 30th. If you are interested in becoming a member of the SSCA Board of Directors contact the Chairman of the Elections and Nominations Committee (Dave Bueckert 759-2523) or the SSCA Executive Manager at 787-0558.



Over 650 farmers took in the SSCA Annual Meeting/Direct Seeding Conference Feb. 10-11, in Prince Albert.

This year's SSCA Annual Meeting\Direct Seeding Conference held in Prince Albert, February 10-11, attracted over 650 farmers who came to hear speakers share their direct seeding experiences and knowledge.

"The organizing committee saw a need to present all aspects of direct seeding, including a Western Canadian overview, requirements for direct seeding, fertilizer placement, weed control and the economics of direct seeding," said Garry Meier, Soil Conservationist with the SSCA.

The organizing committee made up of SSCA and Saskatchewan Rural Development personnel and the Prince Albert ADD Board personnel, was overwhelmed to see such a large number of producers show up for each of the sessions.

"On the Monday morning of the conference, we had about 300 people pre-registered for the conference and by the time the conference started, we were wall to wall with people with standing room only", said organizing committee member Barry Swanson of Sask. Rural Development in Prince Albert.

Conference speakers for Monday Feb. 10 included key note speaker Dr. Dwayne Beck of the Dakota Lakes Research Farm in Pierre, South Dakota - Garth Butcher of Shoal Lake, Manitoba - Dr. Guy Lafond of Indian Head - Jack Dobb of the Peace River Region- Garry Meier of the SSCA and Saskatchewan producers David Sefton of Broadview, Lucien LaPage of Montmartre and Marcel Couture of Debden.

Tuesday speakers included Michael Splinter of the Saskatchewan Woodlot Association, Jim Johnston of Forestry Canada and Larry Koturbash of Ducks Unlimited. In the final session of the conference, John Harapiak of Westco Fertilizers spoke on the effects of fertilizer placement in a direct seeding system, Doug Billett of Sask. Ag and Food spoke on weed control and Roy Button of Sask. Rural Development ended the conference with the economics of direct seeding.

"It was gratifying to see so many producers show such an interest in direct seeding," added Meier. "Our objective was to show producers that direct seeding is a viable alternative to conventional seeding and tillage and we believe that this was accomplished."

A report on each of the topics presented at the conference is included in this issue of the Prairie Steward.

The 1993 SSCA Annual Meeting\Conference is slated to be held in June just prior to the Farm Progress Show and will consist of field demonstrations and a one day workshop.

A special thank you goes to all of the people who helped make the conference the success it was. Organizers hope that all who attended walked away with a greater understanding of direct seeding and what it could mean for their farming operation.

On behalf of Past-President Gary Schweitzer, Ken Allport (l) presents the President's gavel to incoming SSCA President Dave Buekert.

DAVE BUECHERT
SSCA PRESIDENT

-- AGE 59,
-- MARRIED TO MARGARET
-- 3 CHILDREN
-- FARMS IN TUGASKE
-- TYPE OF SOIL BROWN, SANDY

Q: How long have you been a member of the association?

A: I was one of the founding members.

Q: How long have you been on the Board of Directors?

A: Since 1987.

Q: Why did you get involved with the SSCA?

A: Because I have been interested in soil conservation and good land stewardship for as long as I've farmed. I felt there was a need for an organization that would gather information on soil conservation and pass it on to other farmers. Another thing that I really thought was important was that I wanted to leave my land in better shape than what it was when I received it. I think that's probably what my biggest concern is, caring for the land.

Q: What are some of your conservation practices?

A: Well, we have every soil degradation problem that you can imagine. We have salinity, we have erosion because of the slope of the land, and we have light soil. We've seeded the marginal land back to grass, planted field shelter belts, and we've minimum tilled. We even tried direct seeding with winter wheat.

Q: Why isn't everybody in the Province practising soil conservation?

A: I think to a great extent, people see land blowing and they don't really understand the severity or really what they're losing. And that was part of my reason for wanting to form an organization that would really get it across to farmers that we are losing one of our most valuable resources and I think that was very much a part of my becoming involved. It's something that you don't regain back very quickly. It doesn't take very long to lose an inch of topsoil, but it takes up to 50 years under good conditions to build an inch of topsoil.

Q: Is the Association doing a good job in convincing farmers of the importance of losing topsoil?

A: Yes, I think that we're accomplishing that. Maybe not to the degree that we would like. There's still a lot of educating to do out there and I don't know exactly how we're going to reach that hard core that don't go to meetings and don't even avail themselves of that information. I'm not sure how to reach those people, but we have to keep trying. We have to keep demonstrating to them that it is important to conserve our soil.

Q: Do you see governments taking a more aggressive stand on soil conservation?

A: I think we're going to see that. Possibly in the near future we're going to see that they will take a more aggressive stand. There's going to have to be more responsibility or compliance or whatever we want to call it in regards to soil conservation.

(continued on page 4)

1992-93 SSCA Board of Directors. From (l to r) Gary Schweitzer, Dave Bueckert, Ken Sapsford, Terry Pearse, Marv Fenrich, Dean Smith, David Thompson and Gerry Willerth.

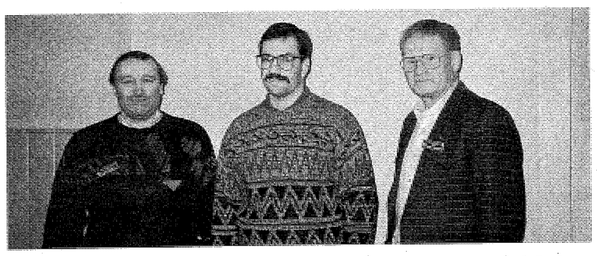
The recent Annual Meeting of the SSCA in Prince Albert, the Association was pleased to announce the election of new Board Members for the South West, East Central, North West Regions and President-Elect.

Taking over in the South West for Gerald Girodat (Shaunavon) is Dean Smith (Success). In the East Central David Thompson (Kelliher) is taking the over the reins from Fred Phillips (Yorkton). We thank Gerald and Fred for all of their efforts over the years and we look forward to David and Dean's organizational expertise and energy. Marv Fenrich (Wilke) was elected by acclamation to continue representing the North West Region. We look forward to continuing to help Marv with his promotion of soil conservation in the policy and finance area.

Special thanks from the Association to Lorne Crosson (Limerick) for showing his commitment to soil conservation by putting his name forward in last year's South West elections.

This past fall, Gerry Willerth resigned from the Board to run for the SSCA Executive. Gerry won the position of President-Elect by acclamation. To replace Gerry, the SSCA Board welcomed Paul Carles (Radville). Paul was appointed October 1991 to represent the South East Region until elections in the fall of 1992.

1992-93 SSCA Executive. From (l to r) Gary Schweitzer - Past President, Dave Bueckert - President and Gerry Willerth - President Elect.



Newly elected directors include (l to r) Dean Smith - South West, Paul Carles - South East and David Thompson - East Central

1992-93 SSCA Board of Directors

Dave Bueckert (Tugaske) President

Gerry Willerth (Indian Head) President Elect

Gary Schweitzer (Eston) Past President

Marvin Fenrich (Wilke) NW Director

Terry Pearse (Tisdale) NE Director

Ken Sapsford (Perdue) WC Director

David Thompson (Kelliher) EC Director

Dean Smith (Success) SW Director

Paul Carles (Radville) SE Director

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James Lokken, Conservation Economics
Yvette Crane, Education

By: Blair McClinton
N.W. Conservationist

The secret to success with any shelterbelt is good weed control. When many of us think of weed control in shelterbelts, we think back to the time we spent hand weeding trees as children. These "bad" memories of hand weeding are one of the main reasons why more shelterbelts are not planted. There are now several herbicides that can be used in shelterbelts.

Applying trifluralin before planting the tree row is one the most effective ways to control weeds for the first two years after planting. This application will control most annual grasses and many annual broadleaf weeds.

There are several annual weeds not controlled by trifluralin such as stinkweed and wild mustard. There are a few herbicides that will control these weeds in shelterbelts. However, there are some limitations on how and when these products can be used.

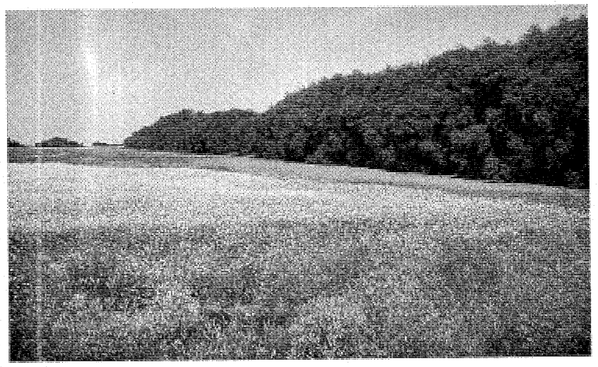
Linuron (Lorox L, Lorox DF or Afolan F) can be applied in the late fall or early spring while the trees are dormant. Linuron should not be incorporated. This will provide season long control of many annual broadleaf weeds. Linuron can also be applied as a directed spray to the base of the tree or shrub seedling after the buds have broken.

Simazine (Princep Nine_T or Simazine 80W) can be used on shelterbelts that have been established for at least one year. It should be applied in the late fall or early spring while the trees are dormant. Simazine should not be incorporated. Simazine can stay active in the soil for more than one growing season. Simazine should not be used on coarse textured soils. Do not transplant replacement trees into simazine treated soil.

Dichlobenil (Casoron 4G) can be used on shelterbelts that have been established for at least one year. Apply dichlobenil in the late fall or early spring while the trees are dormant. Dichlobenil should not be incorporated. Dichlobenil is in a granular form that requires a specialized applicator. It should be applied on coarse textured soils. Do not transplant replacement trees into soils treated with dichlobenil.

Glyphosate (Roundup, Wrangler, Laredo) and paraquat (Gramoxone) can be used in shelterbelts if the spray is directed to the base of the tree or shrub, avoiding green growth. Fluazifop-butyl (Fusilade) can be applied as a post-emergent treatment for grassy weeds.

Although herbicides will not control all weeds, they can cut down on the amount of hand weeding necessary. The PFRA publication "Weed Control in Shelterbelts" and the SSCA herbicide selector chart "Herbicides Registered for Saskatchewan Shelterbelts" have additional information on chemical weed control.



By: Junita Polegi

Recently I attended a meeting of Parkland producers and the topic of shelterbelts came up. I was dismayed when one producer scoffed at the need for shelterbelts. While he believed that shelterbelts were important for areas with "light" land, "like in the south", he thought they could only prove bothersome in the Parkland. After all, too many people had spent too much money and time getting rid of trees to want to try to establish them now.

The producer's comments made me wonder just how far we had come with the soil conservation message. Hadn't he heard about the benefits to the soil afforded by well-planned and maintained shelterbelts? Hadn't he heard about the net overall increase in crop yield in fields where properly spaced, mature belts grew? Obviously not. Or perhaps he had heard but never bothered to listen.

On the brighter side, there are some producers who recognize the benefits of these belts. The number of miles of field shelterbelts planted in the Parkland Zone has steadily increased since the inception of the SOS program.

It's up to Conservationists, SOS Committees/ADD Boards to continue to promote the benefits of field shelterbelts. We have to ensure that producers all across the province realize that they have a choice in the species of trees they can plant in a belt. A type of belt that might be beneficial in one part of the province may indeed be bothersome to a producer elsewhere in the province. Choosing the right composition of species can determine the success or failure of any shelterbelt.

Field shelterbelts won't solve all erosion problems. They are a part of a total soil conservation package. But SOS Committees and/or ADD Boards and conservationists who choose to focus their attention on only a few soil conservation practices and fail to promote the planting of field are failing producers in their area.

The Parkland Zone is well suited to the growing of trees. Well-planned and maintained shelterbelts do much for our soil and environment. Shelterbelts are not "just for the south".

by Ian McI'hadden

In my previous article in the Fall 1991 Prairie Steward several farming problems were universal in the world, whether conservation or economic problems.

The major difference occurs in how those problems are recognized and what efforts are made to solve them.

To compare two countries - prior to 1986, New Zealand had an excellent infrastructure of agriculture professionals to provide all services free of charge on a one on one basis if needed. With the government support of this service, the agriculture industry was provided with research facilities and technical advice.

With the elimination of government support, farmers now have to pay for advice on a user pay basis. The important thing is that the infrastructure and technical information, whether private or government, are there and can provide first class information.

The presence of this information is directly related to environmental issues and the stewardship of the land. The agricultural sector can distinguish what is beneficial and what may lie ahead in potential problems. By being able to recognize problems they can then try to correct problems within the present economic restrictions.

In West Australia a good portion of the land is fairly sandy and not very fertile. Because of lack of government support for agriculture, the Australian farmer has had to produce directly into world market prices. The present economic situation dictated that survival meet a broadacre, low input attitude.

As in Canada, prolonged adherence to the policy will result in degradation of the soil. Something that became very obvious in West Australia compared to Canada and New Zealand was the lack of available technical assistance. There isn't the infrastructure in place that allows the farmer access to help to solve his problems or information that makes him aware of the long term detrimental effects of their agronomic practices.

In West and South Australia there are inland salt water lakes. There is constant heat and periods of very little rainfall. Together these add up to a salinity problem of severe magnitude.

I visited a farmer that had lost half of his 5000 acre farm to salinity where absolutely nothing would grow. In conversation, I realized he had little idea of the root of the salinity problem and no idea on how to stay or stop more encroachment upon his land.

In West Australia the infrastructure has never been put in place for agriculture to find help when in need of technical assistance. Solutions have been by word of mouth and trial and error. In today's economic times neither the farmer nor the land can afford this system.

For example, the farmer that has 2500 acres of salinity had just paid a contractor with a caterpillar over $20,000 to dig 5-foot trenches across some fields to cure his salinity problem. This payment was made with no technical advice, the contractor totally dictated what, when and where these trenches were to be dug because he thought that was best. The contractor assured the farmer that this would help but it might take up to 20 years to reclaim the land.

The farmer was at the mercy of the contractor because he couldn't verify or dispute the claim without expert advice. The decision was made because he was grasping at straws trying to find a solution to his increasing problem.

The land, by the way, had no cover on it because of the salinity and after being chewed up by the cat began to blow. As mentioned before, neither the farmer nor the land can be sustained without access to and transfer of technology.

Seeing situations like this made me appreciate the advanced technology readily available to us in Canada, but also ask why more farmers don't access and utilize this luxury more!

During the winter, a number of school visits have taken place. Presentations on the importance of soil and the need for soil conservation have been made to students from Grades 5 to 12.

In January, District 39 ADD Board invited PFRA to a meeting to explain the On Farm Planning process. The Board members were given the opportunity to look at soils maps and then plug their own land locations into the computer to determine their susceptibility to erosion. A number of example situations were then run through CanHELP.

Finally, at this time offers of congratulations and thanks seem appropriate. Congratulations are extended to Dave Thompson of Kelliher who was acclaimed as the new SSCA director of the East Central Region. Dave succeeds Fred Phillips whose term as Director has ended. Thanks to Fred for serving 5 years as a Director of the SSCA. The Association has come along way since Fred first began his directorship. We look forward to Fred's continued involvement in the Association as a member.

3. Labour - Changes in labour costs occur with reductions in hired labour or when more acres can be farmed with the same amount of hired labour. Reduced and zero till should require somewhat less labour at peak seasons.

Button noted that determining the labour costs of the farmer is a very individual process. To make his point, Button asked the audience how much riding a tractor was worth an hour and then went on to inquire "How much is it worth to you sitting in this meeting today?"

He pointed out that less time spent on the tractor might mean more time spent checking weed control or at meetings looking for new information and technology.

4. Costs of owning machinery - (depreciation and investment costs) According to Button, "the most difficult costs are the machinery costs. How do you look at the costs of machinery in different systems".

Button explained that he had calculated lower machinery depreciation and investment costs of between $2.00 and $4.00 per acre for systems using less tillage, because of less machinery investment per acre and less annual hours on the equipment under these systems. The relatively small difference between systems surprised him, so he did some research.

The biggest factor in calculating changes in depreciation and investment costs is the tractor. Button found that farmers value tractors by year and condition more than by hours. There is a surprisingly small difference in value between a high and a low hour tractor of the same year and model. Button suggested that in the future, the value of low tractor hours may rise, changing relative machinery and depreciation costs.

Reducing machinery investment under conservation tillage is a difficult task. With a reduced tillage system a farmer might get rid of a cultivator, but may not cut costs because he may purchase a more expensive piece of seeding equipment.

For the farmer who "goes whole hog into zero-till" there is potential to get machinery costs down over a period of 5 - 10 years, but the farmer would have to sell off a lot of excess equipment. He warned, "You've got to get your machinery investment down if you want to get these figures down there [below conventional costs]".

Total costs for conventional, reduced and zero tillage systems for growing stubble wheat are within about $2.00 per acre of each other, according to Button's figures.

YIELD - Button feels that the real gains from reduced and zero till are in the potential for improved yields. Research shows that in the brown and dark brown soil zones, zero tilled stubble crops yield from 100 - 115 per cent of conventionally tilled stubble crops, and in the black soil zone, about 90 - 125 per cent. Reduced tillage stubble crops do slightly less well than zero-tilled crops, but often outyield conventionaly grown crops by 10 per cent or more.

Button said, "I think [yield increases are] where you're going to make your money, because direct seeding is going to save moisture and in the dry years it's going to be like insurance."

According to Button, the economics of stubble cropping are still problematic in the drier southern parts of Saskatchewan. The reduction in the price of glyphosate should, however, make chem fallow a more attractive alternative to conventional fallow.

With wheat at $3.85 per bushel (GRIP price net of premiums), stubble yields of about 78 per cent of fallow yields will give the same returns as fallow wheat. The area north of a line running at an angle across the province approximately from north of Regina through Saskatoon to North Battleford has stubble crop potential at this price.

The lower the price of wheat, the higher the stubble yields must be to break even with fallow wheat returns, and the further north the line moves. Higher wheat prices and/or increased yields from reduced and zero till will move that line south and west.

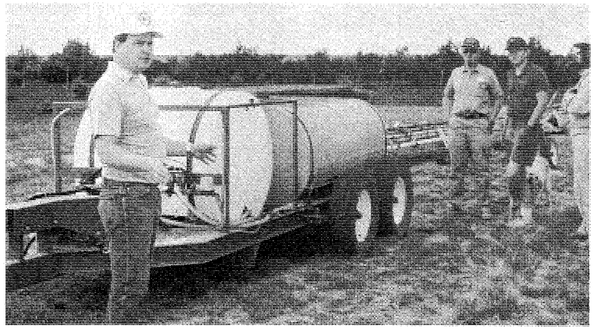
Summary - The change in returns from reduced or zero till compared to conventional tillage can be shown as:

Price(same) x yield(higher) - cost(similar) = Returns (higher)

In addition, farmers should consider the soil conservation benefits of reduced tillage. Keeping topsoil where it belongs has an economic value, although that value is difficult to measure at the present time.

Roy Button finished his presentation with the following points:

1. Determine your own costs of production.
2. Yield increases can cover any extra costs of production.
3. Reduced and zero till can improve the economics of stubble cropping.
4. There is no recipe for operating a conservation tillage program. When we get the practices down better, we'll be able to get a better handle on costs.



Bill Boyd explains his modified spraying system.

By: Garth Patterson
E.C. Soil Conservationist

Until eight years ago, Bill and Lynn Boyd had a problem on their 2100 acre farm just south of Eston. "Our farm was not erosion proof" recalls Bill, "Our 50/50 system using discers and harrow packers was causing wind erosion and reducing the quality of the land. We wanted a system that would leave more residue on the surface". Zero till and conservation fallow proved to be the answer.

Economics was also an important factor. When it came time to replace their tractor back in the mid 80's, the Boyds just couldn't afford to do it. "We had to lower our draft requirements" says Boyd, "By going to the acra plant openers, we were able to use a 100 H.P. tractor to pull 27 feet of seeding equipment. This is now our only tractor, and it has over 6,000 hours on it". According to a recent Grainews article, the average prairie farm has equipment depreciation of $.65 to $1.00 per bushel of crop produced. The Boyd's now have their depreciation down to $.29 per bushel.

Their innovative seeding system includes an old 27 foot Morris cultivator. They stripped the implement and the sale of the shanks covered the cost of the cultivator. Twenty four acra plant openers were purchased in Kansas and mounted on 13" row spacings. A Fexicoil air delivery system was used.

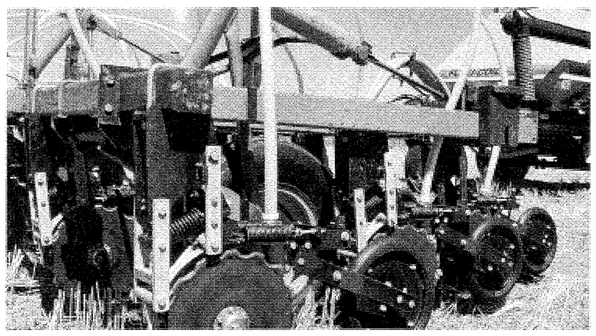
Their system now consists of direct seeding into either standing stubble or conservation fallow, depending on moisture conditions. The fallow operation is one pass of the sprayer with a combination of Glean, Rustler and ammonium sulfate in 2 gal/acre of water. In 1992 Glean will be replaced with another broadleaf product. In crop weed control consistsof a broadleaf product and Assert put down using a special 2 boom/2 tank sprayer that Boyd modified. "Our 13 inch row spacing in the crop allows us to spot spray grassy weeds using our 2 boom system".

Chemical costs have actually gone down from $20/acre to $13.75/acre with their new system of seeding and weed control. The Boyd's total cost of durum production is now about $45/acre. Boyd says, "Our strategy has been to reduce input costs as much as possible, since we can't control the price we get for our product. However, our biggest costs continue to be interest and depreciation".

Their crop rotation used to include wheat, durum, barley and lentils, but in the past few years only Sceptre durum has been grown. Boyd admits that their rotation is the weak link in the system, "Our goal is to move towards a more sustainable system, which would include a legume in the rotation". He would also like to implement a chaff collection system to reduce weed and volunteer crop growth. Bill is also confident that continued improvement in spraying systems will further reduce costs and improve efficiency.

The local crop club was one means Boyd used to share ideas and try new practices. "We have a good core of farmers that feel direct seeding with less disturbance is the way to go. The talk is now about erosion proofing the farm, at a reasonable cost".

"Our farm used to blow" recalls Boyd, "Our ditches used to be full. I even remember helping my father dig the harrows out of a sand dune one spring". Now they can sleep with peace of mind. "We now feel a lot better about our farm than we did a few years ago".



Acra plant operners are the heart of Boyd's zero till system.

SOIL CONSERVATION:
VIDEO GUIDE II
a videotape designed for Saskatchewan farmers and ranchers

	TOPIC	MINUTES
	Introduction	2:25
1	How to direct seed grains and oil seeds.	26:20
2	How to seed forage on saline and erodible lands.	12:00
3	How to conserve soil and provide wildlife habitat.	8:30

Total running time is 49:15 minutes.

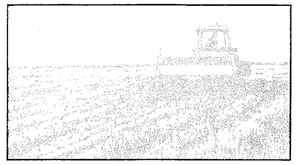
A videotape designed for Saskatchewan farmers and ranchers

SOIL CONSERVATION:
VIDEO GUIDE II

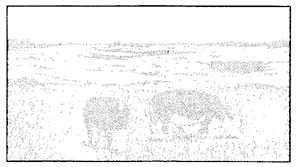
SOIL CONSERVATION:
VIDEO GUIDE II
for Saskatchewan farmers and ranchers

HOW TO:

1 DIRECT SEED GRAINS AND OIL SEEDS



2 SEED FORAGE ON SALINE AND ERODIBLE LANDS



3 CONSERVE SOIL AND PROVIDE WILDLIFE HABITAT

Canada-Saskatchewan Agreement on Soil Conservation

Produced by the Saskatchewan Soil Conservation Association, Inc.

In Cooperation with the Agriculture Development Fund

Soil Conservation: Video Guide II is now available.
To get your copy, see information on back page.

A recent membership incentive program announced by Monsanto and the SSCA seems to have caused a little confusion among a few SSCA members. The program offers 3 year memberships for $50, with Monsanto contributing another $50 towards the cost of the membership. What some members don't realize, is that the advertisement reads that this program is available to **NEW SSCA MEMBERS** and does not affect existing membership. The idea behind the program is to recruit new people to the Association and SSCA is pleased that Monsanto has provided this incentive. Members at this time are reminded that the **SSCA Membership Enhancement Program** is still being offered. Members who recruit 6 new members in one year will receive an additional 3 year membership as a bonus. So use the Monsanto coupon and start recruiting new members so that you may qualify for your three year membership bonus. For more information on membership, contact the SSCA office in Regina at 787-0558 or your regional soil conservationist.

IF YOU HAVE DIRECT SEEDING EXPERIENCE AND WOULD LIKE TO SHARE YOUR KNOWLEDGE, PLEASE READ THE FOLLOWING AND PARTICIPATE IN THIS ONE-ON-ONE INFORMATION VENTURE:

Are you willing to share your direct seeding experience with other Saskatchewan farmers? If you are, please fill in the attached clip coupon and mail it into the SSCA. Your name and phone number will be published in future issues of the Prairie Steward. Farmers seeking information on direct seeding will have the opportunity to phone you and ask questions or discuss your experiences. An information list (containing those willing to participate) will be produced and distributed to SSCA members.

✂ ---------- ✂ ---------- ✂ ---------- ✂ ---------- ✂

(Please print)

NAME: _____

ADDRESS: _____

PHONE: _____

SOIL ZONE: _____

TYPE OF SOIL: _____

TEXTURE OF SOIL: _____

CROPS GROWN: _____

SEEDING EQUIPMENT: _____

COMMENTS: _____

President's Profile (continued)

Q: Is compliance going to be similar to that of the United States?

A: If I go by what I hear at meetings and things like that, there's still a bit of resistance to the compliance program that's in the States, by farmers here. I have a feeling that eventually the taxpayer is going to demand that there is more compliance and if they're going to pay for it through taxes, farmers are going to have to comply.

Q: So you think that our government should force farmers to practice conservation?

A: I don't like to really use the word forced. But, if we want to have the benefits of existing programs, we should also be ready to give something in return. I don't think that's all that bad. Afterall it's to our benefit.

Q: Tell us about some of the benefits of joining the Association.

A: One of the biggest benefits that you receive from being a member of the Association is that you are helping promote soil conservation and we do that through many things. We offer support for good soil stewardship. First of all we show to our neighbours that we are interested in good soil management and that we're interested in wildlife and all those things that go with good land stewardship. We're doing that through education and there's also the benefit of knowing that you are part of an organization that is progressive in their thinking on soil conservation.

Q: As newly elected President of the SSCA, what direction do you see the Association going in the next year?

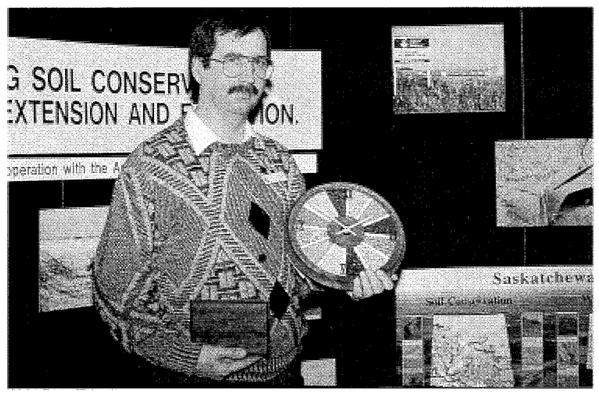
A: Well, first of all I'd like to say that I'd like the Association to consider themselves as part of a greater entity in soil conservation, that we are one of the players and that there is greater coordination needed between all the players in soil conservation like PFRA, Ducks Unlimited and Agriculture and Food, that we are equal partners heading for the same goal. Of course the thing that I think the association is heading into to is placing more emphasis on education because that's where it's at.

Q: What's the future of the Association after the contract runs out?

A: I definitely think that we will still be functioning. We need an organization like this. We have come this far in a very short time and we need to continue to promote soil conservation. Even without the contract, I think that we will continue. We will have to work harder at a membership drive, but I think that we are in a position now where other organizations that are interested in land stewardship will support us. I think there are a lot people still out there that really don't know too much about our organization and are waiting for an opportunity to join. I meet those kind of people quite regularly, that really don't know what we're all about. I think that we have to take responsibility for that and do a better job of advertising, but I certainly don't believe just because we don't have a contract that we can't function. I still would like to see us continue with a contract because we can do so much more if we have a contract.

Q: How many producers would you like to see involved with the Association? What's your goal?

A: I think a realistic number would probably be anywhere from 1,500 to 2,000 members. If we could get some 2,000 producers out there talking about and practicing soil conservation, I think we could really make a difference in the province of Saskatchewan.



Ken Allport, former SSCA President received momentos for his years of service with the Association.

Jack Braideck (r) of the Western Producer presents Noel and Diane Sylvain with the Conservation Producer Award.

Noel and Diane Sylvain of Cadillac received the Conservation Producer Award at the SSCA Annual Meeting\Conference held in Prince Albert. The award is presented annually by the SSCA and the Western Producer to recognize exceptional land stewardship in Saskatchewan. The Group Conservation Award was not presented this year because the SSCA did not receive any nominations for it. If you know of a producer group that would be eligible for the award, please notify the SSCA to receive a nomination form for the 1993 awards.

Toadflax

By: Blair McClinton
N.W. Conservationist

Yellow toadflax (Linaria vulgaris) is a herbaceous perennial that has become a serious range weed and potential annual crop weed in western Canada. This weed is increasing in cultivated lands due to a movement towards reduced tillage.

Toadflax first appeared in Saskatchewan in 1918. It had infested 130,000 acres by 1954. Two insects that feed on toadflax appeared in the late fifties. Extensive infestations of toadflax in parts of Saskatchewan were reduced considerably. However, toadflax remains a problem in an area west of North Battleford to the Alberta border.

Toadflax spreads by lateral rootstocks and by seed. The average spread of toadflax patches by the root ranges from 14 to 32 inches in one year. The importance of toadflax seed production is often underestimated. Toadflax can produce 5000 seeds per flowering shoot. Germination generally occurs from a shallow depth. The seed can remain viable for up to three years in the soil. Seed is spread by wind, water, machinery, feed and animals.

Toadflax is not as competitive as other perennials such as Canada thistle and quackgrass. Its root system is shallower, less aggressive and stores fewer root reserves. The traditional method of control has been to deplete root reserves through intensive tillage in summerfallow. This method has proven effective in short term rotations. However, intensive tillage (usually 10 or more operations) will leave the soil more prone to erosion.

Toadflax cannot be easily controlled in reduced tillage systems. This weed can tolerate many of the herbicides currently being used to control perennial weeds. There is no one herbicide that gives complete control of toadflax. A systems approach using a combination of herbicides, cultivation and crop competition is required.

Cereal crops such as wheat or barley compete the strongest with toadflax. Estaprop or Diphenoprop 600 can be applied in these crops. These products only suppress toadflax. This means that there will be a reduction in growth and seed set. Suppressing the weed will assist crop competition. There are no in-crop herbicides that give season long control of toadflax.

High rates of glyphosate (2-3 L/ac) can be applied after harvest. To be effective, producers should wait until there is six inches of regrowth. The field should be tilled seven to ten days later to kill the last remaining plants.

Where the toadflax is confined to patches, spot spraying with glyphosate can be effective. Patches should be treated when 10% of the plants have started to flower, around the first half of June. Follow-up cultivation, spraying, cropping or a combination of these will be required to eliminate the toadflax.

Although toadflax increases in reduced tillage systems, it is not clear how it will react to the intensive management of direct seeding systems. To control toadflax, producers must be as persistent as the weed itself, regardless of what production system is being used.

Weed Control: What Works in a Direct Seeding System

By: Pat Flaten
S.W. Conservationist

Doug Billett, Provincial Weeds Specialist with Saskatchewan Agriculture and Food, addressed the issues relating weed control to direct seeding. Some of the highlights are as follows:

1. The cornerstone of direct seeding is the control of winter annuals. The big question is, fall or spring application? In a normal year, 60-90% of the winter annual weeds germinate in the fall. Billett's general recommendation is to fall spray after Thanksgiving with 2,4-D ester or MCPA. If spring suits the situation better, spray before the end of April or it's too late!

2. So, if I spray with 2,4-D or a 2,4-D mix for winter annuals, will it harm the following crop? Several factors affect the disappearance of residues: rate of application, soil organic matter, temperature, rainfall, soil characteristics, and crop sensitivity. Some broadleaf crops can be affected, but not normally by a fall application of 2,4-D. However, be careful with spring applications and be aware of the effect of mixing other herbicides with 2,4-D, such as Banvel.

3. If I'm direct seeding - what effect will standing stubble have on the herbicides I want to use? Billett dealt with post-emergents and granules separately. Standing stubble intercepts about 30% of the spray, but so does a standing crop. There should be little if any effect of standing stubble on post-emergent herbicides. If stubble is flat and/or inadequately spread, that could pose a problem. Granules, on the other hand, are designed to work when in contact with the soil, not the trash. Pre-emergent wild oat herbicides such as Avadex BW and Treflan have been studied for efficiency in surface applications without incorporation. Avadex BW works fine that way; work with Treflan in showing some promise.

4. How do I control quackgrass and Canada Thistle? Quackgrass benefits from tillage, so a direct seeding system will normally benefit your control over it. The newest recommendation is a Roundup pre-harvest application, only on flax. But, there's some potential for expanding that registration to other crops. By the way, don't be tempted by non-registered uses of Roundup - there are legal implications!

5. Is it true that I'll have more weed problems with direct seeding? Some research has been done by Doug Derkson of Agriculture Canada. Less tillage doesn't necessarily increase weed problems and any that may occur may also be temporary. Location, weather, weed spectrum and management all affect the scenario. So, will I spray more or less? It depends on management!

Economics Presentation: Glue It All Together

By: James Lokken
Conservation Specialist

The last presentation of the 1992 SSCA conference was approaching and the hall was still full. Were all those farmers waiting to hear Roy Button speak about "Economics, the Glue That Holds It All Together"? Or were they just waiting for the announcement of the fishing trip winner?

Many were waiting for the economics session. Experienced conservation farmers wanted to compare the cost and yield figures from their own farms with Roy Button's numbers. Another, larger group of "curious" farmers had come to the conference hoping to hear that there was a dollar to be made or saved with direct seeding. This was the session that should lay it out in black and white.

Chairman Marv Fenrich introduces panel members (l to r) John Harapiak (Westco Fertilizers), Doug Billett (Sask. Ag and Food) and Roy Button (Sask. Rural Development).

However, Roy Button, Soils and Crops Agrologist with Saskatchewan Rural Development in Tisdale, started off by warning that it does "no good to stand up here and talk about costs unless you can evaluate these on your own farm. The variations in cost ... are probably much greater between two neighbours than they are whether you are in a zero-till or a direct seeding or a conventional tillage system."

Later he emphasized again that "the only good costs are your own costs and you will not know those until the pencil hits the paper". He also stated that the greatest economic advantage of direct seeding and reduced tillage lies in the potential for increased yields, not in reduction of costs.

With this advice, Button led the audience through the stubble crop cost of production estimates in his Conservation Tillage Crop Planning Guide. This worksheet compares costs of conventional, reduced and zero tillage systems.* It also calculates break even yields (yields required to cover costs) and provides research information on potential yields under each system.

Costs - Costs of production vary throughout Saskatchewan. In his presentation, Button examined the costs of stubble cropping wheat in the thin black soil zone. He noted that costs probably increase as one goes north and decrease as one moves south. Button suggested that the four areas where major differences in cost between tillage systems are likely to be found are:

1. weed control chemical costs
2. fuel and repairs
4. costs of labour
3. costs of owning machinery

1. Weed control chemical costs -- Reduced tillage weed control costs, for stubble wheat may increase up to $5.00 per acre over conventional weed control costs, depending on whether a farmer fall sprays 2,4-D and uses pre-seeding glyphosate in some years. Under zero-till, increased herbicide costs of $7.50 per acre arise from annual applications of fall 2,4-4 and pre-seeding glyphosate.

* For stubble crops reduced tillage refers to direct seeding into stubble with enough soil disturbance that a preseeding herbicide treatment is not required. Zero tillage refers to seeding with a direct seeding drill into stubble, follwoing an application of glyphate.

2. Fuel - Reduced or zero tillage could reduce tractor fuel costs as much as one half, or about $3.00 per seeded acre.
Repairs - Repair costs could decrease up to $2.00 per acre under reduced or, especially, zero tillage because of fewer machine hours (as little as half the tractor hours as under conventional tillage).

(continued on page 10)

Fertilizer Expert Addresses Direct Seeding Conference

By: Bob Linnell
S.E. Conservationist

John Harapiak, a noted fertilizer expert with Westco Fertilizers for the past 30 years, addressed more than 600 producers at the annual SSCA conference, Feb 10-11 in Prince Albert.

Harapiak considered several components relating to fertilizer and its placement when direct seeding. He stated that a producer must plan ahead for direct seeding, especially when it comes to the application of phosphate. Crops in heavier trash conditions tend to require slightly more phosphate nutrients for the first year or two, to compensate for the cooler temperatures of the soil at time of seeding.

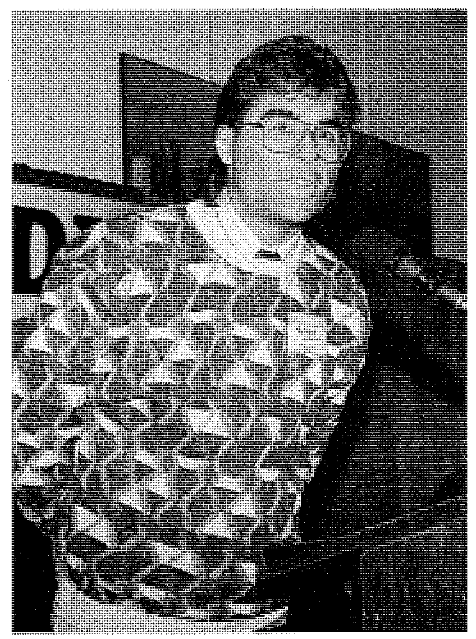
He also presented data to show experience gained in the early days of deep banding. Deeper placement was not found to be necessarily better in spring placement situations.

Harapiak cautioned producers to be careful about both nitrogen and phosphate quantities placed with the seed, in direct seeding situations. Large amounts of nutrients placed with the seed can have a detrimental affect on the germination of crops. Recognized limits for in-row placement of nutrients are reflected in the row spacing design of many seeding machines.

Harapiak noted the growing trend in the use of air seeders and quoted figures in the mid 20 percent for the larger soil zones in Saskatchewan. He also noted that a lot of producers were using the air seeder as a technique to move from conventional tillage to direct seeding.

In summarizing his remarks, Harapiak noted a number of factors that a producer should consider in the placement of fertilizer in a direct seeding situation:

1. Soil type -- if the soil is heavier, you may apply more of some nutrients with the seed.
2. Organic matter content of your soil --less flexibility of quantities applied with the seed on eroded knolls and high free lime areas.
3. Equipment --row spacing affects the seed bed percentage in use and this limits the amount of nutrient that can be placed with the seed. This even applies to discer seeders and some air seeders.
4. Saline areas and high lime areas.
5. Potash may have to be considered if the producer is in a continuous cereal rotation pattern, because of possible disease incidence.
6. Sulphur can usually be placed without restrictions, but amounts must be controlled if the elemental form is used.
7. Timing of fertilizer application can affect such things as protein content of wheat and acceptance of barley for malting.



Michael Splinter, Farm Woodlot Association

By: Yvette Crane
SSCA Soil Conservation Educator

More than his name qualifies Michael Splinter to speak on behalf of the Farm Woodlot Association of Saskatchewan. At the SSCA conference in Prince Albert, Mr. Splinter gave a very clear presentation explaining how the Farm Woodlot Association can help rural landowners. He also discussed some of the links between woodlot management and soil conservation.

At first glance, forests and farmland might seem to be in competition in Saskatchewan. An estimated seven million acres of former forested land is now being cultivated or grazed, and the best land for growing trees also happens to be the best agricultural land in the province. But Mr. Splinter showed conference registrants that there are a number of ways in which the two land uses are compatible.

Woodlot development can benefit landowners in four major ways. Trees can be harvested and sold as firewood or to the wood industry. They also provide both an aesthetic benefit and a more diverse wildlife habitat. Trees and bush act as wind barriers and trap moisture, both of which are vital to soil conservation efforts. All of these add up to an excellent argument for leaving or planting bush and trees on farmland.

Mr. Splinter went on to explain that assistance is available from the Farm Woodlot Association to help producers develop a management plan for their woodlots. The association also provides a library and extension services out of their Prince Albert office. Other programs which are available include PFRA's Permanent Cover Program and incentive money from Forestry Canada which pays some of the costs of planting and thinning trees.

Whether it's done for aesthetics, wildlife enhancement, economic return or soil conservation, it is certainly worth considering and taking advantage of the help available to preserve or plant trees on your farm.

Jim Johnson, Forestry Canada

By: Junita Polegi
E.C. Conservationist

Maple syrup produced in Saskatchewan? Tree nuts grown in Saskatchewan orchards? Impossible you say? Not according to Jim Johnston of Forestry Canada in Prince Albert. At the recent SSCA Conference, Johnston addressed the delegates on the topic of Alternative Uses for Shelterbelts.

To be accepted by a farmer, a field shelterbelt must produce positive effects for the farm in both the short and long term, Johnston says. If the belt doesn't benefit the farmers pocket book, it's not likely to be planted.

Traditionally field shelterbelts have been planted either to reduce soil erosion by wind or to enhance wildlife habitat. Enhancing habitat for wildlife is an intangible benefit while reducing soil erosion produces more tangible benefits. Johnston cited research from the PFRA Shelterbelt Centre at Indian Head indicating that the net crop yields can increase as much as 3% to 7% up to 20 times the height of the trees in a belt. Johnston also used the example of farmer Harvey Gjesdal of Birch Hills who found a 21% increase in crop yield on a field protected by trees with only 4% of the land taken out of production.

Johnston went on to suggest that adding value to the land by planting forest belts, especially in Saskatchewan's parklands, may soon become a third reason for planting field shelterbelts. While grain cropping would constitute the major form of revenue from an acre of cultivated land, the by-products from a forest belt would be an added bonus. The forest belt would require management to enhance maximum crop yield and by-product production.

Johnston foresees forest belts meeting with favour from a variety of sources, including the local banker. He says "Bankers can relate to an increase in crop yields". They also like things that increase the value of land. As an example, suppose a farmer planted a couple of forest belts this spring and then sold the farm 3 years from now. In another 10 or more years, depending on the species, the trees planted in 1992 will be mature. They become valuable assets to the land.

According to Johnston, there are a number of forest crop related products that could be harvested from forest belts. These include Christmas trees, maple syrup, berries and possibly nuts (from the Siberian Pines).

Johnston believes that the Agro Forestry concept can grow if it remains producer-based and producer-driven. Once more farmers realize that trees do more than "get in the way" on their farm, forest belts will gain in popularity. If such is the case, a stack of hot pancakes swimming in a sea of Saskatchewan maple syrup or a bottle of beer served with Saskatchewan nuts during Happy Hour may not seem so absurd after all.

By: Nancy Fraser
Conservation specialist

Larry Koturbash, Ducks Unlimited

Everyone dreams of letting the grass grow under foot when they retire. Larry Koturbash realized that dream working on contract for Ducks Unlimited at the Quill Lakes Project. He oversees converting land to permanent cover for duck nesting habitat. He offered some advise and first hand experience in direct seeding of forages at the 1992 SSCA conference in Prince Albert.

Most of the land Koturbash works with is in poor shape. It is usually rough, weedy, prone to erosion, or just a sandbox. "It is less than ideal but we have to find a way to get this land into grass", says Koturbash. "Our other constraint is that most of this land is under a 10 year lease so we don't have the luxury of time to get it cleaned up before seeding forages".

Koturbash has four rules he follows for succesful forage seeding.

- Seed shallow into firm moist soil.
- Protect the seedlings from wind and heat action.
- Protect the soil surface from wind and water erosion.
- Minimize competition from weeds, companion crops and pests.

Since most of the land he deals with is weedy, subject to erosion and has varying residue conditions, Koturbash has opted for direct seeding. Direct seeding into standing stubble offers ideal conditions for forage establishment according to Koturbash's principles of forage establishment. The seedbed is firm, there is soil moisture, the soil surface is stabilized and the stubble offers protection to the seedlings.

"The challenge with seeding directly into standing stubble is getting the seed into the ground and controlling weed growth," advises Koturbash. "There is also the added factor of residue which makes seed placement more difficult than on black summerfallow."

Seeding too deep is the single biggest reason for failure of forage seedings. "Its like a booster rocket on the space shuttle," says Koturbash. "You need enough fuel to get into orbit. If you don't have enough fuel it will crash. A forage seed is small, it doesn't have a big booster rocket. If placed too deeply it doesn't have enough energy to get the seed up to the stage where it can look after itself."

Koturbash compared two types of seeding implement. "Disc type openers equipped with bands or gauge wheels to control seeding depth gives the most accurate placement. There is a limit to the amount of residue they can handle though. Standing stubble is no problem, but straw lying on the ground or the chaff that is left behind the combine has to be managed."

The alternative is a hoe type opener. "They can get under the residue and give good seed to soil contact, but controlling depth of seeding is a problem," cautions Koturbash. "You have to look for an implement with individual row depth control so you don't seed too deeply."

Finally, Koturbash has found that you need to approach weed control differently. "The best is to try and clean up weeds through your annual crop rotation before you attempt forage seeding," advises Koturbash. "Because this is not always possible we look at controlling winter annuals first with 2,4-D in the fall or early spring and then we do a preseeding burn off with glyphosate and then we follow up with either mowing or in-crop weed control."

"A dense stand of tall grass with a dense understory is what we are looking for from our forage seedings", concludes Koturbash. "When the ducks come back in the spring they have nesting cover to protect them from predators and they can hatch their young successfully."

The Direct Seeding Bug has taken hold in the East Central Region. All districts in the region will be making available to their producers one or more pieces of equipment that will enable the producers to gain some experience with direct seeding. The types of equipment available range from Conserva Paks to Fexicoil 5000's to modified hoe press drills.

Further evidence of the interest in direct seeding was reflected in the large number of producers attending the Annual Meetings of the SSCA in Prince Albert and the ManDak Zero Till Association in Minot.

A series of radio ads that ran in early November generated many enquiries about shelterbelts. In 1991, over 200 miles of field shelterbelts were planted in this region through the SOS Program. We're anticipating at least another 200 miles of trees will be planted in 1992.

(continued on page 11)

SSCA [illegible] Annual Meeting Reports

Dwayne Beck of the Dakota Lakes Research Farm in South Dakota was conference's key note speaker.

By: Guy Chartier
SSCA Communications

"If you don't remember anything about what I've said here today, remember these three words, rotation, competition and sanitation."

That was the key-note speaker's advice to 650 farmers who attended the Direct Seeding Conference\SSCA Annual Meeting in Prince Albert, February 10-11, 1992.

In his address, Dr. Dwayne Beck, of the Dakota Lakes Research Farm in Pierre, South Dakota stressed the fact that before any farmers get into no-till direct seeding they should be prepared to change their management techniques and develop a system that is totally unique to their farming operation. Things that work on one farm may not work on an adjacent farm due to differences in equipment, soils, rotations and management skills of the operator.

Beck advised producers to think of no-till direct seeding as high technology sustainable agriculture that must be managed with good basic skills utilizing the management principles of rotations, competition and sanitation.

"All management aspects of no-till direct seeding must be put to use if you are to succeed and if all you do is take out tillage, and try to do everything else the same, you will fail," said Dr. Beck.

In dealing with rotations, Dr. Beck advised his audience that the basic considerations involved in rotational planning included water, weeds, insects, disease, timing, markets, profitability, equipment and adaptability. But, he also warned that although all of these factors were important, the one overriding factor that was most important for prairie farmers was water. No-till direct seeding provides more water than conventional systems. Consequently, it allows rotations which are more intense than those now used.

To maximize the ability of the crop to compete successfully for survival with weeds, disease and insects, Dr. Beck advised his audience to increase seeding rates. Placing starter fertilizers with or near the seeds and doing little or no disturbance while seeding benefit the crop and allow it to be more competitive.

He warned that farmers who let their weeds go to seed after harvest will have sanitation problems which could be prevented with better management practices. Precautions in the fall, such as using a little glyphosate, will save time and money when it comes to seeding in the spring. Anything that prevents the introduction of weed seeds, insects and disease into the field is included in this category. This involves several practices including using only weed-free seed, clean combines, mowing borders and waterways and spraying stubble before the weeds present go to seed.

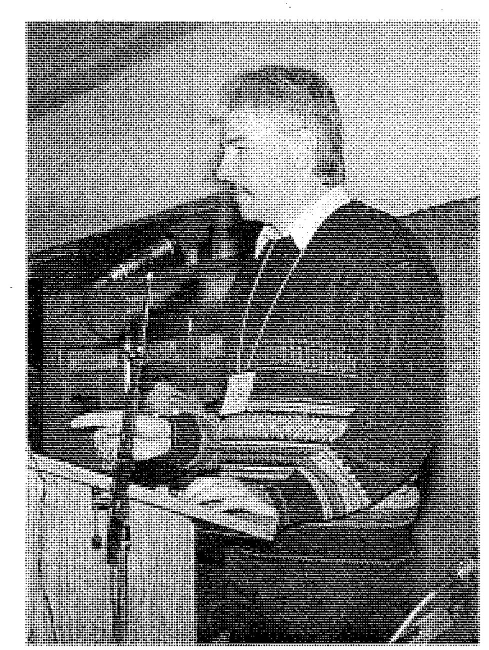
For farmers wanting more information on the concepts presented by Dr. Beck, a booklet titled **No-Till Guidelines For The Arid And SemiArid Prairies**, is presently being offered by the Manitoba North Dakota Zero Till Association or by contacting the Dakota Lakes Research Farm, P.O. Box 2, Pierre, South Dakota, USA 57501.

Garth Butcher, Shoal Lake, Man.

By: Blair McClinton
N.W. Conservationist

The move to direct seeding is a major step towards sustainable agriculture in western Canada according to a speaker panel at the SSCA annual meeting in Prince Albert. This panel of speakers from across western Canada included Garth Butcher from Shoal Lake, Manitoba, Guy LaFond from Indian Head, Sask. and Jack Dobb from Dawson Creek, B.C..

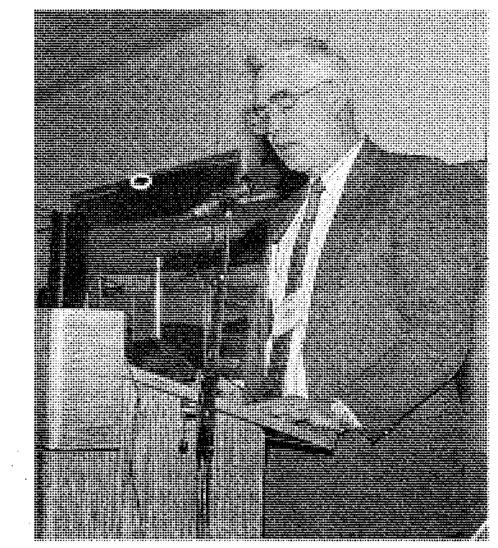
There is a great deal of interest in converting to direct seeding. Butcher credited research and demonstration projects with generating much of this interest. Districts have used programs like Save Our Soils to get the equipment needed to demonstrate direct seeding. Information collected through these research and demonstration projects is being used to evaluate and promote direct seeding.



Dr. Guy Lafond, Indian Head, Sask.

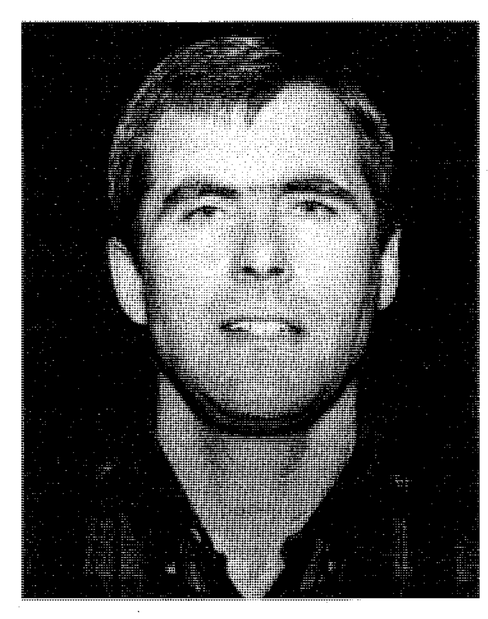
"There are more advantages to zero tillage" than to high disturbance types of direct seeding, according to Butcher. High disturbance systems have too many compromises.

"Direct seeding is the logical crop production choice" according to Guy LaFond. Currently there are problems with wind and water erosion, and organic matter loss. Direct seeding has the most potential to conserve soil and water resources without compromising economic viability. Direct seeding has proven to be an effective erosion control practice according to Jack Dobb. Dobb also listed higher soil organic matter levels, lower penetration resistance (softer soils), higher infiltration rates and higher soil moisture levels as other benefits of direct seeding. Guy LaFond said, "direct seeding has the ability to take full advantage of crop residues".



Jack Dobb, Dawson Creek, B.C.

Understanding the components of direct seeding systems is important according to Lafond. We need to understand equipment needs, rotations, weed control, residue management and fertility. More long term research is needed to evaluate these components.



Garry Meier, North East SSCA Soil Conservationist.

By: Garry Meier
N.E. Conservationist

This was the question that was uppermost in the minds of many of the registrants at the SSCA Annual Meeting and seminar held in Prince Albert, February 10 & 11, 1992.

Most of the seminar's participants were in agreement that the farming systems their forefathers used and passed onto them, would not allow them to pass on farmland base to their successors in as good a condition as they had received it. These producers were ready for a change but were unsure how to change, or if in fact they could financially afford change.

Producers came to Prince Albert looking for input into their decision making process. Seminar registrants had the opportunity to hear from several farmers who had made the transition from conventional seeding systems to systems that require one pass in the spring to plant a crop. Farmer panels and professional speakers outlined to the seminar the problems and pitfalls that early "direct seeders" experienced, ranging from weed control to residue management, fertilizer placement and crop rotation. The panel members also passed on reasons for selecting the seeding implements that they were comfortable with and are currently using.

The trade show offered many cost effective modifications that a producer could utilize to modify his current seeding implement to make it into a direct seeding implement. Seminar participants were told that an average of 10% yield increase could be achieved by direct seeding in all crops, due to the better soil moisture conservation offered by a direct seeding system.

The seminar was also told that there are four cost areas that will dramatically affect a farm's profitability with a move to a direct seeding system. They are labour, fuel, weed control and machinery costs. These costs will vary from farm to farm, but on average the sum of costs under a direct seeding system will be about equal to a conventional system, using today's technology.

Is direct seeding the path to profit? Farmers can expect about a 10 per cent yield increase under a direct seeding system. Given today's commodity prices, is this enough to pay for an investment in new seeding implements? Producers left this seminar with a lot of information to help them answer this question. However, the decision is still theirs' to make.

Hi! This is a new section for young Prairie Steward readers.

In the **Soil Smart** section, you'll find puzzles, pictures to colour, games, things to try, and much more, all related to farming and soil conservation.

Write to us! Send us your letters, stories, poems, puzzles, jokes, riddles and drawings about your farm and what your family does to conserve soil.

We will print as many of our young conservationists' submissions as we can **and** . . .

You could win a **PRIZE!**

Send your submissions to:

Soil Smart
SSCA
Room 132
3085 Albert Street
Regina, Sask.
S4S 0B1

Just For Fun Prairie Expressions

Can you match the word on the left with its definition on the right? See if you can find an adult who knows these!

Spits	Sidestepping manure in the barnyard
Barnyard polka	Horse
Whisky Jack	Sky
Road allowance	Canada Jay
Hay burner	Strip of land between sections
Big blue bin	Sunflower seeds

Adapted from material by Saskatchewan Education and the Western Development Museum, Saskatoon

People who read this newsletter are interested in soil conservation.

We need soil to grow the food we eat. If we don't take good care of our soil, it can be **eroded** - blown away by the wind or washed away by rain.

What are you doing on your farm to help save your soil?

How much do you know about soil conservation?

Try and find the ten soil conservation words hidden in this word search and find out if you're **Soil Smart!**

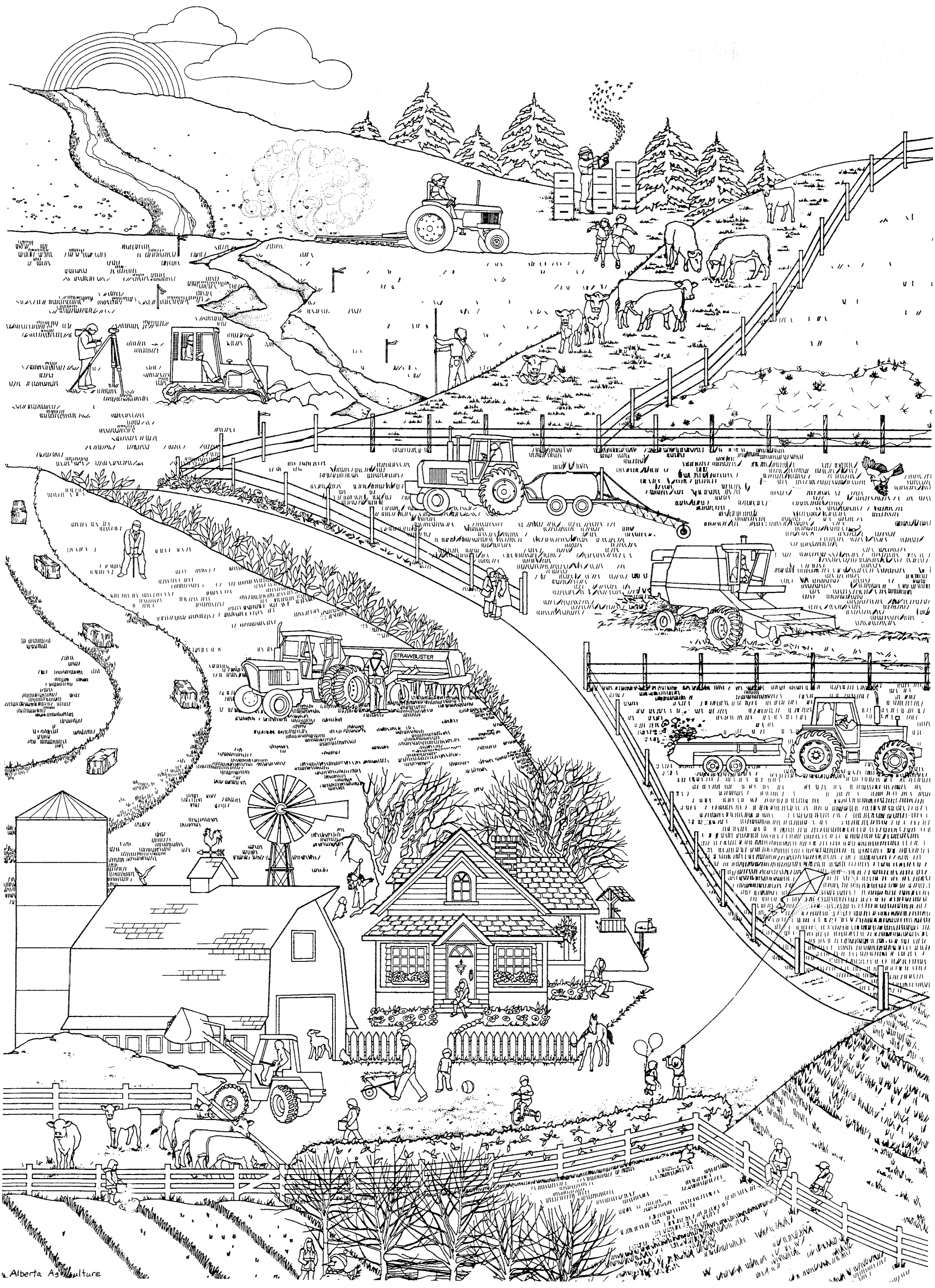
Soil Conservation Word Search

Soil Conservation Word Search

s	a	r	a	i	n	s	w	c	c	f	a
t	a	w	a	b	s	t	u	i	o	o	x
n	y	v	z	w	s	o	c	s	n	o	f
a	p	l	e	m	f	c	f	f	s	d	w
l	g	h	r	o	m	l	n	o	e	p	e
p	w	f	o	e	u	f	s	p	r	e	t
h	f	k	s	o	q	r	w	f	v	b	d
f	a	j	i	l	o	p	s	a	a	r	s
v	r	x	o	z	y	s	w	o	t	b	a
n	m	o	n	l	a	u	e	f	i	e	g
h	k	s	o	i	l	u	v	c	o	l	r
d	f	i	m	o	q	r	e	w	n	q	s

save our soils
plants
farm
erosion
soil

rain
wind
conservation
food
water


STRAWBUSTER
© Alberta Agriculture

Farmers Helping Farmers

IF YOU HAVE DIRECT SEEDING EXPERIENCE AND WOULD LIKE TO SHARE YOUR KNOWLEDGE, PLEASE READ THE FOLLOWING AND PARTICIPATE IN THIS ONE-ON-ONE INFORMATION VENTURE:

Are you willing to share your direct seeding experience with other Saskatchewan farmers? If you are, please fill in the attached clip coupon and mail it into the SSCA. Your name and phone number will be published in future issues of the Prairie Steward. Farmers seeking information on direct seeding will have the opportunity to benefit from your experiences.

✂ ---------- ✂ ---------- ✂ ---------- ✂ ---------- ✂

(Please print)

NAME: _____

ADDRESS: _____

PHONE: _____

SOIL

ZONE: _____

TYPE OF

SOIL: _____

TEXTURE OF

SOIL: _____

CROPS

GROWN: _____

SEEDING EQUIPMENT: _____

COMMENTS: _____

The following are member producers who have volunteered to share their direct seeding knowledge.

North West:
Dwayne Mitchell
Box 840
Battleford, Sk.
S0M 0E0 Ph. (306) 937 3239

West Central:
Bob Siemeus
Box 53
Fiske, Sk.
S0L 1C0 Ph. (306) 377 4786

East Central:
Ross Reynolds
Box 400
Lanigan, Sk.
S0K 2M0 Ph. (306) 365 2591

Rob McGregor
Box 234
Foam Lake, Sk.
S0A 1A0 Ph. (306) 675 4825

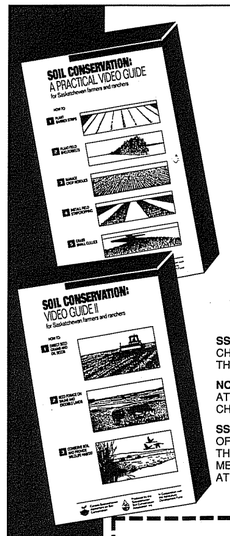
SSCA/Monsanto Membership Enhancement Program For NEW Members Only

$50 $50 $50 $50

With this coupon **Monsanto** will contribute $50 toward the cost of your 3 year membership to the Saskatchewan Soil Conservation Association. (3 year membership value is $100)

*Limited time offer. Valid for the first 600 new members. Valid until December 31, 1994

A recent membership incentive program announced by Monsanto and the SSCA seems to have caused a little confusion among a few SSCA members. The program offers 3 year memberships for $50, with Monsanto contributing another $50 towards the cost of the membership. What some members don't realize, is that the advertisement reads that this program is available to **NEW SSCA MEMBERS** and does not affect existing membership. The idea behind the program is to recruit new people to the Association and SSCA is pleased that Monsanto has provided this incentive. Members at this time are reminded that the **SSCA Membership Enhancement Program** is still being offered. Members who recruit 6 new members in one year will receive an additional 3 year membership as a bonus. So use the Monsanto coupon and start recruiting new members so that you may qualify for your three year membership bonus. For more information on membership, contact the SSCA office in Regina at (306) 787-0558 or your regional soil conservationist.



CAN YOU AFFORD NOT TO PRACTICE CONSERVATION?

The Saskatchewan Soil Conservation Association (SSCA) presents

Soil Conservation: A Practical Video Guide How To:

- Plant Barrier Strips
- Plant Field Shelterbelts
- Manage Crop Residues
- Install Field Stripcropping
- Grass Small Gullies

Soil Conservation: Video Guide II How To:

- Direct Seed Grains and Oil Seeds
- Seed Forage on Saline and Erodible Lands
- Conserve Soil and Provide Wildlife Habitat

SSCA MEMBERS: THESE VIDEOS ARE AVAILABLE FREE OF CHARGE TO SSCA MEMBERS BY CONTACTING THE SSCA AT THE ADDRESS LISTED BELOW.

NON-MEMBERS: FOR BOTH VIDEOS, SIMPLY CLIP OUT THE ATTACHED COUPON AND MAIL IT IN TO THE SSCA WITH A CHEQUE FOR $15. (SINGLE VIDEO $10.)

SSCA MEMBERSHIP: A THREE YEAR MEMBERSHIP IS BEING OFFERED FOR HALF THE REGULAR PRICE BY MONSANTO AND THE SSCA. FOR MORE INFORMATION ON THE VIDEOS OR THE MEMBERSHIP INCENTIVE PROGRAM, WRITE OR CALL THE SSCA AT **(306) 787-0558.**

CLIP COUPON

PLEASE SEND:

☐ **A Practical Video Guide** ☐ **Video Guide II**

☐ **BOTH** for the Price of $15. (no charge for SSCA members)

Please send information on ☐ **Membership Incentive Program**

Name: _____

Address: _____

Town: _____ **Prov.** _____

Postal Code: _____ **Phone:** _____

Clip and Return To: SASKATCHEWAN SOIL CONSERVATION ASSOCIATION In co-operation with the Agriculture Development Fund

#132-3085 Albert Street
Regina, Sask. S4S 0B1
Phone: 787-0558
Fax: 787-0551

Are You Proud To Be A Soil Conservationist?

Let everyone know with a personalized gate sign. The 20"x20" - 16 gauge metal sign would cost only $22.00 each (+ taxes) on an order of 100 signs. **Do you have a suggestion for a design? If we choose your design, you'll win a free sign!**

✂ ---------- ✂ ---------- ✂ ---------- ✂ ---------- ✂

Yes, I would be interested in a gate sign.

Name: _____

Address: _____

Town: _____

Postal code: _____

Ph: _____

Return to:
SSCA
132, Walter Scott Bldg.
3085 Albert St.
Regina, Sk.
S4S 0B1

Fall Weed Control For Soil Conservation Makes $ense

Did you know Roundup is now registered as a pre-harvest treatment on wheat, barley, peas, lentils, canola and flax.

For more information, please contact your Monsanto representative or your Extention Agrologist.

Request For Submissions

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. Pertinent photographs would be appreciated Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert St.
Regina, Sask.
S4S 0B1

Recycled Paper

Prairie Steward . . .

Conserving the Land Resource

The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Summer Issue No. 7, 1992

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SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
in co-operation with the Agriculture Development Fund

In This Issue:

Election Of SSCA Board of Directors For 1993 - 1994

Is the conservation of Saskatchewan's soil important to you and your family? If so, here is an opportunity to lead and direct the conservation efforts of the Saskatchewan Soil Conservation Association (SSCA).

Nominations are open for several positions on the SSCA Board of Directors. All nominees should possess a keen interest in, knowledge of and commitment to the conservation of our province's land resources and an appreciation of the role of the SSCA in accomplishing this task.

1. 1992-1993 President Elect. This is a one year position on the Executive of the SSCA Board followed automatically by one year as President of SSCA and then one year as Past President - in total three years of commitment.

2. 1992-1994 Regional Directors. Regional Directors are required in these regions: North East, West Central, and South East. To be nominated as a Regional Director you must be a producer and a full member of SSCA. Regional Directors' terms of office are two years.

3. 1992-1994 Director-at-Large. This newly-created position is open to any member of the SSCA regardless of membership level. The term of office for the Director-at-Large is two years.

SSCA Board Member Responsibilities

The Saskatchewan Soil Conservation Association Inc., is a non-profit, charitable corporation directed by a Board of nine Directors elected by the members of the Association. The Directors' mandate is to ensure that the SSCA is managed to encourage soil conservation within Saskatchewan, to meet the needs of the membership and to enhance the viability of the Association.

The Board of Directors establishes objectives and policies, approves major financial transactions, provides input to government representatives on conservation, agriculture and the environment, and promotes the need for soil and other conservation within Saskatchewan.

If you are interested in becoming a member of the SSCA'S Board of Directors, or want additional information, please contact any member of the SSCA Board or staff. Their names and phone numbers are listed on page 2 of this newsletter.

The deadline for nominations for all positions is September 30th, 1992.

Riparian Areas: An Undervalued Saskatchewan Resource

All of us have seen or used riparian areas. Very few of us are aware of what they are or their value to Saskatchewan.

Riparian areas are the lushly vegetated zones found in coulees and alongside rivers, creeks, lakes and potholes throughout Saskatchewan. We use them for picnicking and other recreational activities. We graze our cattle in them. We depend on them as part of the water cycle. However, most of us are not conscious of the need to maintain them in a healthy condition.

A new booklet and display have been developed to explain what riparian areas are and what we can do to preserve and maintain them. The new material shows the variety of riparian areas in Saskatchewan and describes the benefits of keeping them healthy. The booklet, **Riparian Areas: An Undervalued Saskatchewan Resource,** is available from SSCA and PFRA offices, Rural Service Centres and Wildlife Branch offices. The display, which is suitable for fairs and meetings, can be booked free of charge through the Regina SSCA office (306) 787-0558 or through the Regina PFRA office (306) 789-6832.

New booklet on Riparian Areas.

Myths, Truths & Outright Lies About Soil Conservation

By: Bob Linnell
SSCA S.E. Regional Soil Conservationist

Read the following statements. Decide for yourself if they are true or false, or if you really don't know, but think you have heard them before:

1. Soil conservation only works in the dry years!
2. You can't learn anything from your neighbors!
3. You have to summerfallow four times to even get a crop, and for each additional time you work the land, you get five bushels more per acre!
4. Field shelterbelts cause water erosion and salinity!
5. The "North" doesn't have to worry about soil conservation!
6. All farmers destroy wildlife habitat!

* Answers on page 10.

Fast Facts On Soil Conservation

SSCA FACT SHEET January, 1991.

Erosion

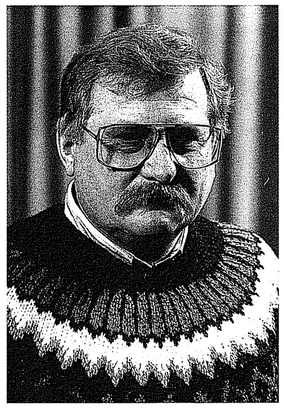
- Removing 2" to 4" of topsoil permanently reduces a field's yield potential by 20 % to 30 %.
- With 8" of topsoil gone, fields can lose up to 70 % of former productivity. Many Saskatchewan soils do not have 8" of topsoil to lose.
- Research has shown that unprotected fields can lose 1.5" of topsoil in a single windstorm.
- As a general rule, on the prairies, new topsoil FORMS at the rate of about 3 to 5 tonnes per acre (1/30" to 1/16") per year.
- Soil organic matter gives soil its structure, holds moisture and is the source of key plant nutrients.
- It took prairie soils some 10,000 years to form and build a reserve of organic matter, yet in less than 100 years of farming nearly half of the original organic content has been lost.

Salinity

- As of 1987 an estimated 5 million acres were affected by salinity on the prairies (Man., Sask., Alta.)
- The effects of salinity are estimated to be increasing at a rate of up to 10 % per year.

Association Information

President's Message



Dave Bueckert
SSCA President

With seeding over for another year, we at the Bueckert farm, like the rest of you, are hoping for just the right combination of rain and sun to ensure a good harvest.

We're also continuing our year-round efforts to conserve and improve our soil for future years. The soil conservation TipKit, produced under the federal provincial agreement on soil conservation, is a handy guide. It's filled with suggestions as to what we all should be doing throughout the summer and fall months to conserve soil.

Speaking of seeding and soil conservation, please keep **June 15th, 1993** free. **Make plans to attend the Soil Conservation Field Day and Direct Seeding Demonstration** at the Moose Jaw airport. I'll have more details in the next Prairie Steward.

Over the summer months, many of the districts will be holding field days to demonstrate direct seeding and other conservation ideas. I encourage you to attend these field days and see how these methods would fit into your farming operation. Your best bet is to get in touch with your regional soil conservationist to find out what is going on in your area. Their names and phone numbers are listed on the bottom of this page.

SOS Program

The Save Our Soils program has certainly been a success over the last three years. Unfortunately the funding for the program runs out at the end of March, 1993. The SOS program has attracted top notch staff and they'll be missed, if the SOS program is discontinued.

The SSCA is working on a proposal to ensure that some of the soil conservation programs remain viable. The programs may change slightly or be handled in a different manner. We are looking to the Green Plan for funding. However, it is too early to tell what will happen with this proposal.

One spot of good news is that the shelterbelt program will continue as it has in the past. To add support to this worthwhile program, the SSCA has recently hired a Shelterbelt Information Officer. Chris Zabek will be a valuable asset to our organization and anyone else wishing information on shelterbelts. The future of the SOS program is very important as it is aimed directly at producers. Hopefully funding can be found to continue the SOS program or a successor program which will deal directly with farmers.

Annual Meeting

The 1993 SSCA Annual Meeting and conference promises to be another winner. **"Direct Seeding: Making it work in the drier soil zones"** is the theme of this year's conference. It will be held in Moose Jaw, in early February, 1993. The cost of registration will be kept to a minimum, so I hope you will participate in this year's conference and annual meeting. The attendance at last year's conference was fantastic!

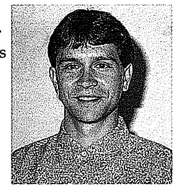
Elections

Nominations are required for directors in the following regions. North East, West Central, South East, and for President-Elect. The nomination deadline is September 30th, 1992. Please use this opportunity to exercise your rights and responsibilities as a member of the SSCA. Your involvement makes for a stronger organization which will benefit all members.

I hope to see many of you at various field days and functions over the summer months. Please come up and introduce yourself, if I don't recognize you. It's important that SSCA members get to know each other. Have a safe and happy summer!

Central SSCA Staffing Changes

We are pleased to announce that Ray Kettenbach has joined SSCA's Regina staff as the Communications Specialist. Before joining the SSCA, Ray was involved with the production of videos and weekly agriculture television programs at Ag-Com Productions. He is actively involved in a farming operation near Rockyford, Alberta. Ray replaced Guy Chartier on May 1st. Guy has moved over to the PFRA. We wish him all the best in the future!



We are pleased to announce that Chris Zabek has joined SSCA's Regina staff as the Shelterbelt Information Officer as of June 1st. Chris is originally from Smeaton, Sk. and is a recent graduate of the University of Saskatchewan. Chris previously worked on shelterbelts and the effect of herbicides on them for a leading chemical company. Chris replaces Howard Fox, who returned to the PFRA Shelterbelt Centre at Indian Head, in January.

Nancy Fraser, the SSCA's Range and Forage Specialist, will be leaving us at the end of June. Nancy and family are moving to Victoria, B.C. Nancy's expertise in her field and as one of the original SSCA employees will be missed. Good luck and best wishes!

Bumper Crop For SSCA Regional Staff

SSCA Regional staff in the Central Regions brought spring in on a fine note. Congratulations and best wishes to Juanita and Allan Polegi (East Central) on the birth of a son, Murray, on April 17th. Dave Struthers, of Yorkton, is looking after the East Central region for Juanita while she is on maternity leave. Best wishes are also extended to the Struthers family on the addition of a daughter, Sarah, on May 20th.

Congratulations are also extended to Garth and Carol Ann Patterson (West Central) on the birth of a son, Luke, on April 23rd. In related news, the SSCA's Soil Conservation Educator, Yvette Crane, is rumoured to be working on a special infant education soil conservation kit for these new members of the SSCA.

Info Update

Membership Incentive

If you've been considering a membership in the SSCA, now is the time to join! Take advantage of the Monsanto membership incentive. Over 300 farmers have already taken part and that means there's less then 300 spots left. Don't delay, call today! See page 12 for more information.

Video Update

The popularity of the SSCA's video series is growing. To date over 1000 copies of video I and 1100 copies of video II have been distributed. Your membership entitles you to a free set of videos. See page 12 for more information.

Coming Events

1992

June 23rd
ManDak Zero Till field day at Minto, Mb. For more information contact: Andrew Hargrave (204) 776 2087

June 23 & 24th
Interprovincial Grassland Seminar and Tour, Lloydminster, Sk. For more information contact: Howie Bjore (306) 825 6470

June 23 & 24th
South East Regional Tour of U.S. Compliance Programs. For more information contact: Bob Linnell (306) 848 2381

June 24th
District # 22 ADD Board Tour to local SOS projects in the Saskatoon area. For more information contact: Garth Patterson (306) 933 5287

Early July
District # 40 ADD (Rosetown) Board tour of Brooks, and Lethbridge, Ab. Agriculture Canada Research Stations. For more information contact: Garth Patterson (306) 933 5287

July
District # 24 ADD Board Tour of local SOS projects in the Kerrobert area. For more information contact: Garth Patterson (306) 933 5287

July
Regional Conservation Team tour of SOS Projects in the Saskatoon, Davidson and Outlook, Sk. districts. For more information contact: Garth Patterson (306) 933 5287

July 10th
Crop Research Tour at the U of S, Agriculture Canada and Monsanto Farms in Saskatoon, Sk. For more information contact: Garth Patterson (306) 933 5287

July 13th
District # 16 ADD Board tour of conservation and diversification projects in the Outlook, Sk. area For more information contact: Garth Patterson (306) 933 5287

Mid July
District 28 SOS tours. For more information contact: Garry Meier (306) 873 4290

Mid July
District 31 SOS tour featuring Conservapak seeding. For more information contact: Garry Meier (306) 873 4290

July 17th
North West Regional Conservation Team Tour. For more Information contact: Blair McClinton (306) 446 7650

July 21st
Zero Tillage Field Day at the Indian Head Experimental Farm, Indian Head, Sk. For more information: call Rural Service Centre (306) 695 2263

July 22nd
Scott Experimental Farm Field Day at Scott, Sk. For more information call: The Scott Experimental Farm (306) 247 2011

July 22nd
ACTS & Chinook Applied Research Association field day and tour at Oyen, Ab. For more information contact: Garth Verity (403) 664 3777

July 28th
Range and Forage tour with Biggar Forage Club, Biggar, Sk. For more information contact: Glenn Barclay (306) 948 2666

July 29th
Yellowhead Crop Production Tour near Lashburn, Sk. For more information contact: Howie Bjore (306) 825 6470

August 5th
District 29 ADD Board Tour in the Rostern, Sk. area. For more information contact: Leroy Bader (306) 232 5566

August 5-7th
Canadian Holistic Resource Management Annual Convention and Workshop at the Kananaskis Guest Ranch, Kananaskis, Ab. For more information contact: Patti Kerfoot (403) 932 4008

Early August
District 26 field day featuring harvesting, spraying, harrowing and seeding equipment demonstrations. For more information contact: Garry Meier (306) 873 4290

Early August
District 27 SOS tour featuring Flexicoil, Bourgault, and John Deere seeding. For more information contact: Garry Meier (306) 873 4290

September 30th
Nomination deadline for President Elect and Directors. For more information contact the SSCA central office (306) 787 0558

November 2-4th
"Erosion: Causes to Cures" short course and conference Regina, Sk. For more information contact: Ray Pentland, (306) 949 8288

November 28th to December 4th
Agribition, Regina, Sk. For more information call: (306) 565 0565

1993

January 17-20th
Interprovincial Range Management Conference, Saskatoon, Sk. For more information contact: Faisal Taha (306) 569 2663

February 8 & 9th
SSCA Annual meeting and Direct Seeding conference: Making it work in the drier soil zones. Moose Jaw, Sk. Check the Fall Prairie Steward for more information.

June 15th
Soil Conservation field day, Moose Jaw, Sk. Check the Fall Prairie Steward for more information.

TipKit Corner

This column presents only the highlights from the Soil Conservation TipKit. For more information consult your TipKit or your local conservationist.

June

- Fallow weed control - use a wide blade cultivator or herbicides
- Harvesting forages - leave unharvested strips to trap snow.
  - leave areas around sloughs or delay harvest until July to provide nesting cover for waterfowl and other birds.
- Shelterbelt maintenance - control weeds beside and within shelterbelt rows.
  - inspect trees for pest damage.
  - order trees for planting next year.
- Future planning - begin to plan for the planting of salt tolerant forages on saline areas.
- Prepare for seeding of annual barrier strips for erosion control and snow trapping.

July

- Seed annual barrier strips.
- Control timing and intensity of grazing on grazing lands. Protect water sources from livestock damage.
- Future Planning - plan harvest residue management
  - consider equipment needs for residue management.
  - consider snow trapping techniques such as trap strips, variable height swathing, straight combining.
  - prepare to seed annual cover crops for erosion control.

August

- Seed winter crops for cover on erosion prone fields.
- Complete shelterbelt weed control and determine replacement needs.
- Future planning - plan control of perennial weeds such as Canada Thistle and Quackgrass
  - plan forage establishment

September

- Prepare to control winter annual weeds with spraying operation.
- Manage harvest residue. Harrowing may be necessary to adequately spread residue.
- Avoid tillage operations. Leave stubble standing.
- Prepare land for next year's shelterbelts.

October

- Don't burn stubble. Burning increases the potential for wind and water erosion, and causes loss of nutrients.
- Estimate and evaluate residue levels in each field.
- Look at your equipment needs in terms of soil conservation.
- Begin soil testing to determine inputs for next spring.
- Maintain drainage systems to prevent spring flooding.

November

- Complete field records while information is fresh in your mind. Develop a soil management plan for your farm.
- Develop a soil management evaluation table. This will identify the effects of new practices on your total farming operation.
- Begin list of upcoming extension meetings of interest.

The **Soil Conservation TipKit** is produced under the Canada-Saskatchewan Agreement on Soil Conservation. It provides information on soil conservation practices in a monthly format, so producers can keep on top of their soil conservation efforts.

For your **free** copy of the **TipKit** write to:

TipKit
c/o Canada-Saskatchewan
Agreement on Soil Conservation
B33 - 3085 Albert Street
Regina, Sk.
S4S-0B1

The SSCA Is Pleased To Welcome The Following New Members:

"D" farm
Adams, Stewart
Aitchison, Harold
Anderson, Miles
Androsoff, Ivan
Assie, Andre
Barr, Dalton
Bateman, Carter
Beautiful Plain Farm
Belak, Randy
Bittner, Bryan
Blair Farms
Blais, Leo
Bock, Michael
Boyko, Al
Bratten, Milton
Breitkreitz, Byron
Brown, Ron
Buckler, Neil
Bull, Malcolm
Bunnemeyer, Henry
Burns, John
BWL Enterprises
Cameron, Doug
Campbell, Joe
Caplette, William
Cerkowniak, Darrel
Cherry, D. Dale
Cherrywood Farms Ltd.
Clark, Ives
Cockburn, Ken
Compton, Shawn
Couey, Lorrel
Couture, Marcel
Diamond F Farms Ltd.
Dick, Jim
Dietrich, Ron
Dmytkow, Edward
Eberle, Paul
Ehman, Dennis
Fast, Harold
Fehler, Rick
Fohr, Howard
Foisy, Richard
Forrest, Gail
Leroy
Birch Hills
Macrorie
Fir Mountain
Blaine Lake
St. Brieux
Moose Jaw
Wolseley
Yellow Grass
Wynyard
Abernethy
Drake
Delmas
Saskatoon
Canora
Cabri
Biggar
Outlook
Bengough
Bethune
Fulda
Wynyard
White City
Swift Current
Mortlach
Delmas
Saskatoon
Yorkton
Harris
Biggar
Turtleford
Darlingford
Beechy
Debden
Foam Lake
Lacadena
Moosomin
Nipawin
Davin
Craik
Spiritwood
Regina
Glasnevin
Cutknife
Maidstone
Fournier, Guy
Fowler, John W.
Gabruch, Heath
Gaucher, Larry
Gavelin, Ellis
Gellner, Larry
Geres, Peter
Germsheid, Garry
Giesecke, Rolf
Giroux, Henri
Gislason, Chris & Larry
Gronvold, Rollice
Groves, Arnold
Halland, David & Alison
Harris, Wayne
Hart, Wayne & Mary
Hartman, Lance
Haugen, W.D.
Head, Keith
Heinrich, Ray
Hermanson, Milo
Herperger, Ron
Hertlein, Wayne
Heuchert, Irvin
Hjelle, Walter
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Houser Farms Ltd.
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Katepwa Farms
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Kieper, Dale
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Koob, Louis & Aaron
Krein, Larry
Kuntz, Harvey
Labrecque, Ernest
Larsen, Lyle
LePage, Herve
LePoudre, Herve
Lidster, George
Kincaid
Arbourfield
North Battleford
Moose Jaw
McCord
Southey
Neilburg
Landis
Lebret
Montmartre
Foam Lake
Tisdale
Portreeve
Love
Southey
Regina
Flintoft
Rosetown
Nipawin
Davidson
Outlook
Atwater
Langenburg
Saskatoon
Brownlee
Avonlea
Unity
Hershel
Elbow
Bethune
Wiseton
Wilkie
Indian Head
Saskatoon
Radisson
Prince Albert
Zealandia
Meacham
Burstall
Assiniboia
Rosetown
Aylsham
Montmartre
Montmartre
White Fox
Liebrecht, Lloyd
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Mason, Glen
Massey, Eldon
Mastrachuk, Wayne
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McArthur, Bruce
McCarthy, R.J.
McCullough, Larry
McDonald, Alex
McGregor, Rob
McIntyre, Norman
McKechney, Gary
McKnight, Lawrence
McLane, Robert
Meents, JoAnne
Memory, Roy
Mensah, Frederick
Mergen, Dale
Miller, Glen
Moen, Brian
Mooney, R. Vaughan
Newhouse, Dave
Nolan, Garry
Olijnyk, W.F.
Olson, Kevin
Pankratz, Eric
Pavelich, Gene & Beverly
Pearse, Gord
Pearse, Norman
Peifer Bros.
Pickering, Glen
Range, James A.
Rankeillor, Robert
Rayner, Bryan
Reisner, Barry
Remmen, Ken
Riemer, Robert
Rivard, Maurice
Yorkton
Wilkie
Brock
Kamsack
Fiske
Silton
Davidson
Eston
Preeceville
Kenaston
Saskatoon
Tisdale
Gleichen, Ab.
Corning
Qu'Appelle
Turtleford
Foam Lake
Saskatoon
Bienfait
Regina
Liberty
Calgary, Ab.
Estevan
Regina
Limerick
Rockhaven
Stewart Valley
Star City
Hagen
Rouleau
Melville
Plenty
Foam Lake
Kenaston
Nipawin
Tisdale
Nipawin
Foam Lake
Turtleford
Lloydminster
Battleford
Limerick
Kenaston
White Fox
Prud'homme
Riviere, George
Rowswell, Kevin
Schroeder, Henry
Shivak, Lawrence
Sloboshan, Nick
Smith, Harold
Stanley, Derrek
Stilborn, Jim
Sunrise Farms Ltd.
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Thiessen, Dennis
Thornton, David
Tilk, Jeff
Toth, Merlin
Trapp, Douglas
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Tysdal, Keith
Vanderstoel, Simon
Wall, Barrie
Weber, Mark
Wedin, Ormond
Wegren, Stephen H.
Wharton, D. Richard
Whitecalf, Henry
Whiteside Farm Ltd.
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Wood, Dave
Wright, Lyle
Wurm, Gerald
Assiniboia
Cutknife
Dundurn
Stockholm
Vanscoy
White Fox
Tisdale
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Tuxford
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Wynyard
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Balcarres
Middle Lake
Allan
Briercrest
Pense
White Fox
Meota
Midale
Allan
Saskatoon
Gallivan
Flaxcombe
Wapella
Pense
Kerrobert
Bruno

We take this opportunity to thank the following new corporate supporting members:

DowElanco	Newmarket, Ont.
Ducks Unlimited	Winnipeg, Mb.
Monsanto	Saskatoon, Sk.

Sensing The Future - Detectspray Technology

By: Pat Flaten
SSCA S.W. Regional Soil Conservationist
& Reg Mount
District #2 SOS Technician

You must have read or heard about "Detectspray" by now. Detectspray is a revolutionary sprayer technology which has been developed in Australia. Now, we have it in Saskatchewan.

Kelly Johnson of Better Buy Agro Ltd., near Assiniboia, is one of the few people using it. He's using Detectspray as a way of expanding his custom applicator business.

How does it work? Special sensors, attached to a conventional spray system, will compare light reflected off green versus non-green surfaces. The sensor then generates a "spray" or "don't spray" instruction to the complementary nozzle. The green target is then hit by the herbicide.

What are the advantages? Potential benefits include:

- Reduction in the volume of herbicide needed per acre and, therefore, a reduction in herbicide cost
- Time savings due to fewer refill stops
- Lighter spraying units that can reduce soil compaction
- Less non-target spraying, thereby reducing potential environmental risks

What are Johnson's impressions? "Beyond original expectations!" Johnson went to Australia to see and operate a Detectspray last December. Johnson's sprayer is a newer version called Generation 4, which he believes provides better and faster detection. He's seen the technology detect single wild oat plants at the one leaf stage, although he wouldn't depend on that 100% of the time.

On his own farm, Johnson used the outfit for a pre-seeding application of Roundup at the 1/3 L/acre rate. It cost him 22¢/acre for the herbicide. That has impressed him enough to order a second machine.

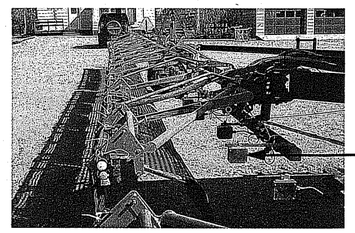
This summer, with his custom spraying business, he expects to cover 40 - 50,000 acres per machine and travel as far away as Manitoba. He can accomplish that by using the equipment over an extended season including:

- Pre-seeding application
- Crop spraying (continuous spray locked on)
- 1st and 2nd pass on chem fallow
- Desiccation of lentils and peas
- Late season pass on Canada Thistle and Quackgrass

In order to make the most of the Detectspray technology, Johnson has opted for some additional equipment such as:

- a Flexi-coil boom with windscreen
- Tylor Patriot drive system

If this technology works as well as we have heard, soil conservation efforts can only benefit. You will want to keep an eye open for local field demonstrations to "check it out".



Detectspray spray boom

Answers to Myths, Truths and Outright Lies

From page 1.

1. ***Myth!*** *- Soil conservation works every year. In properly managed fields, no evidence of erosion appears whether the conditions are wet or dry. Certain practices, such as wide blade tillage, tend to work better under normal field conditions than very wet situations.*

2. ***Outright lie!*** *- You can always learn from your neighbors, even if they make mistakes in their farm operations. Soil conservation is often learned from close neighbors who have tried a practice or technique on their own or under the current Save Our Soils program.*

3. ***Myth!*** *- Direct seeding programs, put into place under the current soil conservation plan, have shown that this practice actually has many advantages over summerfallow. The enhancement of wildlife habitat and lower cost of field operations are examples of savings with no loss of yield potential.*

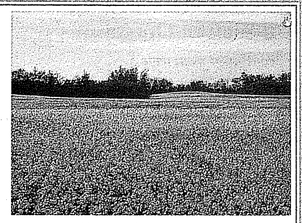
4. ***Myth!*** *- Properly designed field shelterbelt systems actually spread out snowfall on a field, allowing moisture to penetrate uniformly over the entire field. This eliminates large erosion causing drifts and assists percolation which tends to reduce saline build-up.*

5. ***Myth!*** *- The "North" has to worry about soil conservation just as much as the "South". Just because the annual precipitation is normally somewhat higher, it doesn't mean there is any less danger of wind or water erosion. Large, open fields and improper management of trash residue can lead to massive losses, regardless of where the farm is located.*

6. ***Outright lie!*** *- In fact, today more and more farmers are taking steps to improve wildlife habitat by initiating soil conservation measures, such as direct seeding, reduced tillage systems, and the preservation of wetlands, on their own farms. Many programs are being assisted by agencies and organizations devoted to the enhancement of wildlife habitat on agricultural land.*

Planning Crop Rotations

By: Blair McClinton
SSCA N.W. Regional Soil Conservationist



Zero Till Canola - Rotations assist with weed and disease control

Planning a proper crop rotation is essential to successful direct seeding. The basic considerations with rotation planning are:

- weed control
- disease control
- insect control
- soil moisture
- timeliness
- adaptability
- profitability.

Weed Control

Weeds can be a problem in direct seeding systems. Early research on continuous zero till wheat suggested that grassy weeds would become a problem. Recent research has shown that crop rotations can have a major impact on weed populations. Crop rotations can assist in a weed control program by changing crop competition, the growing cycle, or by allowing the use of more effective herbicides.

Including fall seeded crops and perennial forages in the rotation can help with weed control by changing crop competition and plant growth cycles. Some fields may need to have rotations designed to control specific weed problems.

One common practise for direct seeders is to alternate broadleaf crops with cereals. This rotation allows for the use of highly effective grassy weed herbicides in the broadleaf crop while broadleaf weeds can be targeted in the cereal years. This type of rotation can also help reduce the amount of herbicides needed in a direct seeding system.

Disease Control

Disease control is the most common reason for rotating crops. Rotations are effective because most disease organisms will only infect specific crops. For example, the leaf diseases in wheat are caused by different organisms than the leaf diseases in barley. Rotations minimize diseases by eliminating the organisms' food supply, which prevents them from reproducing.

Since some organisms can remain viable in the soil for several years, crops may need to be spaced several years apart to get effective control. For example, canola should be spaced at least four years apart to control blackleg and sclerotinia. Wheat crops should be spaced two to three years apart to minimize leaf and root diseases.

Insects

As part of an integrated pest management (IPM) strategy, growing a wide variety of crops can help minimize insect pests. IPM uses a combination of chemical, cultural and biological controls to manage insect populations. Crop rotations can limit the food supply for certain insects, preventing their populations from getting too large.

Soil Moisture

Soil moisture should be considered when designing a crop rotation. The amount of water used by a crop can have a large effect on subsequent crops. Crop water use, residue levels and snow trapping will determine the amount of soil moisture available for the following crop. Using snow management techniques to increase soil moisture can help make extended cropping feasible.

Adaptability

In many areas of Saskatchewan, cropping choices are limited by the local climate. Only crops that can tolerate heat and moisture stress are adapted to the drier brown and dark brown soil zones. These soil zones are well suited to growing drought tolerant crops such as wheat, barley, lentils and sunflowers.

In the cool, moist conditions of the black and grey soil zones, crops such as canola, barley, wheat and peas are well adapted. Local features such as the frost free period, heat units and soil type are also factors in the adaptability of crops.

Timeliness

By planting crops that mature at different times, seeding and harvesting can be spread out over longer periods. Including fall seeded crops in the rotation can also help spread out the work load away from peak seasons.

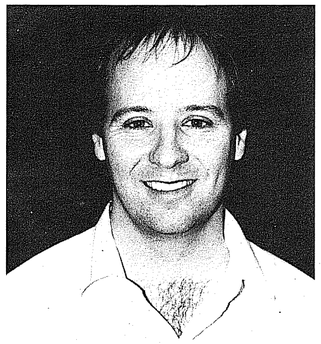
Profitability

Profitability is an important consideration when designing a crop rotation. Crops yields often respond to rotation. This "rotation effect" is due to reduced disease incidence. Diverse crop rotations improve marketing options and can lower the overall risk on the farm. Rotations may need to be modified occasionally to respond to market changes.

Legume and forage crops have the ability to improve soil quality. Legume crops such as alfalfa, clovers, peas and lentils symbiotically fix atmospheric nitrogen into the soil. Forage crops stabilize the soil and help improve organic matter levels.

There are many ways to design a crop rotation. Rotations should reflect the needs of each farm. Producers can get assistance from their local extension agrologists. A computerized "Crop Rotation Planner" has been developed to help make rotational choices. This planner is available through your local Rural Service Centre.

Feature Interview with SSCA Executive - Gary Schweitzer, SSCA Past President



- **Gary Schweitzer**
- **Married to Susanne**
- **3 Children**
- **Farms near Eston**
- **Brown Soil Zone**
- **Specialty crops and grain**

Q: What prompted you to get involved with the SSCA?

A: Certainly concerns about environmental issues and soil conservation, of course, and being involved with the original PFRA program that switched into the Save our Soils Program. I was interested initially in an organization called ManDak, the Manitoba - North Dakota Zero Till Association. I was interested in setting up something similar to that in Saskatchewan, to do the same sort of job, but with a broader mandate than ManDak has.

Q: How long have you been associated with the SSCA?

A: I've been involved since day one, except for one year. I was a director and then when my term ended, I took a year off. Then I came back and got onto the executive and I've been here about two and half years now.

Q: What are some the conservation practices you are doing in your operation?

A: We zero till seed everything. We use chemical fallow and a wide blade cultivator on our fallow ground. We do flax strip seeding for barrier strips and crop stripping for snow management. We also straight combine for snow management. We try to use minimum till or zero till on every acre.

Q: What are the benefits of joining the SSCA?

A: Being able to contact, interact and exchange information with other producers that are doing similar types of things to what you are doing. That information exchange is beneficial in any group where you can get together with people of like mind. Being involved in the organization, farmers have a voice and they can then direct how the organization should work. I'm sure they have a fair interest in which way agriculture is going to go in the future and there are opportunities to have a voice in the future.

Q: Why aren't there more people practicing soil conservation in Saskatchewan?

A: That's a good question! A lack of knowledge I guess, or perhaps a lack of interest in it. A lot of producers are very conservative types of people. They basically follow the management style that they were taught by their fathers and don't adopt new ideas very quickly. Consequently, soil conservation is a relatively new idea and people are coming around, but it's a slow thing. It tends to be, at the moment, the innovators and early adopters and eventually it will be adopted by the majority of producers, I'm sure.

Q: Do you see our governments taking a more aggressive stand on soil conservation?

A: Well, I think a government is made up of people. We have to get the attention of a majority of farmers and get them pressuring government to adopt conservation positive, or at least conservation neutral policies. They will change, but it requires a consistent, concentrated approach.

Q: Do you see Canada eventually going to policies similar to the United States, with some type of forced conservation?

A: I'm not sure I'm in favour of forced compliance. However, I'd be in favour of cross compliance, where farmers that are benefitting from one government program or another have to adopt reasonable soil conservation practices in order to qualify for those benefits. And I think that's the sort of cross compliance situation that happens in the U.S. You're not actually forced to do it, but if you don't do it, there are substantial penalties. That's the sort of system, that I think at some point, we'll go toward in Canada.

I think cross compliance is reasonable to expect. Taxpayers that are putting up money for farm programs have to be able to expect that farmers will not use abusive land management practices and still claim government dollars.

Q: As a past president of the Association, what have been some of the highlights and achievements of your term?

A: Personally, I wanted to see more producers become involved. I think we're starting to see the membership grow. I think with the membership enhancement program we are running right now and by getting more private industry people that have conservation positive products involved with us, that's going to make it easier to attract membership. I think more farmers are shifting in the direction of conservation, they'll want to become involved with the SSCA. To see the organization grow and be able to do more things, get into more extension and awareness is positive from my standpoint.

Heavy Clay Soils Under Great Peril

By: Don Sutherland, P.Ag.
Don is a SSCA member and farms in the Eston, Sk. area. He is also the President of the Saskatchewan Consulting Agrologists.

Those of us who farm within the Palliser Triangle have always had to contend with moisture deficiency. Our traditional coping method has been summerfallow. Despite its inefficiency as a moisture saver (requiring 18 months to store only an extra inch or two of water), summerfallow has become a deeply entrenched practice. An inch of water usually delivers 5 to 7 bushels per acre.

We experienced terrible dust storms in the 1930's. At that time, our farming practices were far from wind resistant. Excessive tillage with the double disk was common. We thought that using an 8 foot one-way was progress.

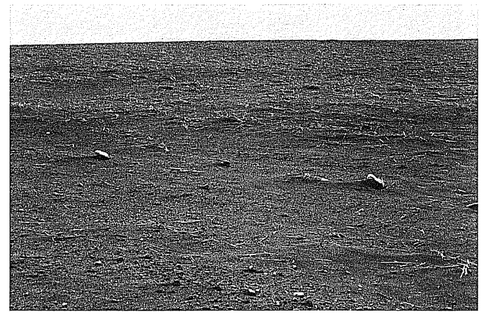
During the 60's and 70's we became more trash conscious, made more use of rod weeders, slowed our tillage speeds; indeed, it seemed that we were winning. The 80's ushered in greater use of chem fallow, wide blades, chaff spreaders, and snow trapping. Surely technology would save our soil.

Winds have always been with us. Those of us who were raised here have never been able to shake that characteristic lean.

But now we have a new enemy. It has been slowly stalking us for four decades. That enemy is climate change. Our winters have become warmer. Winter snow disappears frequently under a freeze-thaw sequence. The result is a devastating breakdown of soil structure over winter. **This breakdown is particularly severe with heavy clay**.

Despite increased chem fallow and reasonable care of straw, approximately 80% of summerfallow fields in the Eston area suffered moderate to severe soil erosion in the spring of 1992.

Scenes like this were all too common:



Who said heavy clay was stone free?

Even chem fallow was in danger. The straw tended to break at ground level and either blow away or roll into piles.

There are no easy answers. Clearly, the solutions of the past will not sustain our soils. As the climate continues to warm, our field practices may become further and further out of step with reality.

Some possible options - each with a downside.

1) Zero till, continuous crop. (must be prepared for some crop failures and July reseeding of bare spots in extremely dry years such as 1988)

2) Be content with a once-over summerfallow - one tillage or one chemical. (must be prepared for rather heavy freeze-down growth at times but the extra roots will hold the soil)

3) Flax, mustard or cereal barrier strips can save soil. (tillage equipment must fit; must be sufficient early July moisture to germinate; grasshoppers can eliminate)

4) Other options?

Field shelterbelts, narrow fields, other?

The Bottom Line

As climate change continues its relentless march, our heavy clay soils are at greater and greater risk. The productivity of this valuable heritage is declining. We have not yet learned how to cope. Will we? Can we?

Holistic Resource Management Workshop A Success

By: Nancy Fraser
SSCA Range and Forage Specialist

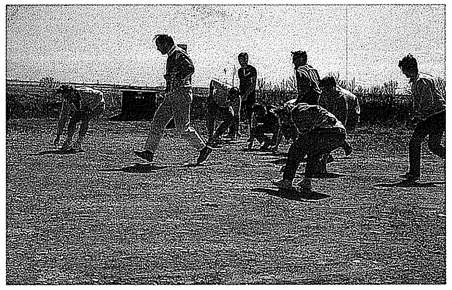
The registration list was full and people were turned away from the Holistic Resource Management (HRM) workshop held at the end of February in Regina. The SSCA and the Grazing and Pasture Technology Program, as presenters of the workshop, were very pleased with the interest.

Participants in an HRM workshop are exposed to a thought model designed to help people make clear and consistent resource management decisions. HRM teaches people to pinpoint and address the causes of land, wildlife, and financial deterioration, rather than applying 'quick fix' band-aids to symptoms.

Farm families, ranchers, environmentalists, wildlife managers and extension workers finished the three day workshop with an appreciation for the concept of holistic management and left ready to apply new ideas in their daily lives. Based on the workshop evaluation forms, all the participants felt it was time well spent.

If you are interested in HRM or wish to talk to someone who took the workshop, please contact our Regina office and we will be pleased to supply you with a list of participants.

Project Soils



What are these people doing? They're playing "Root Race", an activity written only hours earlier, designed to teach children about plant ecology and bio-diversity.

By: Yvette Crane
SSCA Soil Conservation Educator

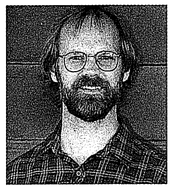
An extremely hard-working group of ten educators and six conservation specialists met at the Mainstay Inn, near Riverhurst, Saskatchewan the first weekend of May. Their goal was to develop hands-on soil conservation activities for children and their teachers. The writing workshop was a great success. It resulted in 15 activities for Project Soils, which we hope to formally pilot in Saskatchewan schools next fall.

The activities are based on the Project Wild model. Project Wild is a wildlife education program which is an approved resource for Saskatchewan schools. Sponsoring the development of "Project Soils" is an exciting new venture in the area of conservation education for the SSCA. The Project Soils activity manual will provide a brand new educational resource, specific to Saskatchewan, on a model which is already proven and accepted throughout the province.

The SSCA, in cooperation with Saskatchewan's Department of Natural Resources, will now be able to give educational workshops on soil conservation using the manual as a guide. This new activity manual will better equip educators and others working with young people to teach soil conservation.

We are very excited about this, our latest educational project. If you're interested in seeing a draft copy of the activities, would like to get involved as a pilot teacher, or simply want to know more about SSCA's educational endeavours, please give me a call at (306) 787-0555.

How Fuel Prices Affect the Cost of Spraying and Cultivating Operations



By: James Lokken
SSCA Economics Specialist

Farmers should compare the fuel costs of various machine operations when planning field work. A spraying operation, which uses relatively little fuel, often can replace one or more cultivating operations.

Spraying in place of cultivating also provides other economic and agronomic benefits. These include reduced machinery wear, reduced labour and improved soil conservation.

Cost Of Farm Fuel

From 1981 to 1990, fuel and lubricant purchases were the second largest Saskatchewan farm cash expense every year after interest payments, according to Statistics Canada. In 1991, fuel and lubricants together were the largest cash expense.

Farm fuel and other petroleum product prices rose steadily through the early 1980's. More recently, they have fluctuated below their 1985 peak. Farmers, today, face uncertainty in both fuel price and fuel taxation.

Cost Of Spraying Versus Cultivating

Figures 1 and 2 show that increasing the price of fuel increases the costs of a cultivating operation much more than the costs of a spraying operation.[1]

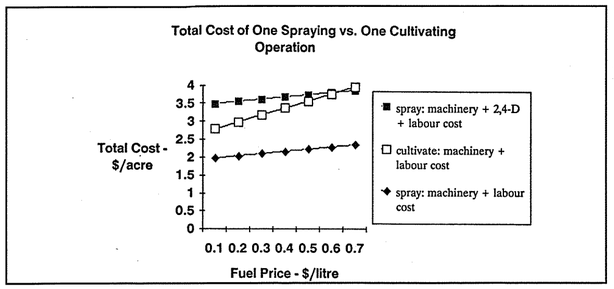


Figure 1

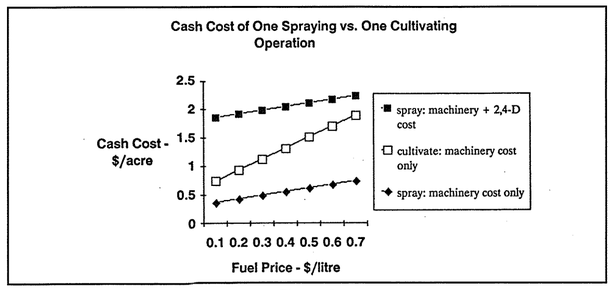


Figure 2

The figures illustrate the importance of understanding both cash and total costs. The cash cost of one spraying operation including the herbicide (in this example, 2,4-D at $1.50 per acre, applied to control winter annual weeds), is much higher than the cash cost of one cultivating operation, throughout the range of fuel prices used (Figure 1).

However, the total costs (cash and fixed) of the two operations, which in the long run are the real costs to the farmer, are not very different (Figure 2).

Substituting Spraying For Cultivating: other factors

Apart from the fuel costs of individual operations, there are other factors which farmers must consider when choosing between spraying and cultivating. These include:

1. the cost of various herbicides.
2. the number of cultivations replaced by one spraying.
3. machinery wear and tear.
4. the value of labour and time.
5. the value of preserving crop residues for soil and moisture conservation.

In conservation fallow or other reduced tillage systems, the increased cash costs of the herbicides used in spraying often are offset by the reduced number of operations required.

Spraying saves time and reduces machinery wear and tear. This is especially true if one spraying operation replaces more than one cultivating operation.

Spraying also leaves crop residues and the soil relatively undisturbed. Crop residues protect the soil from wind and water erosion, conserve soil moisture, and provide wildlife habitat.

. . . continued on page 9

How Fuel Prices Affect the Cost of Spraying and Cultivating Operations

. . . continued from page 5

Spraying operations can replace cultivating operations at various times. In the fall, stubble should be left standing to protect the soil and trap snow. Winter annual weeds can be effectively controlled with an application of 2,4-D in the fall or early spring (before the end of April).

Herbicides will also give good preseeding control of other weeds, eliminating the need for preseeding cultivation. Herbicides can replace cultivation on fallow land throughout the year.

Conclusions

Farmers can reduce their fuel expense by choosing spraying over cultivating. At current fuel prices, the total costs of timely control of winter annuals with 2,4-D are quite similar to the total costs of a cultivating operation. Fall or early spring 2,4-D spraying is an economical alternative to cultivation.

Factors other than the costs of individual spraying and cultivating operations must be considered. These include the effectiveness of spraying versus cultivating for controlling various weeds, the cost of various herbicides, the value of time and the value of conserving soil and moisture by preserving crop residues and not disturbing the soil.

As fuel prices rise, the relative fuel requirements of various machine operations will increase in importance for determining how field operations are carried out.

1. Data for figures derived from Saskatchewan Agriculture and Food, 1992 Farm Machinery Custom and Rental Rate Guide; only fuel price varies in the figures.

a. Costs of cultivating operation based on a 32 foot heavy duty cultivator (250 annual hours of use) pulled by a 2 wheel drive 150 HP tractor (600 annual hours of use) at a rate of 16.5 acres per hour.

b. Costs of spraying operation based on an 80-90 foot PTO sprayer (70 annual hours of use) pulled by a 2 wheel drive 85 HP tractor (400 annual hours of use) at a rate of 35 acres per hour. Included in the cash and total costs of spraying is the cost of hauling water.

c. Cash costs include repair costs for implements; repair, fuel and lubrication costs for tractors and truck (Figure 1).

d. Total costs include cash costs plus fixed costs (depreciation, investment, insurance and housing) for implements, tractors and truck based on cost of new equipment; farmer's labour included in total costs at $9.00 per hour (Figure 2).

e. 2,4-D included in Figures 1 and 2 at $1.50 per acre (6 ounces of active ingredient). If spraying for winter annuals in the spring, rate may have to be increased above 6 ounces per acre to improve control. Per acre costs of other herbicides (eg. Roundup at $5.50/acre or Rustler at $6.00/acre) can be substituted for 2,4-D in Figures 1 and 2.

Modified Sprayer Saves Dollars

By: Garth Patterson
SSCA W.C. Regional Soil Conservationist

Tank mixing products is a great way to get one pass weed control with your sprayer, right? What happens when there are only patches of wild oats, but you still need to spray the broadleaf product? Ever felt like you were wasting product and money? Well, you were!

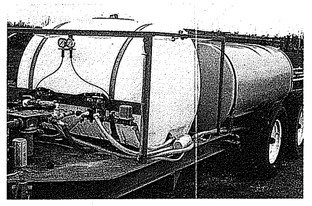
Bill Boyd, an Eston area farmer, decided to do something about it. "I'd heard that vegetable growers often used sprayers with two booms, so I decided to adapt my sprayer to two booms and two tanks."

Boyd started with an eighty foot Wilger sprayer with a 400 gallon tank. He cut the frame to accommodate a 200 gallon tank in front of the original tank. A second boom was fitted about four inches away from the first boom. The sprayer now has two hydraulically driven pumps which can be individually controlled by electric solenoid switches in the tractor cab. The sprayer is even plumbed so that both tanks can supply the same boom. Boyd has found this especially useful when Rustler is applied on a conservation fallow field. Parts for the entire modification cost about $1800, according to the inventive farmer.

Boyd's durum fields are entirely sprayed with a broadleaf product out of the 400 gallon tank, and only spot sprayed with a wild oat herbicide out of the 200 gallon tank. Boyd stresses that it is important to use products that are tank mixable.

This system works for Boyd because he seeds on thirteen inch row spacings. "It's amazingly easy to see the wild oats because of our wide row spacing and the colour difference between the crop and the wild oats. We also scout our fields ahead of time, so we have a pretty good idea where the weeds are," says Boyd.

The savings from this modified sprayer are significant, according to Boyd. "We used to spend about $12 per acre for granular wild oat herbicide, but now we only treat about 25% of our land with a wild oat control product. This system saves us money."



Bill Boyd's modified sprayer.

Report Card On Soil Conservation

By: Bob Linnell
SSCA S.E. Regional Soil Conservationist

This report card will address the question "How well are we doing in our studies of the subject of soil conservation?" The answer is related to us through a number of sources and venues.

As the province becomes increasingly aware of the health of its natural environment, conservation ventures become more ambitious. They also become more complex and more pertinent to a wide variety of interest groups. Some of these groups have long histories of positive action. Others are new in terms of tangible performance. Greater collaboration among private groups and public agencies is required at all stages from initial planning through to the final operation.

Ultimate success depends on how effective this cooperative process is in terms of measurable or perceived improvements to our land, water and air resources, and increased public sensitivity toward conservation.

- Good marks for design.

The concept of regional conservation teams has proven to be a particularly valuable resource in the campaign to increase the general public's awareness of soil conservation. Bringing together such a diverse field of knowledge during the year has turned out to be the key to early identification of problem areas in the province. It has also provided the doorway for convincing under-informed landowners they are in the best position to take affirmative action on their own land to correct costly mistakes in past management.

By using the team approach, information is readily transferred to the producer who needs it. Conversely, problems can be addressed through the wide exposure of regional conservation team members at such things as public producer meetings.

- Full marks for the team concept.

Other areas where substantial inroads have been accomplished have occurred in the following areas: assisting ADD board efforts in extension; assisting some extension agrologists to more vigorously pursue soil conservation thrusts; encouraging school education programs where students have been given the opportunity to determine the relevance and importance of soil conservation.

- Marks show good improvement.

Equipment, method, theory and philosophy, in the practical world of producers, have been explored during the year and attention has been quite good. Some outward improvement of manners is expected in years to come. Economics work seems to be improving slightly. However, mathematics needs some further attention. Foreign language has expanded greatly of late. Religious studies seem to be the answer for some. General health and vigour appear to be adequate.

- A good report in general. Good luck in your future!

Future planning is an area which is presently being dealt with in class. Everyone is reminded to diligently do their homework and be prepared to answer questions. Please prepare finished reports as soon as possible. Orderly conduct will ensure you a seat on the great soil conservation school bus as the journey continues. Have a good summer.

Bob Linnell,
Conservation School Superintendent

New Poplar Tree Is Available

Manitou is a new poplar clone that has been developed at the PFRA Shelterbelt Centre at Indian Head, for use in farmstead shelterbelts. It is a relative of the Walker poplar, a clone released earlier from the Centre.

Because the Manitou poplar is a male clone, it will not produce any seed cotton. In tests at Indian Head, Moose Jaw and Prince Albert, the tree has shown rapid growth, reaching heights of seven metres in five years. Other favourable characteristics of this poplar include excellent winter hardiness and resistance to poplar bud fall mite and Septaria canker. Manitou is more heavily branched and has a wider structure than Assiniboine or Walker. The tree also roots easily from hardwood cuttings.

The Manitou poplar is named after Little Manitou Lake, a salt water lake in Central Saskatchewan. Known as the "Lake of Healing Waters", it was revered by Plains Indians for its curative properties. Manitou is an Algonquian word meaning "mysterious being" or simply "mystery".

There will be a limited supply of this new tree available to prairie farmers in 1994. For more information contact the PFRA Shelterbelt Centre, Indian head at (306) 695-2284.

A New Approach To An Old Problem

By: David J. Struthers
Soils/Crops Agrologist, Western Resource Management Associates Ltd.

As a result of the recent addition to Juanita and Allan Polegi's family, Western Resource Management Associates (WRMA) has been hired as the interim Regional Soil Conservationist for the East Central Region.

Over the course of the 1992 field season, WRMA will provide resource materials and serve as the resource specialist for the 8 district SOS committees in the East Central Region. One of the main activities we have planned is to help the technicians develop a different approach to promoting soil conservation - by focusing on water!

Water and Soil Conservation: A new approach to an old problem

North American agriculture's soil degradation problem is well documented. Efforts to halt the process have been underway since the 1930's. Unfortunately, degradation continues to be a major concern some sixty years later, leading people to question how much progress has been made in addressing the problem through research, demonstration and education.

In "Soil, Water, Wetlands: A Discussion Paper", commissioned by The Souris Basin Development Authority and prepared by Environmental Management Associates in 1989, the question is asked: *"If soil degradation problems are so pervasive and widely acknowledged, then why is the landowner generally reluctant to embrace conservation programs?"*

The paper goes on to summarize the current "roadblocks" to soil conservation as:

1) a lack of profile - certain aspects of the degrading process are often slow and not highly visible, and
2) the perception among a majority of producers and even some professionals that *"soil conservation has few, tangible short-term benefits for the landowner"*.

As a result, producers do not feel a sense of urgency to adjust their farming practices. In light of the current farm financial situation, most claim that they are under too much economic pressure to adopt soil conservation practices, even if they acknowledge that soil losses are occurring on their farm. With this type of attitude the soil degradation situation only worsens and producers live a self-fulfilling prophecy.

However, the same paper quotes estimates from the Prairie Farm Rehabilitation Administration (1988) that value the benefits from soil conservation on the Canadian Prairies at approximately $3.2 billion between 1983 and the year 2000. This statement seems to refute the idea that there is little short-term economic benefit to soil conservation. There is no question that maintaining soil structure and enhancing organic matter will produce **immediate** economic benefits, even though the measurement may manifest itself in the amount of diesel fuel and/or fertilizer a producer **doesn't** purchase.

So what is the problem? Why do extension efforts directed towards soil conservation seem to meet with producer "roadblocks", rather than acceptance? If producers have a negative mindset towards the possibility of short-term benefits from soil conservation, then we must find another approach to get the message across.

This approach may be the promotion of **water** and its conservation. Water is a commodity that any producer will tell you has undeniable short-term economic benefits. Currently, the benefits of water conservation have been recognized in soil conservation, but have been promoted secondary to erosion control. We may find it more effective to reverse that priority in order to reach the producer who, as the joke goes, *"stands amongst the ditches in his field and prays for rain"*.

Moisture is the limiting factor to annual crop production in most regions of Western Canada. To grow a crop successfully, farmers must make efficient use of available soil moisture and precipitation. Unfortunately, traditional farming practices such as summerfallowing and intensive tillage for weed control, fertilizer application and seedbed preparation greatly reduce moisture use efficiency by allowing evaporation and runoff losses to occur. This limits the yield and economic potential of crops and increases our reliance on cropping inputs such as herbicides and fertilizers.

To properly manage the soil for maximum water use efficiency, vegetation must be retained on the soil surface. Practices such as reduced tillage, stubble management, forage planting and shelterbelt establishment will accomplish this. These practices simultaneously address the problem of soil degradation, thereby providing both short and long-term benefits to the producer.

Promoting management of the soil surface for optimal water use efficiency, with soil conservation as a side benefit, may be more effective in encouraging producers to adopt practices affecting their entire acreage, instead of only problem spots. This might alleviate such contradictory practices as planting shelterbelts to control wind erosion, while continuing to intensively cultivate the fields between the rows of trees.

The first step in initiating an effective extension program geared towards water conservation is to provide SOS Technicians with a basic understanding of water cycles and watershed management. A one day seminar has been organized that focuses on the relation between water cycle effectiveness and the various soil conservation practices offered through the SOS program. From this discussion, an extension package will be developed for the technicians to use during summer tours, field days and other extension activities.

New Member Profile: Ives and Claudette Clark

The Clark's and their homemade tree planter.

By: Garth Patterson
SSCA W.C. Regional Soil Conservationist

If you'd watched your land blow for 25 years, would you still have the initiative to do something about it? Well, Ives and Claudette Clark did.

"We used to cultivate the hell out of everything," chuckles Ives. "Anytime there were weeds coming, we'd get out there and give 'er!" The way they formerly worked the land resulted in wind erosion on their farm in the light soils west of Biggar. "We had to buy a scraper to haul the soil out of the ditches and sloughs and put it back where it came from."

The Clark's always felt they were open to new ideas, but didn't realize there was a better way to do things because everyone in the area farmed the same. What made them change after 25 years of farming the traditional way? It wasn't until Ives went to a local SOS meeting, that the light went on. "It's never too late to change", says Ives, "it used to bother us when the soil blew, but we just didn't know how to do anything about it."

In two short years, they have completely changed the way they farm. Their crop rotation is being extended from 50/50 to fallow only once every four years. Their fallow management now involves 2,4-D followed by Rustler, then once over with the wide blade. They had been trying the wide blade through the SOS program, but decided to purchase their own last year.

They enrolled one section of fragile land in the Permanent Cover Program, and also planted four miles of trees on it this spring. They built their own tree planter (complete with bucket seats) to do the job. In fact, it turned out to be more popular than the R.M. planter!

However, the Clark's aren't done yet. They recently joined SSCA, when Ives saw a Monsanto membership discount coupon in a farm paper. They would like to learn more about conservation farming, especially direct seeding. And, that tree planter is not going to get mothballed yet, either!

Welcome to the SSCA, Ives and Claudette. Thanks for having the courage to change.

Direct Seeding In The North West

By: Blair McClinton
SSCA N.W. Regional Soil Conservationist

Direct seeded crop.

The Save Our Soils Program, extension meetings and the media have generated a great deal of interest in direct seeding. This year, many producers are direct seeding for the first time, using a variety of seeding equipment.

There has been a large increase in the number of producers direct seeding with their air seeders. Several producers have modified their air seeders with narrow openers and on row packers. Some farmers are also using their hoe drills for direct seeding, while several producers have purchased new seeders for direct seeding.

All seven ADD Boards have set up direct seeding programs. They range from renting zero till drills to having local producers custom seed fields. Since these will be the first direct seeding demonstrations in some districts, more interest will be generated. Producers should contact their local SOS Technician or Extension Agrologist for information on tours or projects in their area.

The Scott Experimental Farm field day is on July 22 at 10 a.m.. This is one of the best research farm field days in the province. Research on weed control, agronomy and crop varieties will be featured. The staff are also doing research on surface applications of soil incorporated herbicides, improved glyphosate control, cultural weed control, crop rotation studies, fertility studies and variety testing.

Scott is also the location of one of the longest running zero till studies in western Canada. This project was started in 1979 using two rotations (fallow-oilseed-wheat and oilseed-wheat-wheat) under both zero and conventional tillage treatments. This year, a zero tillage study is being started on a grey wooded soil at the Loon Lake Substation.

Environmental Laws and the Farmer

By: Leonard D. Andrychuk
Partner in the Saskatchewan law firm MacPherson, Leslie & Tyerman

For the past decade, growing public concern over environmental damage from industry has resulted in a vast array of legislation relating to the environment. I am sure many farmers, like other members of the public, often have an uneasy feeling that they are breaking environmental laws that they are unaware even exist.

In this series of articles, I propose to provide a very brief overview of provincial environmental laws which might have application to farming operations. Hopefully, this will give readers a general idea of the types of farming practices which might cause them to run afoul of environmental laws.

It is helpful to understand which Government agencies administer the legislation examined in these articles. Saskatchewan Agriculture and Food is responsible for the administration of *The Pollution (By Livestock) Control Act and The Pest Control Products (Saskatchewan) Act*.

The Pollution (By Livestock) Control Act, 1984 directly applies to farming. This Act prohibits the construction or alteration of any building or facility used or intended for use in an intensive livestock operation without a permit. An intensive livestock operation is defined to mean the rearing, confinement or feeding of poultry, hogs, sheep, goats, cattle or horses where the space provided for certain numbers of animals is less than a certain area, as described in the Regulations.

Permit applications are dealt with by the Pollution by Livestock Control Unit of Saskatchewan Agriculture. The permit application form requires detailed information to be provided with respect to water source, water transmission systems, existing and proposed feed lot or dry lot facilities, existing and proposed barn facilities, run off area and volume of holding ponds and other such information.

A permit may be refused if the operation will result in pollution of ground or surface water or in a nuisance. The *Act* also gives the Minister responsible the power to order the owner or person in charge of an intensive livestock operation to do anything necessary to remedy an unnecessarily unsanitary condition, nuisance, or the pollution of lands or waters.

The *Act* makes it an offence to operate an intensive livestock operation without a permit, to obstruct an inspector during the performance of his duties, to contravene the terms, conditions or restrictions of the permit or to fail to comply with a Minister's remedial order. Such offences are punishable by a fine of up to $5,000. In the case of a continuing offence (for example, where pollution of ground or surface water, or an unsanitary condition continues), there may be an additional fine of up to $100 for each day during which the offense continues.

The Pest Control Products (Saskatchewan) Act and regulations regulate the sale, use, storage and disposal of pesticides and herbicides. Both pesticides and herbicides are defined in the *Act* as "pesticides".

The *Act* and regulations prohibit the use of a pesticide for purposes other than that for which it is sold or in a manner other than that prescribed on the package label; prohibit the application of a pesticide to any open body of water or its banks without a permit; prohibit the cleaning or placing in an open body of water of any pesticide application equipment or container; prohibit the drawing of water from an open body of water into any application or mixing equipment without a backflow prevention device.

The *Act* and regulations also require pesticides to be transported in a manner that ensures that they do not contact or contaminate any food or other substance intended for human, plant or animal consumption or come into contact with human, plant or animal life; require pesticides and used containers to be kept in a separate locked building or fully partitioned room; prohibit the disposal of pesticides, containers or materials treated with pesticides at a dry disposal site or in a disposal ground unless it is approved for that purpose; require treated grain to be transported in sacks or sealed containers or, if transported in bulk, under a well secured tarpaulin to prevent spillage; and require sellers and suppliers of treated seed grain to put warning labels on bags and to provide written warnings to purchasers.

The *Act* and regulations prohibit any person from applying pesticides for a fee (except on one's own land and in some other limited cases) without a pesticide applicator's licence.

The *Act* gives inspectors wide powers to investigate. The Minister is given the power to order the destruction of contaminated crops, feed, animals, plants, water or produce and inspectors have the power to order the use or application of pesticides to cease, if of the opinion that its use may be dangerous to the health of any person or animal, or harmful to crops or plant life. Such orders may be appealed to the courts.

The Pesticide Prohibition Regulations, 1985, prohibit the use of any preparation containing the herbicides 2,4,5-T, fenoprop, niclofen or nitrofen (TOK) and similar herbicides.

Contravention of *The Pest Control Products Act* or regulations is an offence punishable by a fine of up to $1,000 or to imprisonment for up to 90 days, or to both fine and imprisonment. To assist farmers in complying with the Act, two programs have been established. Under the Agricultural Chemical Collection Program, waste farm chemicals are being collected at mobile collection depots. (The Program can be contacted in Regina at 787-6488). Under the Pesticide Container Disposal Program, municipalities have established sites for the collection of used pesticide containers for their proper disposal.

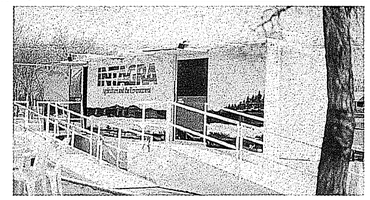
In this discussion, I have attempted to give a brief overview of some of the environmental legislation in Saskatchewan which may have application to farming operations. I have only just touched upon the basic elements of the legislation and have not dealt with the issue of potential civil liability for farming operations under environmental legislation and apart from environmental legislation.

Although it is easy to become legalistic when considering the area of environmental law, it must be borne in mind that the basic object of all environmental laws is the protection of the health of people, property, plant and animal life and the environment in general. While it is important to have a general knowledge of the law in the area in order to know when you might be breaking any environmental laws, the application of common sense can also stand you in good stead.

If you intend to carry out some operations which may have adverse environmental consequences, you should consider whether it is an operation for which a permit is required or which is otherwise restricted. Questions in this regard may be answered by calling the appropriate branch of the government or consulting a lawyer.

(next issue - environmental legislation administered by the Environmental Protection Division of Saskatchewan Environment and Public Safety)

Mr. Andrychuk is a partner in the law firm of MacPherson, Leslie & Tyerman. The Saskatchewan law firm was founded in 1921 and has offices in both Regina and Saskatoon. Mr. Andrychuk has written and lectured in the field of environmental law.



Soil Conservation Trailer Travels Western Canada

An innovative educational program on agriculture and the environment, called Intagra (for integrated agriculture), began touring the prairies in May. The display highlights the relationship of environmental, economic and social factors and their influence on the choices and decisions made by prairie farmers.

Intagra examines the evolution of the prairie environment and its habitat. Displays show the formation of prairie soils and water basins, as well as how the developing technologies and the realities of our economy may affect farming practices in the future. Exciting videos, colorful graphics and arcade games are used to deliver the conservation message.

The travelling exhibit will tour schools, fairs and exhibitions. Organizers expect over one hundred thousand children and eighty thousand adults to visit the Intagra display trailer during the next five years.

The high-tech display trailer marks a successful partnership between government and private agencies. The Prairie Farm Rehabilitation Administration teamed up with the Saskatchewan Research Council, Ducks Unlimited, and Prairie Pools. CP Rail, the Canadian Cattleman's Association, the Alberta Cattle Commission and the Manitoba Cattle Producers' Association are minor sponsors.

Watch for the Intagra display in your community in the near future.

June 25 - 28th	**Swift Current Frontier Days**
July 4 - 11th	**Saskatoon Hometown Fair**
July 26th	**Lake Diefenbaker rededication**
July 28th - Aug. 2nd	**Regina Buffalo Days**
Sept. - Oct.	**(dates for the following communities were unconfirmed as of press time) Davidson, Outlook, Rosetown, Biggar, Kerrobert, Kindersley**

For more information on the Intagra display trailer contact:
John Lancaster, PFRA Regina, (306) 780-6271 or fax (306) 780-8229.

SOIL SMART! - For Young Conservationists

Hello everybody!

Thanks to all of you who entered the **Soil Smart** colouring contest last issue.

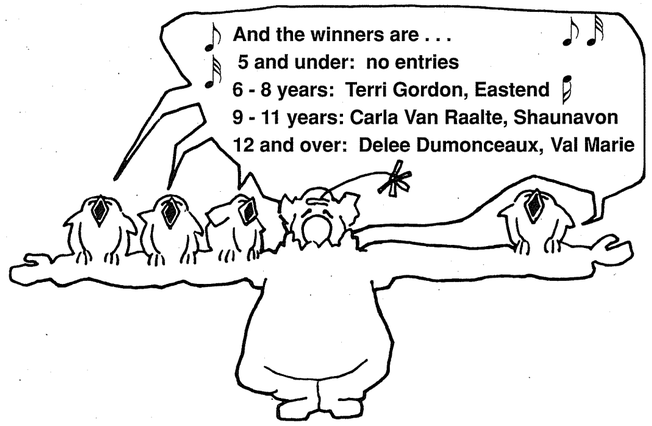
This time we have a **"Soil Scramble"** for you to try, some **soil conservation limericks**, and our **colouring contest winners!**

Here are all the names of the young conservationists who entered last issue's colouring contest:

Christie Gosselin, Terri Gordon, Carla Van Raalte, Delee Dumonceaux, Brenna Grant, Ron Wurz, Debby Kleinsasser, Chris Kleinsasser, Ronnie Walter, Edwin Walter, Clint Jensen, Chantelle Bennett, Ryan Mything, all the other "semi-finalists" from SOS District #4, Jen Lachambre, Dana Matt, Logan & Jill Hjelte, Robbie Gosselin, Larisa Barber, Carissa Buye, Stephanie Schindel, Adam Wilkinson and Blaine Davey.

You <u>all</u> did a <u>terrific</u> job!!

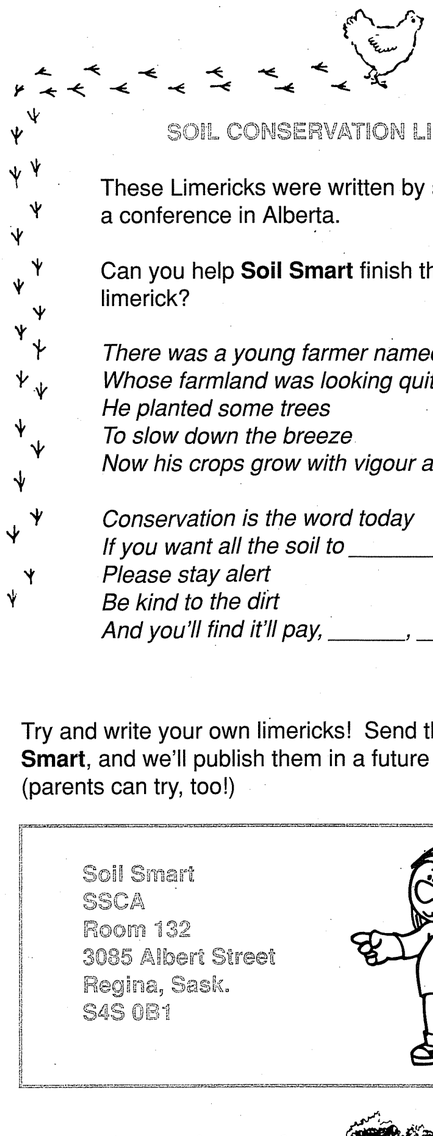
Here are some proud semi-finalists from SOS District #4 displaying their good work.



Watch for our next colouring contest in the November Prairie Steward!

SOIL SCRAMBLE!

1. Almost all of the food we eat comes from the _____. (isol)
2. The most important layer of soil for plants is the _____. (stiloop)
3. Soil can be _____ or washed away if the land is left bare. (nwbol)
4. Farmers plant _____ to prevent wind erosion. (lebtresshtel)
5. Planting grass in a gully helps fight _____ erosion. (awret)
6. Soil _____ means working together to keep our soil healthy. (tresnocivnoa)



SOIL CONSERVATION LIMERICKS

These Limericks were written by some people at a conference in Alberta.

Can you help **Soil Smart** finish the second limerick?

There was a young farmer named Jim
Whose farmland was looking quite grim
He planted some trees
To slow down the breeze
Now his crops grow with vigour and vim

Conservation is the word today
If you want all the soil to _____
Please stay alert
Be kind to the dirt
And you'll find it'll pay, _____, _____, _____!

Try and write your own limericks! Send them in to **Soil Smart**, and we'll publish them in a future issue . . . (parents can try, too!)

Soil Smart
SSCA
Room 132
3085 Albert Street
Regina, Sask.
S4S 0B1

Regional Roundup

Foraging For Answers

By: Pat Flaten
SSCA S.W. Regional Soil Conservationist

What choices do you have when considering forages to plant in Southwest Saskatchewan? We are attempting to help answer that question in a concrete way by providing small demonstration plots of many species and varieties of forages.

Recently, due to economics and conservation programs, there has been renewed interest in planting forages. In the Southwest, most forages are planted on either sandy, steeply sloped or saline land.

For this reason the plots have also been planted on either sandy, saline or "average" local soils. All 15 plots are beside or near major highways and grid roads. Each plot has 15-35 different species and varieties of legumes, native and tame grasses and mixtures.

There may not be much to see until mid-summer or next year. That's just the way it is with forages - patience is one key element in establishment. However, we hope they'll be an effective long-term extension tool for local tours or even just for casual drop-ins.

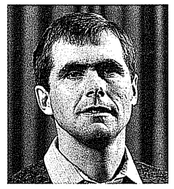
This project has been sponsored by many co-operating agencies and individuals. For instance, the land-owner is providing the land and maintenance. Some local clubs or ADD Boards are helping to provide support and publicity. SSCA has provided the organization of the project and some supplies through the ADF contract. ADF is also directly sponsoring the project through the Southwest Forage Association, which has an obvious interest in its success.

SeCan has been very involved in the actual seeding of the plot, supplying manpower and equipment to get the seeding done this spring. They will also be paying for all SeCan varieties used. Provincial Extension Staff and Ag Canada Research Station Staff at Swift Current have assisted with plot design and other support. The only support we still need is to get some rain on the plots for germination!

Plot information will be available to anybody who requests it through the SSCA Swift Current Office.

Seeding forage plot near Piapot, Sk.

Why Direct Seed?



By: Garry Meier
SSCA N.E. Regional Soil Conservationist

Canadian society is becoming increasingly aware of its interaction with the environment that it occupies. There is an increasing realization that our actions, in the past, have sometimes been very destructive to our surroundings, to the point of affecting the quality of life for humans and other life forms that occupy this environment.

There is also increasing scrutiny of any future action or project as it relates to maintaining a healthy environment for all life forms that occupy it.

Prairie agriculture has probably impacted a greater area of land mass in Canada than any other practice adopted by modern society. Current farming practices are coming under increasing scrutiny and criticism, and rightly so.

Loss of productivity of the soil through physical soil loss caused by the actions of wind and water is the most visible damage being done to our soils. The spread of salinity in prairie soils is also evident from either reduced crop growth or large areas of white crusted soil that grow nothing in the extreme case. Organic matter depletion is another problem created by our current farming methods that we have been able to offset to some degree with fertilizers.

There are many things that farmers can do to reduce or stop the damage that is currently occurring in their fields. Many of these "soil friendly" practices require significant changes to their farming routine. These include planting shelterbelts, strip farming, chem fallowing and planting forages on saline or erodible areas. All of these practices may have a small negative impact on farm net income. This would be considered the price to be paid for these soil conservation practices.

Reducing the number of tillage operations needed to seed the crop is also another soil conservation practice that is getting the attention of many prairie farmers.

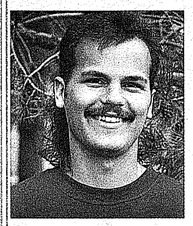
Direct seeding is simply placing the seed into the ground without any prior spring seeding tillage. Direct seeding requires the farmer to pay close attention to five areas to ensure success. These are residue management, weed control both pre-seeding and in crop, fertility, crop establishment and crop rotation.

There are many benefits to a direct seeding system. These include lower fuel costs, improved soil tilth, improved water infiltration, less wear and tear on your equipment, reduced wind and water erosion along with improved wildlife habitat.

On top of these benefits, direct seeded crops will yield as much or more than conventionally seeded crops. This should provide a positive impact on net farm income.

Direct seeding is not new - maybe it is for you.

U of S School of Agriculture Students Win SSCA Memberships



Kevin Morin

Quinton Domes

Erwin Hanley

By: Garth Patterson
SSCA W.C. Regional Soil Conservationist

In cooperation with the University of Saskatchewan's School of Agriculture, the SSCA is pleased to award three year memberships to the following School of Agriculture students: Kevin Morin of Edam, Quinton Domes of Weyburn, and Erwin Hanley of Regina. They were recently awarded top marks for their essays on soil conservation. The Soil Conservation class is taught by Dr. Mike Grevers of the Saskatchewan Institute of Pedology.

Following are excerpts from the winning essays.

Kevin Morin described the salinity problem on their farm. "The amount of land affected by salinity on our farm is about ten acres. It is a low lying area that runs in a narrow band. Management of the saline land on our farm can best be achieved by water management in terms of the recharge and discharge areas. Alfalfa, in particular, is the best for controlling the recharge area as it is the highest water user and deepest rooted of the forages.
... The extra profit from a normal cereal and oilseed rotation is very likely more than the loss that results from our salinity affected areas from reduced production. Therefore, we are financially further ahead to use regular continuous crop rotation (in the recharge area). On our farm, I have witnessed that when we grow barley on the saline field it grows quite well with virtually no bare patches. As a result, barley seems to be a good choice for discharge area management."

Quinton Domes discussed how they manage salinity on their farm. "One section of land has a lot of hills and sloughs. In the areas around the sloughs, there is a fair bit of salinity present. For managing the discharge area, one would need a crop that is tolerant to soil salinity. On our farm we are continuously seeding barley on the saline areas. This year we are going to put safflower into our rotation. There are not any quick cures for soil salinity. Salinity must be looked upon as a water problem and a soil problem."

Erwin Hanley discussed the socio-economic causes of wind erosion, and how they have addressed it in their operation. "The changing economic climate has placed a large emphasis on growing cash crops. This has resulted in the use of marginal land that might have previously been used for forage production and as pasture for livestock.

... Poorly managed summerfallow is a major factor contributing to wind erosion. Our farm, which is situated in the Regina heavy clay, is affected little by wind erosion. This is because we continuous crop, thus avoiding, in general, any tillage operations such as summerfallowing. Through continuous cropping, we maintain a vegetative cover which further assists in the protection of our land."

Congratulations Kevin, Quinton and Erwin! Welcome to the SSCA.

Best wishes for a safe and happy holiday season from the SSCA's Board of Directors and Staff.

Need Some One-on-One Direction On Direct Seeding?

One day courses on how to direct seed into standing stubble are being planned for your region. This course will draw from recognized knowledge in the field and will include sessions on rotations, weed control, fertility, and equipment options, along with the theory and practice of direct seeding on a budget.

Cost: A Registration fee includes course materials and lunch.

Minimum number: A minimum of 12 registrants is required before the course will be conducted. Pre-registration is required and receipts will be issued.

Manual: A hand-out reference package (courses after January 1st will include the PAMI/SSCA Direct Seeding Manual) will be distributed at the start of the course. Use it during the day and save it for reference and contacts in the future.

Enquiries: If you are interested in this course contact your SSCA Regional Soil Conservationist. Their names and phone numbers are listed at the bottom of page 2.

How long can you afford not to practice soil conservation?

SSCA/Monsanto Membership Enhancement Program For NEW Members Only

A recent membership incentive program announced by Monsanto and the SSCA seems to have caused a little confusion among a few SSCA members. The program offers 3 year memberships for $50, with Monsanto contributing another $50 towards the cost of the membership. What some members don't realize, is that the advertisement reads that this program is available to **NEW SSCA MEMBERS** and does not affect existing membership. The idea behind the program is to recruit new people to the Association and SSCA is pleased that Monsanto has provided this incentive. Members at this time are reminded that the **SSCA Membership Enhancement Program** is still being offered. Members who recruit 6 new members in one year will receive an additional 3 year membership as a bonus. So use the Monsanto coupon and start recruiting new members so that you may qualify for your three year membership bonus. For more information on membership, contact the SSCA office in Regina at (306) 787-0558 or your regional soil conservationist.

SASKATCHEWAN SOIL CONSERVATION ASSOCIATION 1993 SOIL CONSERVATION FIELD DAY

JUNE 15, 1993

(in event of rain June 18, 1993)

MUNICIPAL AIRPORT, MOOSE JAW, SASKATCHEWAN
2 MILES NORTH OF THE TRANS-CANADA HIGHWAY
ON HIGHWAY #301

FEATURING THE LATEST TECHNOLOGY AND EQUIPMENT OPERATING ON A 200 ACRE DEMONSTRATION SITE:
DIRECT SEEDING - FERTILIZATION - CROP/WEED - SPRAYING - CONSERVATION TILLAGE - HARVEST/RESIDUE SPREADING
PLUS 80 ACRES OF DIRECT SEEDING DEMONSTRATIONS (SEEDED DURING THE FIRST WEEK OF MAY 1993)

In association with the:

WESTERN CANADA FARM PROGRESS SHOW
JUNE 16 - 19, 1993

CONSERVATION FALLOW AT THE SITE WITH
NEW IMPROVED RUSTLER
BY MONSANTO

SOIL FERTILIZATION
BY WESTCO WESTERN CO-OPERATIVE FERTILIZERS LTD.

MAJOR SPONSORS:
MONSANTO FLEXICOIL MORRIS

In cooperation with:
Mr. Gordon Noble, City of Moose Jaw, District #8
ADD Board, Saskatchewan Agriculture Development Fund, Saskatchewan Agriculture & Food and the Canada-Saskatchewan Agreement on Soil Conservation.

FOR MORE INFORMATION CONTACT:
SASKATCHEWAN SOIL CONSERVATION ASSOCIATION

132 - 3085 Albert Street
Regina, Saskatchewan
S4S 0B1
Phone: (306) 787-0558
Fax: (306) 787-0551

MAKE PLANS TO ATTEND THE 1993 SOIL CONSERVATION FIELD DAY AND THE WESTERN CANADA FARM PROGRESS SHOW!

NEW ECONOMIC WORKSHEETS READY!

3 new conservation economics worksheets are available.

Economics of Zero Tillage, Economics of Conservation Fallow & Economics of Shelterbelts.

Farmers use their own information in partial budgets to assess the conservation practices.

The worksheets are available from PFRA, Sask Ag & Food, & the SSCA.

Request For Submissions

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. Pertinent photographs would be appreciated Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert St.
Regina, Sask.
S4S 0B1

Recycled Paper

Prairie Steward . . .
Conserving the Land Resource
The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Fall/Winter Issue No. 8, 1992

SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
in co-operation with the Agriculture Development Fund

In This Issue:

New SSCA Service On The Way
(Conservation Farmers Helping Farmers)

Many farmers join the Saskatchewan Soil Conservation Association (SSCA) to share ideas with other conservation minded farmers. The SSCA, therefore, is developing a directory of its members who would be willing to accept phone calls from other SSCA members about their conservation practices and equipment.

If you have not already been contacted, Chris Zabek from the SSCA Central Office will be phoning to ask if you wish to share your experience and knowledge about soil conservation. This information will be compiled and maintained in a computerized directory. As a participant, you will have access to the knowledge of others while sharing your own soil conservation expertise with other interested farmers.

A limited number of farmer participants will be accessible by January 1993. The database will expand rapidly as more members are contacted.

How can you use this member benefit? Simply call the SSCA Regina office at 787-0558, in the New Year, and ask to use the **Conservation Farmers Helping Farmers** service. You will be able to specify the conservation techniques, equipment and practices you are interested in or have questions about. The directory will give you the names and telephone numbers of any members who have experience with the conservation methods or equipment in question. These details will be provided to you so that you can call these SSCA members and talk about your questions.

EXAMPLES OF HOW **CONSERVATION FARMERS HELPING FARMERS** CAN HELP YOU AS A MEMBER OF THE SSCA

1. Before you buy a new Flexi-coil airdrill or Acra plant system to direct seed your farm, get the names and phone numbers of SSCA members who are using it now.
2. Do you have questions about chemical weed control in specialty crops in a conservation system? Find out which SSCA members have weed control experience with the specific crop you have in mind.
3. Interested in modifying your current seeding equipment to handle high residue levels? Get the names and phone numbers of SSCA members who have done it.

The **Conservation Farmers Helping Farmers** database will be available for use at the SSCA Annual Meeting in Moose Jaw, February 8th and 9th. Step up and give it a try! You might be able to help yourself while doing a good turn for another conservation minded farmer.

Conservation farmers examine direct seeded barley.

Grazing vs Cropping

By Jim Graham
Livestock Agrologist, Saskatchewan Agriculture & Food
Swift Current

Saskatchewan is traditionally a wheat province and because of this, when we speak of pasture or grazing land, we think of it being on waste or marginal land. I really dislike the word waste land because it implies worthless. Seeding marginal land back to grass fits in with soil conservation. In fact, at this time, the economics would suggest better quality land may gross more from grazing than cropping.

In this article I want to put forth an argument supporting grazing over cropping in Southwest Saskatchewan. Suppose we have a quarter section of average land:

> Wheat scenario (1/2 crop) 80 acres x 25 bushels/acre x $3.00/bushel = $6,000.00 gross.
>
> Grazing scenario (160 acres seeded, 120 days grazing for 40 steers) Gain = 2 lbs/day or 240 lbs x 40 head x $.90 = $8,640.00 gross. An alternative to grazing is selling the hay (1 ton/acre x 160 acres x $50.00/ton = $8,000.00).

Grazing trials that have been done support one acre/steer/month and a gain of 2 pounds per day on seeded grass. There is possibly more management in a livestock program because the grass has to be monitored to make sure you are not overstocked. It is important to leave carry over to protect the plants and trap snow to ensure a good stand the next year.

What about the expenses? Cropping costs are fairly straight forward but livestock costs are more difficult to calculate. The reason is that feeders have to be bought and sold and price isn't guaranteed. The price can fall or rise between buying and selling. Also, the price tends to fall as the animals get heavier. The extra risk may be offset by the potential for more profit.

If the land is rented, what does the landlord get? Cropping program at 1/3 crop share = $2,000.00. Grazing project at 120 days x $.35/head/day x 40 = $1,680.00. This would suggest some adjustments need to be made in the landlord-tenant situation.

So what is holding people back? The land has to be seeded to grass with little potential income in the first year, but once established it is there for several years. Fence has to be built, a water source is needed and livestock have to be checked often. In some cases these obstacles will be too costly. However, in cases where water or fence exist, grazing is an alternative to cropping and it sure fits with soil conservation.

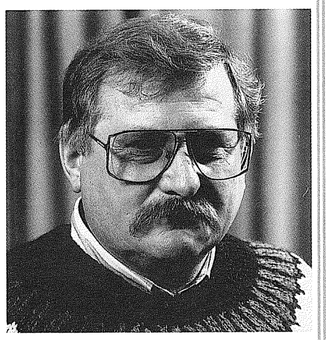
Fast Facts On Soil Conservation

Source: Statistics Canada and various agricultural fact sheets

- Saskatchewan farmers enrolled over 58,000 acres into forage under the 10 year option of the Permanent Cover Program I and almost 100,000 acres under the 21 year option. PCP II saw 85,000 and 263,000 acres of forage planted under the 10 and 21 year options, respectively.
- About 47% of the earth's land surface is rangeland.
- Saskatchewan has 40% of total Canadian cropland. It also has 72% of the national summerfallow acreage.
- About 24% of Saskatchewan farms take some measures to control soil salinity.
- A 40-bu./acre wheat crop produces straw containing nutrients worth as much as $14.23 per acre.
- Field shelterbelts can reduce wind velocities for up to 20 times the height of the trees.
- Soil organic matter can hold about 2.5 times its weight in water.
- 25% of the land seeded in Canada was prepared using conservation tillage.

Association Information

President's Message



Dave Bueckert
SSCA President

A great deal of activity has taken place since my last report. Over the summer and fall months, members of the SSCA Board of Directors attended numerous field days and tours. It is wonderful to see such a good turn out at these events. Like many other Saskatchewan farmers, we've completed a rather indifferent and difficult harvest this year. However, with fall upon us and winter closing in quickly we're gearing up for a very important winter extension season.

Proposal Update

In my last column I spoke about the proposal that the SSCA was developing to extend and reform soil conservation programming. It has received strong interest from a number of ADD Boards. Whether you agree or disagree with the proposal, the main point is that we need a vocal response from farmers as to what they would like to see under the next program. We must keep sight of our objective: "To continue Soil Conservation Programs". Don't let the details and internal, local politics cloud the issue of continuing conservation programs. Farmers and local ADD Board leaders clearly have a responsibility to NOT lose intensity when it comes to delivering the message that farmers need continuing soil conservation programs.

On the political scene, the SSCA Executive met with the former Minster of Agriculture and Food. We are now in the process of meeting with the new Minister of Agriculture, the Agriculture Caucus, the new Minister of the Environment and the Environment and Resources Caucus. The SSCA Board of Directors is committed to working with all levels of government to ensure soil conservation programming continues. I hope to be able to give you a progress report at the SSCA annual meeting in Moose Jaw.

Australian Trip

I recently travelled to Australia with Gerry Willerth, John Kiss, the Executive of the Manitoba-North Dakota Zero Till Farmers Association (Ron Bell, Dennis Haugen) and Bob Bradley of PFRA. We attended an International Soil Conservation meeting and toured New South Wales with a number of local soil conservation groups. (see article page 6) The trip was very interesting and beneficial. I look forward to establishing a closer working relationship with the Manitoba-North Dakota Zero Till Farmers Association.

Annual Meeting and Field Day

The 1993 SSCA Annual Meeting and conference promises to be another winner. **"Direct Seeding: Making It Work In The Drier Soil Zones"** is the theme of this year's conference. It will be held in **Moose Jaw**, February 8th and 9th. For more information see page 14 or call the SSCA Regina office. The attendance at last year's conference was fantastic! I look forward to seeing you in Moose Jaw.

Speaking of direct seeding and soil conservation, make plans to attend the **Soil Conservation Field Day and Direct Seeding Demonstration** at the Moose Jaw airport, June 15th, 1993. The SSCA has leased a 200 acre demonstration site and preparations are well under way. More information is available on page 16 of this issue.

The SSCA is also cooperating with PAMI to put together a production manual on direct seeding. This binder should be ready by January 1st. For more information call Garry Meier in Tisdale (873 4290). The Regional Soil Conservationists are also planning a number of Direct Seeding short courses this winter. Contact your Regional Soil Conservationist for more information. Their names and phone numbers are at the bottom of this page.

I met quite a few of you at various field days and functions over the summer months. I hope to have the pleasure of meeting any of you that I haven't already met in the months ahead. On behalf of the Bueckert family, the SSCA Executive, Board of Directors and Staff, I want to wish you the very best for the upcoming holiday season! We'll see you in Moose Jaw in February!

SSCA Staff Update

The SSCA would like to welcome Crystal Dash to the Central office. Crystal joined us at the beginning of September and is taking over reception/secretarial duties from Cheryl Armbruster. Cheryl returned to nursing school fulltime this fall. Cheryl is still involved with the SSCA as she comes in 4 days a month to coordinate membership details. We wish Cheryl all the best in school and welcome Crystal to the SSCA!

SSCA Group Photo

Back row left to right, John Kiss, Paul Carles, Bob Linnell, Chris Zabek, Terry Pearse, James Lokken, Garry Meier,

2nd row Ray Kettenbach, Gerry Willerth, Ken Sapsford, David Thompson, Marv Fenrich, Dean Smith, Pat Flaten

Front row Juanita Polegi, Blair McClinton, Carolyn Fife, Yvette Crane, Garth Patterson

(missing Dave Bueckert, Gary Schweitzer, Crystal Dash, Cheryl Armbruster)

From The Mouths Of Babes

One evening, in late October, a woman and her 3 year old daughter were travelling home to their farm. Suddenly they were assaulted by the smell of smoke. A mile down the road, they came upon a farmer standing at the edge of a burning field. Shocked, the little girl said, "Mommy, why is that field on fire? Her mother replied "The farmer is burning his stubble." The little girl thought about it for a minute and then turned to her mom, "But, Mommy, why is he burning the stubble? Doesn't he want his field any more?"

Editor's note: This was an actual submission to the Prairie Steward. It's interesting that a 3 year old can see what some adults can't.

REGIONAL SOIL CONSERVATIONISTS:
(located in Rural Service Centres)

Blair McClinton, North Battleford,	(306) 446 7650
Garry Meier, Tisdale,	(306) 873 4290
Garth Patterson, Saskatoon,	(306) 933 5287
Juanita Polegi , Yorkton	(306) 786-1526
Pat Flaten, Swift Current,	(306) 778 8284
Bob Linnell, Weyburn,	(306) 848 2381

HEAD OFFICE:

132-3085 Albert Street
Regina, SK
S4S 0B1
(306) 787 0558

John J. Kiss, Executive Manager
Carolyn Fife, Office Manager
James Lokken, Economics Specialist
Yvette Crane, Education Specialist
Chris Zabek, Shelterbelt Information Officer
Ray Kettenbach, Communications Specialist
Crystal Dash, Receptionist/Secretary
Cheryl Armbruster, Receptionist/Secretary

Coming Events

The following are **proposed** dates for the one day direct seeding courses in the **South East Region**. For more information contact: Bob Linnell (306) 848-2381

December: 2nd Qu'Appelle, 8th Redvers, 9th Lampman, 10th Oxbow, 15th Midale, 16th Montmartre

January: 5th Estevan, 6th Wawota, 7th Semans, 19th Quinton, 20th Fillmore, 21th Stoughton, 28th Whitewood

February 1st Sintaluta, 2nd Moosomin, 4th Lumsden, 10th Radville, 11th Torquay, 15th Carlyle, 16th Strasbourg, 18th Cupar

March 2nd Milestone, 3rd Grenfell

January 4 & 5th
Saskatchewan Alfalfa Seed Producers annual meeting, Saskatoon, SK For more information contact: Wayne Goerzen (306) 975-7014

January 6-8th
Western Canadian Wheat Growers annual meeting, Saskatoon, SK For more information contact: (306) 586-5866

January 12th
Grass production and Marketing Seminar, Saskatoon, SK

January 13th
Saskatchewan Forage Council annual meeting, Saskatoon, SK

January 12-15th
Crop Production Show, Saskatoon, SK

January 17-20th
The 15th annual Alberta Conservation Tillage Society annual meeting: Accelerating Conservation, Edmonton, AB For more information contact: Russ Evans (403) 936-5306

January 17-20th
Interprovincial Range Management Conference, Saskatoon, SK For more information contact: Faisal Taha (306) 569-2663

January 25-27th
The 15th Annual The Manitoba-North Dakota Zero-Tillage Farmers Association Workshop "Managing Moisture for More Profit", Brandon, MB For more information contact: Lyle Samson (701) 852-8895

February 8 & 9th
SSCA annual meeting and Direct Seeding Conference: Making it work in the drier soil zones, Moose Jaw, SK For more information contact: The SSCA (306) 787-0558 or see page 14

June 15th
Soil Conservation field day, Moose Jaw, SK See back page for more information or contact the SSCA Regina office (306) 787-0558

TipKit Corner

This column presents only the highlights from the Soil Conservation TipKit. For more information consult your TipKit or your SSCA Regional Soil Conservationist.

November

- Develop a soil management plan for your operation. Include field records, sketches, problems and possible solutions.
- Develop a soil management evaluation table to identify the effects of proposed farming practices on your operation.
- Begin list of upcoming extension meetings of interest.

December

- Gather figures on the economics of soil conservation. This allows comparison between current and proposed practices.

January

- Develop a tillage plan which will conserve crop residue either by reducing the number of tillage operations or by using alternative methods.
- Begin your fertilizer planning, take different areas of the field into consideration. Don't forget to take soil tests before seeding if you have not already done so in the fall.
- Remember to order tree seedlings from the PFRA Shelterbelt Centre by February 1st.

February

- Plan your crop rotation, taking into account disease potential, residue cover, weed control and herbicide residues.
- Plan your field shelterbelts for NEXT year.
- Plan new forage plantings.
- Attend SSCA annual meeting and direct seeding conference February 8th & 9th.

March

- Consider seeding techniques and equipment needed.
- Consider conservation tillage techniques and equipment needed.
- Determine if emergency control of wind erosion is needed.

For your **free** copy of the **TipKit** write to:

TipKit
c/o Canada-Saskatchewan Agreement on Soil Conservation
B33 - 3085 Albert Street
Regina, SK
S4S 0B1

The SSCA Is Pleased To Welcome The Following New Members:

Andrew, Reed	Regina, SK	Hoppe, Gerard	Cando, ND	Tiede, Ralph	Strathmore, AB
Archdekin, Glenn	Landi, SK	Isley, Wayne	Rosetown, SK	Turner, Lorne	Eckville, AB
Arrison, Wayne	Red Deer, AB	Jones, Ernie	Shell Lake, SK	Welsh, Larry	Airdrie, AB
Bell, Ron	Birtle, MB	Kane, Greg	Nokomis, SK	White, Elwood	Pangman, SK
Benedict, Don	Hanna, AB	Kowalchuk, Julien	North Battleford, SK	Whiting, Don	Lloydminster, SK
Burwash, Neil	Macklin, SK	Lindberg, Ronald	Perth, ND	Wiebe, Rudy	Kerrobert, SK
Cowan, Bill	Hartney, MB	Lindwall, Wayne	Lethbridge, AB	Wierenga, Andy	Neerlandia, AB
Davis, John	Daysland, AB	McCanna, Ralph	McCanna, ND	Wilderman, Wayne	Blackie, AB
Domes, Quienten	Weyburn, SK	Meinert, John	Regina, SK		
Ekre, Robert	Beach, ND	Morin, Kevin	Edam, SK		
Finnie, John	Kenton, MB	Nevin, Jim	Rapid City, MB		
Flaten, Ray	Weyburn, SK	Perkins, Mark	Wainwright, AB		
Fotheringham, Gregg	Reston, MB	Poncelet, Robert	Viscount, SK		
Fowler, John W.	Arbourfield, SK	Poppe, Art	Carman, MB		
Gelley, Dick	Regina, SK	Raine, John & Margaret	Wilcox, SK		
Graham, John	Vulcan, AB	Samson, Lyle	Minot, ND		
Graw, Henry	Manning, AB	Sankey, Murray	Veteran, AB		
Green, Murray	Airdrie, AB	Sather, Calvin	Watrous, SK		
Greenland Fertilizer	Tisdale, SK	Schaefer, Dan	Minot, ND		
Hanley, Erwin	Regina, SK	St. Croix, Ron	Kenmare, ND		
Hansen, David	Lumsden, SK	St. Onge, Ron	Estevan, SK		
Hearn, Bryan	St. Paul, AB	Steinley,Clinton	Empress, AB		
Henke, Randy	Sawyer, ND	Stryker, Dan	Foremost, AB		
Hermans, John	Edmonton, AB	Thiessen, Dennis	Aberdeen, SK		

We take this opportunity to thank the following new corporate members:

Flexi-coil Ltd. Saskatoon, SK

Saskatchewan Institute of Pedology Saskatoon, SK

and our on-going Corporate Sponsors:

Monsanto Saskatoon, SK

Ducks Unlimited Winnipeg, MB

Dow Elanco Newmarket, ON

Centre for Holistic Resource Mgmt. Albuerqueque, NM

How long can you afford not to practice soil conservation?

*Direct Seeding: Making It Work In The Drier Soil Zones**

8 & 9 February 1993 Trade Building, Exhibition Grounds Moose Jaw, Saskatchewan

1993 Saskatchewan Soil Conservation Association Annual Meeting

The Saskatchewan Soil Conservation Association in cooperation with District #8 ADD Board, Saskatchewan Agriculture & Food & Saskatchewan Agriculture Development Fund. Special Thanks to Monsanto & Flexicoil for their Commitment to Soil Conservation in Saskatchewan

* A Complete Written Conference Proceedings will be Available at time of Registration.

MONDAY FEBRUARY 8

9:00 a.m. - Noon
Registration and trade show set-up.

1993 Conference Chairperson:
Gerry Willerth, President-Elect,
Sask. Soil Conserv. Assoc.

1:00 p.m. Greetings:
Sask. Soil Conserv. Assoc., City of Moose Jaw, Province of Saskatchewan

1:15 p.m. Keynote Speaker: Dr. Wayne Lindwall, Ag. Canada, Lethbridge, Alberta.
"Why Direct Seeding Will Work and Is Profitable"

1:45 p.m. Direct Seeding: Residue Management
"What's Just Right?"
Ken Sapsford, District #23 ADD Board, Perdue, Saskatchewan

2:00 p.m. Direct Seeding: Cropping Rotations
"Profitable Rotations that make $ense."
Stu Brandt, Ag. Canada, Scott, Saskatchewan.

2:15 p.m. Direct Seeding: Soil Moisture Benefits.
"Improving Water Use Efficiency." Charles Maule, Ag. Engineering, U of S., Saskatoon, Saskatchewan.

2:30 p.m. Questions for Panel Members

2:45 - 3:15 p.m. Coffee Break in Trade Show Area
Sponsored by: Harmon Industries Ltd.

Afternoon Session Chairperson:
Marv Fenrich, Sask. Soil Conserv. Assoc.
North West Director

3:15 p.m. Direct Seeding: Row Spacing
"Making It Work For You."
Guy Lafond, Ag. Canada, Indian Head, Saskatchewan.

3:30 p.m. Direct Seeding: Fertility
"Making It Work In One Pass."
Con Campbell, Ag. Canada, Swift Current, Saskatchewan.

3:45 p.m. Questions For Panel Members

4:00 p.m. Experiences in Farming:
"Attitude: Converting To Profitable Conservation Family Farms."
Doreen Willerth, Indian Head, Sask.
Sue Speir, Brock, Saskatchewan
Trudi Dunham, Shaunavon, Sask.

4:45 p.m. Questions For Panel Members

5:00 p.m. Adjourn to Refreshment Bar/Trade Show

5:30 p.m. Conference Banquet:
Baron of Beef & Buffalo
Master of Ceremonies: Mr. Ken Miller, Chairman of the District #8 ADD Board.

6:30 p.m. Enviro-Student Challenge Presentation

6:40 p.m. Sask. Soil Conserv. Assoc. Slide Contest Awards

7:00 p.m. Comedian ***Wayne McLean*** & "JARWIN"; Skits on Small Town Saskatchewan by ***Chocolate Moose***.

8:00 p.m. Informal Question/Answer Bear Pits on Direct Seeding

Moderators: Garry Meier & Ken Sapsford
Bear Pit #1 Machinery & Modifications (Ben Dyck & Reg Mount)
Bear Pit #2 Fertility, Weed Control, Row Spacing (David Rourke & Guy Lafond)

Moderators: Bob Linnell & Garth Patterson
Bear Pit #3 Rotations & Disease Prevention (Con Campbell & Stu Brandt)
Bear Pit #4 Sask. Soil Conserv. Assoc. (SSCA Board Members)

TUESDAY FEBRUARY 9TH

Morning Breakfast Chairperson:
Dave Bueckert, President Sask. Soil Conserv. Assoc.

7:00 a.m. **Early Bird Breakfast:**
"The Future of Soil Conservation In Saskatchewan."
7:30 a.m. Government of Saskatchewan
7:40 a.m Government of Canada

7:50 a.m. Sask. Soil Conserv. Assoc. Annual Business Meeting.
"What the Future Holds; and the SSCA Conservation Farmer to Farmer Program."

Morning Panel Chairperson:
Paul Carles, Sask. Soil Conserv. Assoc.
South East Director

8:45 p.m. Direct Seeding: Weed Control
"Making the Most of Your $'s."
David Rourke, Minto, Manitoba

9:00 a.m. Direct Seeding: Sprayers
"Improving Efficiency with New Technology."
Bill Reed, U of S., Saskatoon, Saskatchewan.

9:15 a.m. Questions for Panel Members

9:30 - 10:00 a.m. Coffee Break in Trade Show Area Sponsored by: Farm Credit Corporation of Canada

Panel Chairperson: Dean Smith, Sask. Soil Conserv. Assoc.
South West Director.

10:00 a.m. Direct Seeding: Experiences of Three Farmers:
"What we Will and Won't do Again!"
Bob Siemens, Fiske, Sask.
Darald Marin, Radville, Sask.
Ralph Howes, Moose Jaw, Sask.

10:45 p.m. Questions for Panel Members

11:00 p.m. Direct Seeding Equipment: What Are the Options?
"From the Back of the Combine to Seed in the Ground." Garry Meier, Sask. Soil Conserv. Assoc., Tisdale, Sask.

11:30 - 1:00 Soup and Sandwich Lunch/Trade Show

Afternoon Panel Chairperson:
Dave Thompson, Sask. Soil Conserv. Assoc. Director, East Central Region

1:00 p.m. 1993: What 3 Farmers Are Planning.
"Rotation, Planting, Weed Control & Harvesting."
Don Gray, Lacadena, Saskatchewan
Randy Henke, Sawyer, North Dakota
John Bennett, Biggar, Saskatchewan

1:45 p.m. Questions for Panel Members

2:00 p.m. Changing Your Cropping System:
"Having a Positive Attitude."
Glen Hass, University of Saskatchewan

Draw Chairpersons: Terry Pearse & Gerry Willerth, Sask. Soil Conserv. Assoc.

2:45 p.m. Draw for the BIG Door Prize

NORTHERN SASKATCHEWAN
FLY-IN FISHING TRIP FOR 2 AT FOSTER LAKE LODGE*
(2 nights and 3 days of all inclusive fishing during the lst week of July 1993. Departure point is La Ronge, Sask.)

5 NIGHT VACATION PACKAGE IN CYPRESS HILLS PROVINCIAL PARK - CYPRESS FOUR SEASONS RESORT*
(Package must be used before September 1, 1993. Final booking dates for vacation package must be selected by the winner before February 26, 1993.)

BINOCULARS*
(To watch your neighbour cultivate.)

"Remember: You MUST be There to Win!"

* All winners must accept the draw prizes within the limits set by the SSCA. All prizes are non-transferable and have no cash value.

3:00 p.m. Adjourn

CONSERVATION EDUCATION PROGRAM
IN THE SECOND FLOOR MEETING ROOMS

Chairperson: Yvette Crane, Sask. Soil Conserv. Assoc.

MONDAY, FEBRUARY 8, 1993

12:30 - 2:45 p.m. Enviro-Student Challenge Presentations

2:45 - 3:15p.m. Student Displays in Main Area
5:00 - 5:30 p.m. Student Displays in Main Area

6:30 p.m. Presentation of Awards for Student Challenge.

TUESDAY, FEBRURAY 9, 1993

9:00 - 11:30 a.m. Teachers Conservation Workshop "Project Soils" Lunch

SPECIAL NOTES FOR CONSERVATION GROUPS

If you are planning on attending the conference as a group or are organizing a bus tour, phone Bob Linnell at (306) 848-2381. Bob can help you with local organization and pre-registration.

Conference Registration Fees

Pre-registration before January 22, 1993
Single $45 includes: Meals only.
Single $55 includes: All meals & conference proceedings.
Husband & Wife* $80 includes: all meals & i copy of conference proceedings. *(Must register together)*

After January 22, 1993
Single $60 includes: Meals only.
Single $75 includes: All meals & conference proceedings.
Husband & Wife $90 includes: all meals & 1 copy of conference proceedings. *(Must register together)*

Daily Registration Fees
Day 1 February 8, 1993 $20 does not include banquet or conference proceedings.
Day 2 February 9, 1993 $25 includes: Breakfast & lunch only:
Extra banquet tickets $15
Extra copies of Conference Proceedings $15

Conservation Education Program

Conference registrants are welcome to attend the educational program sessions. Please contact Yvette Crane in Regina at (306) 787-0555 (fax: 787-0551) if you intend to participate in Tuesday's workshop.

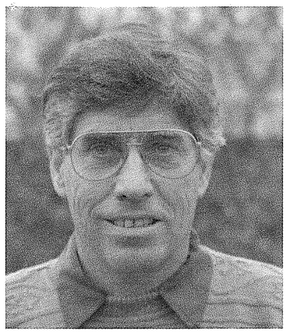
DIRECT SEEDING: MAKING IT WORK IN THE DRIER SOIL ZONES
Trade Building, Moose Jaw Exhibition Grounds, Moose Jaw, Saskatchewan
February 8th & 9th, 1993

Registration Form (please print)
Name_____ Address _____
Postal Code _____ Telephone _____ Fax _____
Agency/Organization _____ Occupation _____
Are you an Agricultural Producer Yes ____ No ____ (Check one)

Pre-Registration before January 22, 1993:
Single - No Proceedings $45 ☐ Single & Proceedings $55 ☐ Husband & Wife $80 ☐

NOTE: This form is for the conference pre-registration on ly. Room reservation information is listed on this brochure. Please make cheques payable to Saskatchewan Soil Conservation Association Inc.

Mail To: Direct Seeding Conference SSCA #132-3085 Albert Street
Regina, Saskatchewan S4S 0B1



North East Director Profile

- Terry Pearse
- Married to Marilyn
- 2 children
- Farms near Tisdale
- Grey Soil Zone
- Cereals, oilseeds, forage seeds and specialty crops

Q: ***What prompted you to get involved with the SSCA and how long have you been active with the association?***

A: I've always been very involved with soil conservation and very concerned about land preservation and so forth. I really wasn't aware that the organization existed until just prior to becoming a member. I was approached to serve as a director because the director for the North East had resigned. I decided to become a director and get very involved. I haven't been around since day one like some of the folks, but I've been involved for the two full years and I'm seeking another term this year.

Q: ***What are some of the conservation practices you're doing on your farm and how long have you been doing these?***

A: I've been involved for years, but I've just recently become involved in the direct seeding practice, and various conservation techniques such as continuous cropping and ditch renovation and so forth. The last two years I've direct seeded my total crop acreage and prior to that, I was doing some experimentation with it.

Q: ***What do you think could be some of the reasons why more people in the province aren't practicing conservation?***

A: That's a tough one. Probably, the biggest reason is because they're not really that aware of what's happened to our soil and the degradation that's going on. They haven't seen the economic benefits from conservation farming: They think "well yes, you could do this type of thing, but it's going to cost you X number of dollars and there isn't a positive economic side". Now some of us can show that there is a economic benefit from it and it's starting to become more popular.

Q: ***Do you see governments taking a little more aggressive stand on soil conservation?***

A: I can see that happening down the road. If the Canadian taxpayer is going to continue to help foot the bill for some of our crop insurance programs, I think that we, as farmers, can expect to have to cooperate with some land use aspects.

Q: ***Do you think that we're going to have a compliance program along the lines of the American Farm Bill?***

A: I think that could possibly come down the road. I think if there's enough voluntary compliance through the efforts of the PFRA and other organizations and the economic benefits are realized, there might be enough voluntary compliance and we want it to go that route. If there isn't, if that tax dollar keeps coming in, I think ultimately we will end up with a similar type of compliance.

Q: ***So it'll come down to a choice for farmers to make: they'll either be in the program and practise soil conservation or, they won't be tied into any support programs?***

A: I can see that's what could happen, which of course is similar to what they do in the US. I'm hoping that the farmer will be farsighted enough that society is not going to have to take that route, but it may happen.

Q: ***What are some of the benefits of joining the SSCA?***

A: The benefit that, I think, we've seen so far, is the fact that it gives the person the opportunity to educate oneself. It allows people to belong to an organization that is on the cutting edge of a conservation program. It's a route to learn, improve and to talk to people that are practicing and, generally speaking, making conservation work.

Q: ***What sort of impact do you hope to make by being a director of the SSCA?***

A: When I'm finished with this, I can think that I had somewhat of an impact in protecting our valuable land resource in this province. I want to be able to say, yes, I played an important part in conservation efforts. I think it's a very important thing to feel good about.

Q: ***As the current SOS program will cease to exist on April 1st 1993, what kind of a soil conservation program for the future would you like to see? Would it be similar to the exiting SOS program?***

A: I think the SOS as it is, is pretty well finished. I think the route we tend to try and follow, right now, with the larger conservation demonstration days and fields is probably a way to go. The information has really been getting out this last year and everybody is certainly aware of what we're doing. But we still have to stress that economic situation. I think that's so important, to prove to people you can make a dollar in doing this. Obviously, if we weren't in such a bad economic situation, I think conservation would take off better. Now, someone could argue another way that if times were better, the farmers would say to hell with conservation, and wouldn't bother. But I don't look at it that way. I think if there was a little more money around, farmers would be a little more willing to try some of these conservation ideas.

3rd Annual SSCA Photo Contest

- Prints and Slides welcome.
- Three Categories:
  - Soil Degradation
  - Soil Conservation
  - Wildlife & Habitat
- Open to Amateur photographers only please.
- Prizes will be awarded at the annual meeting in Moose Jaw on February 8. You must be present to win.
- All photos (slides & prints) will be returned.
- Send prints and slides by January 15, 1993 to:

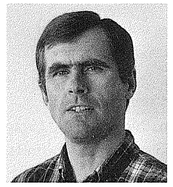
Garth Patterson
3735 Thatcher Ave,.
SASKATOON, SK
S7K 2H6
PH: 933-5287

Previous Photo Contest Winners

Courtesy Jim Romo, Saskatoon, SK

Courtesy Dave Lukash, Yorkton, SK

Regional Roundup



Time For A Change

By Garry Meier
SSCA N.E. Regional Soil Conservationist

The spirit of environmentalism is rising across Canada and is confronting us all with one simple truth. What we do or fail to do, individually and as a society, is going to have a profound influence on the environment and the quality of life that we are going to leave for our children. Agriculture worldwide has had a greater impact on the environment than any other industry. Agriculture's difficulty in co-existing with life forms not used in agricultural production is now drawing criticism from a growing number of urban residents.

Agricultural producers today have to be conscious of some key points as they conduct their daily activities. The first is that they have to learn they are sharing the landscape on which they conduct their business with other life forms, including a variety of wild plants and animals.

The second point is that they have to share the same landscape with their urban neighbours. Producers have to realize that, if they want to rely on continued public support for their farming operations, they are going to have to change the way they are currently doing business.

Urban residents are convinced that they are contributing major dollars to farmers' cash flow. Like any group that pays money out of its pocket, sooner or later they are going to ask for something in return. Urban dwellers are going to demand good land stewardship practices in return for their investment in agriculture.

Pollution and environmental degradation, up until now, often have not been associated with rural life. News headlines highlight urban centres and industries polluting water systems by dumping wastes created by their existence into river systems to be transported downstream and out of sight.

Agricultural producers must realize that whether the waterway is contaminated with waste created in an urban setting or by soil washing off a farmer's field, the end result is the same. The life form that was occupying that waterway in its original state will be adversely affected and may perish.

Farmers cannot remove themselves from the big picture when society is talking about air and water pollution. Farmers must become receptive to input from outside sources. Surveys indicate that an increasing number of urban residents feel farmers are not doing a very good job of managing their soil. Agriculture will have to try to address this concern.

Modern agriculture on the prairies is carried out using big equipment and high speeds. These can be directly linked to a lot of the soil degradation problems that we are experiencing today. Wind and water erosion are the two most visible symptoms. Urban dwellers may not know what the cause of the problems are, but they can see the results as they travel the highways and they know that they want these problems corrected.

There are a number of things that the farmers can do to improve their public image. One of the first is to plant shelterbelts on their farms. Shelterbelts serve several purposes. They provide a positive economic value to the farm by reducing wind speed at the soil surface. Crops such as canola, sunflower and alfalfa consistently produce higher yields when protected to some extent from the wind. Another benefit of shelterbelts is that they are aesthetically pleasing. Shelterbelts leave a positive image of agriculture in the minds of urban residents as they drive down the highway. However, shelterbelts cannot compensate for poor soil management in-between the tree rows.

With the knowledge that trees create a positive public image, farmers should reconsider their desire to clear every last tuft of bush from their fields. Historically, these little patches of trees were left because of, perhaps, salinity or maybe they tended to hold water late into the spring and farmers just farmed around them. However, the drought years of the 1980's made it feasible and quite possible to go in and clear these areas.

Farmers have to ask themselves if they really need that last acre on that quarter section. Would that tree cover be better off left to both serve as wildlife habitat and improve the public image of farmers in the eyes of their urban neighbours?

Farmers could also consider alternate uses for some of their more fragile land areas. Many farms have some land that possibly should never have been broken and put into annual crop production in the first place. With continuing soil degradation, the point may well have been reached where it is not economically or physically feasible to produce annual crops on this land.

Farmers should consider trying to generate revenue out of this land by using means other than annual cropping. Establishing forages for use in the livestock industry or establishing trees to produce wood products are only a couple of possibilities for land use adjustment.

Tillage has been the single biggest factor causing soil degradation in Western Canada. Traditionally, farmers have utilized tillage to control weeds in summerfallow or to prepare seed beds for cropping. However, tillage destroys soil surface residues and exposes the soil to the forces of wind and water erosion. As well, tillage incorporates more oxygen into the soil surface which leads to higher rates of soil organic matter breakdown.

To improve both soil quality and their image with their urban neighbours, farmers will to have to search for ways to reduce the amount of tillage occurring on their farms. An alternative farmers can consider for tillage is the judicious use of herbicides to control growth in summerfallow years, in the fall and prior to seeding. With the costs of some herbicides declining, it is becoming economically more feasible to replace some tillage operations with a herbicide treatment.

Another alternative to tillage is the practice of direct seeding. Direct seeding is the largest single change that Western Canadian farmers can make in the way they manage their soil. It will have many long reaching effects. Direct seeding has the potential to go a long way in making farming more profitable in the future. Other benefits from direct seeding include a reduction in soil and water erosion, fewer negative impacts on the environment, and an improved image of agriculture in the eye of the urban dweller.

East Central Report

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

I returned from Maternity Leave October 19th. Thanks to Western Resource Management Associates for filling in while I was away.

Shortly after my return, our Regional Conservation Team met with the district SOS Technicians. All of the districts offered successful direct seeding programs over the summer. Plans are well underway for winter newsletters and meetings in most of the districts. It's encouraging to see the districts' continued commitment to the SOS program, even though, at the time of writing, no new soil conservation program has been announced.

Interestingly, a local newspaper ran an editorial that suggested the SOS program is seen as being redundant by many producers. According to the article, some producers feel that producers already know about soil conservation so there is no need to "prove" the various practices. I like to believe that is the opinion of only a few producers and not that of the majority. Without the SOS program, would direct seeding have gained such a following? Would we have seen the increased interest in applying 2,4-D in the fall and in conservation fallow? How many field shelterbelts would there be? According to PFRA, over 500 miles of field shelterbelts have been planted in the East Central Region during the summers of 1990, '91 and '92. This is a significant increase in the number of miles planted pre-SOS. So, while SOS has encountered a few problems, overall, the program can be viewed as a success in this region.

My own plans for the winter months include offering the Direct Seeding Course in cooperation with the districts. I also plan to continue with school presentations. I'm pleased that a couple of students from Lanigan Central High School will participate in SSCA's the Student Environmental Challenge in February. I look forward to assisting them with that project.

I am happy that the number of SSCA members in this region has increased over the last few months. I invite all members, both new and long time, to give me a call if you have any questions about the SSCA, soil conservation, school visits or to set up a direct seeding course in your area. I look forward to meeting you at the various soil conservation events this winter.

Energy Use In Conservation Tillage

By Blair McClinton
SSCA N.W. Regional Soil Conservationist

Modern agriculture with its dependence on of tillage, fertilizers, pesticides and mechanization is very energy intensive. This intensive management has helped to increase total agricultural production worldwide. There is potential to reduce the amount of energy used while maintaining production. Reducing the amount of energy used on-farm has the potential to significantly lower costs.

When we think of energy use on the farm, we usually only consider direct energy costs such as farm fuels. These energy costs make up the second largest farm expense in Saskatchewan behind interest. In 1990, Saskatchewan farmers spent $376.3 million on farm fuel and lubricants.[1]

However, in a long term crop rotation study started in 1967, at the Swift Current Research Station, fuel accounted for only 33 to 51 percent of the energy used.[2] The rest of the energy used in crop production is from indirect sources such as fertilizer, pesticides and machinery.

Large amounts of energy are needed to manufacture fertilizer. In the Swift Current study, fertilizer was the second highest energy input ranging from 15 to 49 percent of the energy used in the various rotations.

Herbicides and other pesticides are also very energy intensive. However, since only small amounts of pesticides are used, they make up a small percentage (from 4 to 11 percent) of the energy used. 13 to 28 percent of the energy used in the various rotations was used to build and maintain machinery and buildings.

(conintued on page 13)

Sloughs Are Important To Province's Agriculture

Producers have traditionally regarded Saskatchewan sloughs as wastelands, obstacles to farming and incubators for mosquitoes. Today, a growing appreciation of these wetlands is causing many landowners to see them as critical components of their farms.

Unfortunately, the awareness of the value of sloughs to farm life is coming at a time when many of these wetlands have already been destroyed. Forty per cent of the province's sloughs have been drained and half of those that remain are affected by human activities.

How do sloughs help agriculture? Sloughs are important surface components of our groundwater system, acting like storage and supply tanks, water transfer basins, or discharge points, depending on how the water moves through them.

Wetlands recharge the water table by storing water that is slowly released into the groundwater aquifers that wells tap into. Ninety per cent of farms and many communities in rural Saskatchewan use wells for part or all of their water supply. The surface water can also be used as a water supply for sprayers or livestock.

Not only do wetlands maintain water supplies, they also improve water quality. The plants in and around the wetland help filter pollutants from surface water entering the slough. These plants also help control the spread of salts into cropland. They trap snow that helps provide soil moisture in nearby cropland and they can be a source of high quality hay. The pooling of surface water and the surrounding vegetation also help to reduce soil erosion.

Wetlands also provide food, water and shelter for a variety of wildlife at different times of the year. Some species, such as migratory birds, use wetlands and the surrounding vegetation from spring through fall, while frogs and muskrats use them year-round. Species like rabbits and deer only use wetlands once in a while, but they are important links in the food chain for predators like foxes, hawks and humans.

In Saskatchewan, some 45 kinds of waterfowl, 80 species of other birds and at least 30 mammals live in wetland areas. One-third of the province's rare, threatened, or endangered species call our wetlands home.

Saskatchewan is working to preserve wetlands for wildlife and agriculture-related industries. The province is doing this by participating in the North American Waterfowl Management Plan (NAWMP), an agreement among Canada, the United States and Mexico.

Various incentives are available to landowners in key NAWMP project areas across the province to implement conservation farming practices that reduce soil erosion and preserve wetlands.

For more information on wetlands, or for information on the North American Waterfowl Management Plan, contact: Saskatchewan Wetland Conservation Corporation, 110-2151 Scarth Street, Regina, Saskatchewan, S4P 3Z3. (306) 787-0726.

First Inter-Provincial Range Conference Planned

The Grazing and Pasture Technology Program, a joint venture by the Saskatchewan Stock Growers Association and the Agriculture Development Fund, is organizing the First Inter-provincial Range Management Conference in Saskatoon, January 17 to 20, 1993.

The Conference's major sponsors are: Saskatchewan Natural Resources (Parks), Wetland Conservation Corporation, PFRA, Saskatchewan Rural Development (Lands), Saskatchewan Agriculture and Food (Extension & Livestock), and Saskatchewan Environment and Public Safety.

The theme for the Conference is "Managing Rangelands for Sustainability and Profitability: Bringing Canadian Issues into Focus".

Renowned guest speakers from Western Canada and the Northern United States will deliver key-note addresses at the various sessions. Volunteer papers relevant to the conference theme will also be presented and discussed by conference participants.

For more information, please contact:

Faisal Taha Box 4752 Regina, SK S4P 3Y4 Telephone: (306) 569-2633

Energy Use In Conservation Tillage

(continued from page 4)

Fertilizer and farm fuel have the largest impact on energy use in crop production. These two inputs make up between 66 and 80 percent of the energy used, depending on the rotation. Producers who are interested in reducing their energy use should concentrate on these two inputs.

One of the reasons behind the renewed interest in direct seeding is to reduce fuel consumption. Many experienced direct seeders have claimed that they have cut their fuel bills in half. This could result in a total energy saving of from 15 to 20 percent in a continuous crop rotation. Producers can contribute to even greater energy savings if they reduce their equipment needs, thereby reducing the amount of energy expended to manufacture and maintain equipment.

Using nitrogen fixing legume crops such as peas, lentils and alfalfa in rotations can greatly reduce the amounts of fertilizer needed. In most areas of the province, only phosphate-based fertilizer (11-51-0) is used with legume and pulse crops. A pulse crop grown once every four years in a continuous crop rotation could result in a total energy saving of from 10 to 12 percent.

By reducing the amount of fertilizer applied, summerfallow will also reduce the amount of energy inputs needed. However, the environmental problems created by soil erosion and loss of soil organic matter are well known. Some of these problems can be reduced by using such conservation techniques as chemfallow. Energy use in the fallow year can be reduced by as much as 10 percent by substituting herbicides for tillage.

Conservation tillage techniques have the potential to greatly reduce the amount of energy needed to produce the same amount of food energy as is now produced using conventional energy intensive methods. Through the use of direct seeding techniques and proper rotations, including legume crops, energy inputs potentially can be reduced by as much as 25 to 30 percent.

1 Saskatchewan Agriculture and Food, 1992. Agricultural Statistics Factsheet.

2 Zentner, R.P., et al, 1989. "Effect of Crop Rotation and Fertilization on Energy Balance in Typical Production Systems on the Canadian Prairies". Agriculture, Ecosystems and Environment 25: pp. 217-232.

Is Low Input Agriculture Sustainable?

By Con Campbell, Guy Lafond, and Bob Zentner,
Agriculture Canada Swift Current and Indian Head

There is an apparent conflict between proponents of low input or organic and those that support the judicious use of commercial fertilizers in agricultural production activities. In fact, it might not be too inaccurate to suggest that in today's "Green conscious" society, many people who are not intimately associated with this area of agricultural science tend to be of the opinion that fertilizers are bad for the soil. In this article we present up-to-date experimental data that demonstrate irrefutably that, not only is proper fertilization desirable for maintenance of sustainable production, but that even the inclusion of legumes in the system is not sufficient by itself in maintaining a fertile soil.

The results reported below were obtained from long-term crop rotation studies conducted on: (i) a moderately fertile, medium textured soil in the semi arid region of Southwestern Saskatchewan (Swift Current), and (ii) a fertile, heavy clay soil in a sub-humid climate in Southeastern Saskatchewan (Indian Head). The studies have been ongoing at Swift Current since 1967 and at Indian Head since 1957. In the figures that follow we present the time trends in grain yields for: (i) fallow-wheat-wheat, (ii) Sweetclover green manure-wheat-wheat, (iii) fallow-wheat-wheat-legume hay-legume hay-legume hay, and (iv) continuous wheat rotations, either fertilized with N and P or unfertilized. The time trends were obtained by calculating the 5-year running mean yields (i.e., every value is the average of the closest 5 years' yields); this approach was used to minimize the impact of weather on the observed results.

The results clearly show the following facts:

(i) In the more humid area where the study has been in place longer, the yields are much higher, therefore nutrients removed in the grain were greater. Because the controls (unfertilized systems) receive absolutely no fertilizers, they have seriously depleted the natural fertility of this soil and yields are steadily declining.

(ii) Legume green manures, because they fix nitrogen from the air and supply it to the soil, reduce the rate of nutrient decline (see Indian Head) but, because legumes use but do not supply phosphorus to the soil, this system also shows evidence of a gradual decline in soil fertility and thus production levels.

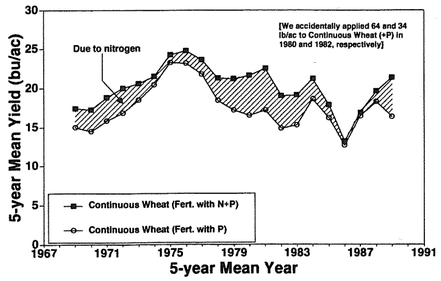
(iii) Bromegrass-alfalfa cut for hay, grown for 3 of every 6 years, fixes more nitrogen than the green manure system. This is because the legume hay crop is grown for a greater proportion of the time than the 1 of 3 years for the green manure system. Thus, the hay rotation tends to maintain the fertility of the soil at equilibrium (yields generally constant). However, even here the system is inferior to where both nitrogen and phosphorus fertilizers are applied, because legumes do not supply any phosphorus to the system.

(iv) The relative impact of not fertilizing was as pronounced on the continuous wheat system as on the fallow-wheat-wheat system, at Indian Head, probably because although more nutrients are being exported as grain from the system that is cropped annually, more nutrients are lost via erosion in the fallow phase of the 3-year rotation.

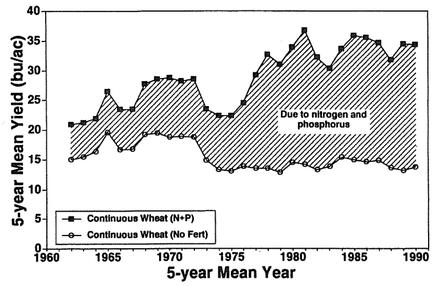
(v) The divergence in yields were much less apparent at Swift Current than at Indian Head because (i) yields are much lower and the length of study much shorter at Swift Current, both of which lead to less nutrients exported from the system; (ii) there was no true check at Swift Current (i.e., every treatment received some fertilizer).

These results should once and for all refute the claim that low input agriculture is sustainable! The fact is, we cannot "make blood out of stone". Thus, if we continually harvest nutrients and sell them to our customers abroad without replacing these nutrients, we will eventually degrade our soils and yield potentials will diminish. We may be able to supply our nitrogen needs without fertilizers, but our phosphorus needs are not as easily repaired by any crop!

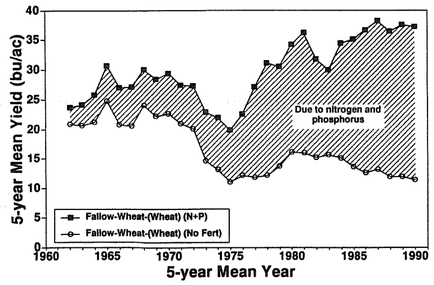
Yield trends of continuous spring wheat at Swift Current as influenced by fertilizer (5-year running mean, 1967-1991)



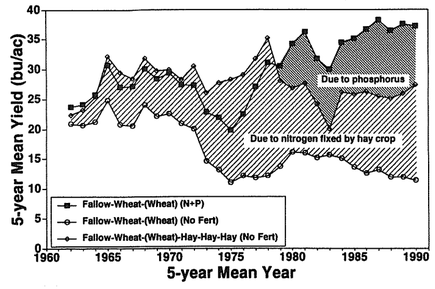
Yield trends of continuous spring wheat at Indian Head as influenced by fertilizer (5-year running mean, 1960-1991)



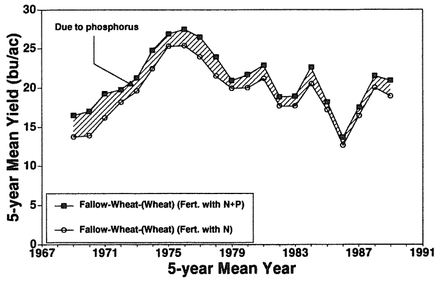
Yield trends of spring wheat grown on stubble in 3-year rotations at Indian Head as influenced by fertilizer (5-year running mean, 1960-1991)



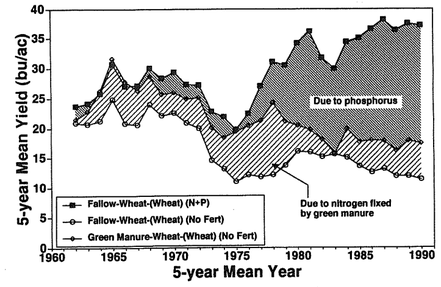
Yield trends of spring wheat grown on stubble at Indian Head showing influence of alfalfa-brome hay crop (5-year running mean, 1960-1991)

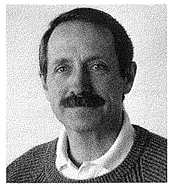


Yield trends of spring wheat grown on stubble in 3-year rotations at Swift Current as influenced by fertilizer (5-year running mean, 1967-1991)



Yield trends of spring wheat grown on stubble in 3-year rotations at Indian Head showing influence of sweet clover green manure (5-year running mean, 1960-1991)





What Can We Learn From Others? And Where Do We Go From Here?

By Bob Linnell
SSCA S.E. Regional Soil Conservationist

Many producers are asking where soil conservation is headed in the next 3 to 5 years. Most producers agree that the new Green Plan negotiations will likely concentrate on slightly different concerns, although there will still be the priorities of soil conservation, water quality, water quantity, and waste disposal and/or pollution reduction management.

Ontario and the Federal government have recently announced funding to support the Agricultural Green Plan for that province and it shows a heavy emphasis on the above objectives. Provincial directives show about three quarters of their effort will be placed on soil conservation and water issues. The remainder will be spent on environmentally responsible management of manure and wastewater programs. Federal efforts will feature similar programs with nutrient management through farm plans, support of agricultural [conservation]practices, technology transfer, along with research and information systems.

District practices have taught us much about how to approach new conservation programming. There has been good awareness and respect throughout the country for existing plans. A particularly good approach has been followed by a group working as the Upper Thames River Authority in Ontario. This group has developed to the point where it publishes practical guides to conservation techniques and systems selection, as part of its cropland conservation farm planning program.

In Saskatchewan, we have also seen the effectiveness of technique demonstrations. The emphasis has tended to provide information in a mass exposure method, with the adaptation spreading to individual producers. This method is still one of the best in terms of lasting effectiveness and sustainability of effort. Manitoba, Alberta, and parts of the U.S.A. also use demonstrations to quickly transfer ideas.

We see the need for a greater exchange of ideas and information, both on a farmer to farmer level as well as at district, provincial, and federal levels. Authorities such as the Conservation Technology Information Centre in Indiana have provided quality service for some time now and Saskatchewan producers could benefit from similar centres. Ontario has provided funding under the new agreement for a Central Information Centre. Australian programs have progressed to the point of publishing textbooks on group management skills and strategies in their efforts to work together for land care.

So, where does Saskatchewan go from here? I guess that depends on how well we have learned from the past two and a half years and how well we adapt the practices we have observed. A great deal of commitment needs to be made in the future, if we are truly going to be stewards of the soil.

Another Forage Choice - Filling The Mid-Season Grazing Gap

By Pat Flaten
SSCA S.W. Regional Soil Conservationist

Producers across the province recognize forages as a useful and important land use choice. Most often, when land is seeded to perennial grass, tame species are chosen. However, more recently, native species have become more popular than ever before. Wildlife associations, whose aims are to create better wildlife habitat, most often use native grasses.

Associated with this progress in native species use, another concept is being experimented with and accepted according to Dr. Tom Dill. Dr. Dill is Area Range Management Specialist with the Grazing and Pasture Technology Project in Swift Current and he believes warm season native grasses have a place in Saskatchewan.

He sees a terrific need for something to fill the mid-summer grazing slump of cool season grasses. "Most of the introduced species are best suited for early season grazing and stop growing in early to mid-June. Their nutritive value drops after that. In fact, although native grasses tend to retain their value better, both native and introduced species still lose nutritive value after they've stopped growing. Warm season grasses are still actively growing in July and August, if moisture is available. Therefore, they maintain a higher nutritive value throughout the summer months. Of course, palatability usually goes hand in hand with active growth as well."

Dr. Dill has chosen 4 tall warm season native grasses to experiment with: Dacotah Switchgrass, Tomahawk Indiangrass, Bison Big Bluestem and Killdeer Sideoats Grama. He's imported these from the USDA - SCS (United States Department of Agriculture - Soil Conservation Service) Plant Materials Centre at Bismarck, North Dakota. They were originally collected from Northern USA native stands and multiplied, based on their survival and seed productivity.

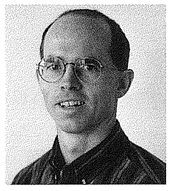
Although Southwestern Saskatchewan is primarily short grass prairie, this doesn't mean that tall grass species have not or do not exist here. In fact, Dr. Dill has discovered some Sand Bluestem in the area of the Great Sandhills. In Southeastern Saskatchewan, relatively abundant stands of switchgrass and big bluestem are found.

To date, these have not been found in the rest of the province. Dr. Dill notes, "Perhaps they could be found and perhaps they could be grown, considering potential long term climatic changes."

Dr. Dill has the co-operation of 8 producers across Southern Saskatchewan who have seeded or will seed a mixture of the four species on 1/2 acre to 3 acre plots. Of the 5 sites needed in the spring and summer of 1992, already 4 sites have 65% establishment. The plots will be grazed and monitored over several years.

He's also included these grasses in some of the forage plots which the SSCA and the Southwest Forage Association are involved with.

Dr. Dill is not alone in his quest for a mid-season grazing option. Scientists with Agriculture Canada are also looking at warm season grasses in terms of relative productivity, establishment methods and herbicide tolerance.



Residue Management Options For The Unharvested Crop

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

The extraordinary weather in 1992 has resulted in a residue management nightmare for some producers in various areas the province. Producers should consider all residue management options when dealing with a crop that is severely lodged or unharvestable due to frost.

1) **Bale as Feed.** This is probably the best option if the feed can be utilized. The stubble should be left tall enough to trap snow, but no taller than the effective shank spacing of the direct seeding equipment. Unfortunately, crops that have not already been baled may now have deteriorated to a poor quality feed.

2) **Mowing.** Using a rotary or flail type mower will cost $5 to $6 per acre. This is a good alternative to tillage because the soil structure will not be disturbed and the residue will remain to protect the soil. If mowing in the fall, be sure to leave trap strips to increase snow trap potential. Remember to follow the guidelines for stubble height and direct seeding.

3) **Tillage.** Fall tillage will result in reduced snow trap, damaged soil structure, and increased risk of erosion. One pass with a tandem disc ($5.50 per acre) may be enough to incorporate a lodged crop, but will likely result in a poor seed bed. More than one pass with a tandem disc will make the field susceptible to erosion and will be uneconomical, compared to mowing. A heavy duty cultivator ($3.50 per acre per pass) is not recommended, as it may not clear the residue, and will require multiple passes.

4) **Burning. This practice is not recommended!** Although there is no evidence to show that occasional burning reduces soil quality, research has found that repeated burning reduces soil biological activity, and soil carbon and nitrogen. Burning can also damage riparian areas and field shelterbelts.

Burning a 30 bushel per acre wheat crop can produce as much as 600 lbs per acre of air pollution, especially under windy conditions. This also represents a $6 per acre loss of nitrogen that would otherwise have been available for crop production in a few years.

Producers who plan to use burning to handle the exceptional residue problem this year can reduce the harmful effects by leaving the crop standing over winter to improve the snow trap, and burning just prior to direct seeding.

Farmers should consider the long term quality of the soil and air when practicing their residue management.

SSCA And ManDak Attend Soil Conservation Conference Down Under

By John J. Kiss
SSCA Executive Manager

This fall several board members from the SSCA and the Manitoba-North Dakota Zero Tillage Farmers Association (ManDak) were in a race against time as well as the weather to finish harvest. On September 23rd, a six member party of the two associations departed to attended the International Soil Conservation Organization (ISCO) Conference in Sydney, Australia.

Participants in the trip included: Dave Bueckert, SSCA President, Gerry Willerth, SSCA President-Elect, John Kiss, SSCA Executive Manager, Ron Bell, ManDak President, Dennis Haugen, ManDak Sec./Treasurer, and Bob Bradley, Advisor with PFRA.

Attending the conference and meeting with local farm groups was a worthwhile experience. The trip provided an opportunity to see how governments and farmers in other countries were struggling with farm economic viability and farmer acceptance of soil conservation. The trip underlined the fact that farm economic viability is a must if farmers are to reinvest in their land. Cooperation between the SSCA and ManDak on this trip will establish a much closer working relationship for future efforts.

I presented a paper at the conference which detailed Saskatchewan's efforts to foster FARMER OWNERSHIP of local and provincial soil conservation programs. After the conference, our group travelled Eastern New South Wales to meet with local farmers and conservation groups. We saw first hand the Aussies' successes and failures at maintaining farm economic viability while practicing soil conservation.

From a Saskatchewan perspective, we have a lot to learn from the Australians. I think the Australians can also benefit from our experiences. The major difference between our soil conservation programs appears to be the idea of universal access to farmers and the philosophy of funding wide-scale on-farm conservation works. The Australian Land Care Program seems to be similar (although not completely) to our past ERDA soil conservation programs. The Land Care Program appears to be made up of ad-hoc farmer groups. These are of varying sizes over discontinuous areas. They have limited access to dollars for performing on-farm conservation work.

The Australians are continuing to set up these local "ad hoc groups" (officially called "Land Care Groups" which now number several thousand). The groups harness harness volunteer time and energy for local demonstrations of on-farm soil/tree/riparian/watershed management along with coastal management and dune conservation. The underlying philosophy seems to be that the government does not wish to pay for the on-farm soil conservation practices; they just want to provide a small amount of start-up funds ($3-4,000 per group) so farmer peer-groups can be formed which try to convince local farmers to pay for the restoration of their own land.

Conservation Farming Catch 22. Soil erosion, salinity and tree decline are reducing land productivity in Australia. Reduced productivity and very poor markets mean little or no real profit. This results in little money to reinvest in the land to improve productivity. **The land degradation - economic viability circle continues to spiral.**

From my perspective, not providing capital funds to farmers or groups for wide-scale, on-the-ground, soil conservation work goes against the idea that society has a significant role to play in the care of the land base. The urban environmental taxation system in the Sydney-Illawara Watershed (3-4 million people) is a good example of a largely urban society paying (approx. $50.00/household/year) for soil conservation and other environmental works. This taxation is done now in order to have higher quality water and better environmental conditions in the future.

SSCA & ManDak tour members discuss the successes and failures of farming and soil conservation with Australian conservation groups.

There is concern among Australian farmers and farm groups about the "Green" movement in Australia. This movement has allied itself against agriculture. Farmers and farm leaders are concerned about the "Greenies" influence on government. They are very concerned about the recently created "Green" government regulatory agency called the Environmental Protection Agency (EPA).

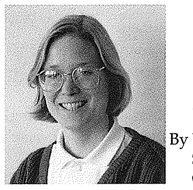
Soil conservation funding in Australia, for Land Care, is short term like it is in Canada. It's hard to say whether there's going to be a continuation of funding for these efforts in either country. The Australian discussions regarding the future of soil conservation programming are very similar to our situation. Short-term funding for a long-term problem! The noticeable difference is that their land degradation problems are worse than ours.

Australia doesn't have any state-wide, farmer-based organizations transferring soil conservation information to farmers. They have internal bureaucratic structures. Small, locally-based "Land Care Groups", where they have been formed, are the only organizations where farmers can work with other farmers on conservation/production issues. Universal access to farmers is a problem. Farmers don't have an opportunity to talk to other Land Care Groups, nor is there a newsletter produced with and for all Land Care Groups. These groups rely almost entirely on the state government staff for assistance and information. We had heard that farmer groups similar to ManDak and SSCA were starting to emerge in the states of Victoria and Western Australia. We look forward to staying in touch with these producer-based groups.

Farmers in Saskatchewan and Manitoba are farther advanced than the Australian farmers we visited, when it comes to direct-seeding/zero-tillage knowledge, information and technology. I think this is largely due to the foresight and dedication of the members of the Manitoba-North Dakota Zero Tillage Farmers Association and, more recently, the SSCA's farmer members. Without a doubt, the idea of directly seeding crops links farm economic viability to better soil conservation!

For more information on the trip and the people we met, feel free to call on any of the participants.

SSCA Education Programs



By Yvette Crane
SSCA Soil Conservation Educator

The summer and fall have been busy months as school's start was also the launching date for several SSCA education initiatives.

The SSCA's activity manual for K to 12 teachers, **Project Soils**, is in draft form and is undergoing testing and evaluation by Saskatchewan pilot teachers. Printing of the final manual will begin early in 1993.

A teacher workshop on **Project Soils** is already scheduled to take place during the SSCA's annual meeting in Moose Jaw, on Tuesday February 9, 1993. The workshop will be held concurrent with the main conference, from 9:00 to 11:30 a.m. in the second floor meeting rooms of the Moose Jaw Exhibition's Trade Building. There is no charge for the workshop, and a number of teachers have already reserved a place. Conference participants are also welcome to attend the workshop and receive their own copy of **Project Soils**. Please register for the **Project Soils** workshop before January 30, 1993 by contacting the SSCA Regina office (306 787 0558)

Another exciting addition to this year's annual meeting will be the return of the High School Student Environmental Challenge. We are hoping one school from each of the six regions will take part. This year the students will research and present on the question: "In search of Saskatchewan's 'Fertile Belt' - Palliser or Macoun - Who was right?"

The presentations will take place on Monday February 8th between 12:30 and 2:45 p.m. in the second floor meeting rooms of the Trade Building. Conference participants are welcome to attend. The students will have displays in the main conference area, and prizes will be awarded at 6:30 p.m. at the conference banquet.

If you would like more information about these, or any other SSCA educational programs, please give me a call at (306) 787 0555, or write me at the SSCA's Regina office.

SSCA Employee of the Month

Garth *(I hate recreational tillage)* Patterson ready to seek out and convert conservation offenders.

The Clean Air Act

By Leonard D. Andrychuk
Partner with the law firm
MacPherson, Leslie & Tyerman

In this issue, I will discuss legislation administered by Saskatchewan Environment and Public Safety (SEPS) which may have a bearing on farm operations, particularly stubble burning.

The emission of air contaminants is regulated by *The Clean Air Act* and The Clean Air Regulations. The *Act* prohibits the operation of an "industrial source", an "incinerator" or "fuel burning equipment" without a permit.

"Industrial source" is very widely defined to include any activity that is a source or potential source of an air contaminant. It is possible to conceive of many farming operations which would fall within that broad definition of "industrial source", including stubble burning and pesticide or herbicide spraying. "Fuel burning equipment" is also widely defined to include any equipment or apparatus that burns fuel for the purpose of vehicle transportation, heating, drying, generating power or any combination thereof. Many kinds of farm equipment would be considered to be "fuel burning equipment".

However, most farm operations will not require a *Clean Air Act* permit. The *Act* provides that no permit is required for equipment used on agricultural lands for seeding, harvesting, fertilizing or controlling pests or weeds, for motor vehicles, for the burning of brush to clear land for cultivation, or the burning of weeds, grain stubble or grain straw.

Buildings or facilities that require a permit under *The Pollution (By Livestock) Control Act, 1984* are similarly exempt. Further, no permit is required for any plant or operation situated at least 500 metres from any urban area, or which is located on a site for a period of less than 6 months, for the grinding, mixing, cleaning, drying, dehydrating or processing of primary agricultural products, so long as any emissions from the plants or operation contain no toxic or corrosive elements.

The fact that no permit is required does not mean that operations such as stubble burning are completely exempt from the operation of the *Act*. The *Act* gives SEPS the power to issue a "control order" to the owner or operator of any industrial source, incinerator or fuel burning equipment that it considers to be the source or one of a number of sources of air pollution. As I noted above, stubble burning is an "industrial source". Air pollution occurs when any air contaminant is present in quantities that are likely to be injurious to the health, safety, comfort or well-being of the public, injurious or damaging to property or plant or animal life, that interferes with normal business or that has an offensive or obnoxious odour.

Therefore, if stubble burning is carried out in such a manner that it has any of those effects (for example, if it unduly obstructs visibility on highways or pollutes the air breathed by the public or any person) SEPS has the right to issue a control order to the farmer doing the stubble burning. The same would apply whether the operation is causing the pollution by itself or in conjunction with others.

The control order may require a number of corrective measures. In the case of stubble burning, one would expect it would order an immediate stop to the operation. It may order the offender to refrain from emitting the contaminant (ie. burning stubble) permanently or direct that it only be done under certain conditions. Failure to comply with a control order is an offence under the *Act*.

In addition, stubble burning and some other farm operations (such as spraying) might under certain circumstances be offences under the Clean Air Regulations. The Regulations prohibit the operation of any industrial source which, alone or in conjunction with others, causes a concentration of the air contaminant in the air greater than a maximum specified in the appendix (which includes particulates) or that causes air pollution. They prohibit the burning of trash or any other material or waste in an open fire in a manner that causes air pollution. (See above for the definition of air pollution.) The Regulations also specifically prohibit the discharge into the air of any air contaminant in a quantity sufficient to cause a visibility problem on public roadways or developed property. Therefore, burning which causes air pollution and might subject a farmer to a control order, may also be an offence.

Any contravention of *The Clean Air Act* or Regulations is punishable by a fine of up to $1,000,000 and to imprisonment for up to three years, or to both a fine and imprisonment. That rather heavy penalty was imposed by relatively recent amendments to the *Act* which were designed, for the most part, to catch major industrial offenders. While it may be difficult to conceive of any farm operation which would result in the maximum penalty being imposed, farmers must be aware of the fact that rather heavy penalties are possible.

I have been advised by staff at the Air Quality Branch of SEPS that, to date, no control orders have been issued against farmers for burning stubble, nor have there been any prosecutions. They do not say, however, that they would not do so if a stubble burning operation was dangerous to the public or created a health concern to any person.

SEPS receives a number of complaints annually about stubble burning and it is reasonable to expect, given current concern over personal health and the environment, that the number of complaints may grow. This may eventually prompt SEPS to exercise its powers to control stubble burning.

Both urban and rural municipalities are given the power by *The Clean Air Act* to make bylaws prohibiting, regulating or controlling burning or the operation of fuel burning equipment.

In addition to the potential for liability under *The Clean Air Act*, or municipal bylaws, the farmer may be liable and face expensive law suits if burning causes a traffic accident or aggravates people's health problems.

Any questions you may have in regard to *The Clean Air Act* as it applies to stubble burning or other farm operations may be answered by calling the Air Quality Branch of Saskatchewan Environment and Public Safety in Regina or by consulting a lawyer.

(in a future issue - *The Environmental Management and Protection Act* and the Environmental Spill Control Regulations)

Mr. Andrychuk is a partner in the law firm of MacPherson, Leslie & Tyerman. The Saskatchewan law firm was founded in 1921 and has offices in Regina and Saskatoon. Mr. Andrychuk has written and lectured in the field of environmental law.

Demand For Shelterbelts Remains High

Tree seedlings at the PFRA Shelterbelt Centre at Indian Head, SK

Over the past several years the interest in planting field shelterbelts has increased dramatically. Ten years ago, over 3/4 of the six million seedlings produced by the PFRA Shelterbelt Centre were planted as farmyard shelterbelts. Last year over 1/2 of the eleven million tree seedlings distributed were planted as field shelterbelts. The increased demand for shelterbelt seedlings reflects both the increased environmental concerns of the prairie producer as well as increased public support for shelterbelt establishment. The severe weather conditions of the last several years have brought about a re-thinking of some prairie farming practices. As people watched their precious soils being blown away and their crops being damaged by the wind, many began to realize that something had to be done.

One of the many practices that has grown in popularity is the use of field shelterbelts. Field shelterbelts not only reduce soil erosion by reducing the wind speed, but also protect crops growing in the field. Shelterbelts often increase crop yields because they protect young seedlings from desiccation by the wind, reduce sand-blasting injury throughout the growing season and shelter swaths from the wind disturbance.

Another important characteristic of field shelterbelts is their ability to trap and distribute snow across fields which provides valuable spring moisture for crop production. Furthermore, trees provide habitat for wildlife in areas where habitat is scarce.

Although demand for field shelterbelt seedlings remains high, there are other programs attracting a lot of attention on the prairies these days. One of the more popular programs operated by the PFRA Shelterbelt Centre is the Wildlife Shelterbelt Program. Under this program, various tree and shrub species are planted to enhance areas for wildlife habitat. There is also new interest in the utilization of shelterbelts for agroforestry. Thus, not only does the producer realize the benefits of shelterbelts in protecting his crop, yard and wildlife but in addition, he may be able to use the products from the shelterbelt as a cash crop.

Winds Of Change

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

Clint and Aaron Steinley were tired of seeing their land blow. The brothers realized they could not let this continue. "During the 80's there were some brutal dust storms that caused the loss of large amounts of topsoil. The old timers were starting to say that the land was farmed out. We were tired of the black springs and knew we could not carry on this way." recalls Clint.

The Steinleys' six section farm near Empress, on the Saskatchewan/Alberta border, is being transformed into a model conservation farm. It will soon include: direct seeding, conservation fallow, narrow fields, shelterbelts and a well planned crop rotation, including legumes.

Economics have also been an important consideration in changing their operation. The Steinleys' traditional method of farming utilized a two year crop/fallow rotation in which the soil was tilled seven times. Up to 1500 tractor hours were put on annually. An estimated $100,000 was going to be required to upgrade their tillage equipment, if they stayed with their traditional system.

The economics of the new and old systems were compared before making any changes:

- Conventional Tillage Fallow
  (2 cultivations & 2 rodweedings) $14.20/acre

- Conservation Fallow
  (2/3 l Rustler + .03 l Banvel + machinery cost = $6.96/acre;
  all fallow acres sprayed once, 1/2 sprayed twice)

  Average cost $10.44/acre

- Conventional Seeding & Harvest $32.40/acre

- Direct Seeding & Straight Cutting $32.50/acre

The costs between the two systems are comparable, however the benefits include time savings and an erosion proof farm. There are other benefits too according to Clint "We now see more of our families and have time to get those little things done around the farm. We were tired of being slaves to the tractor."

Under their new system, the brothers are selling $65,000 worth of equipment including two PTO combines, an SP swather, one PTO swather, three discers, one harrow packer, one rock picker, one granular herbicide applicator and one tractor. The heavy duty cultivator has not gone up for sale yet, because according to Aaron, "we don't want to paint ourselves into a corner with too many rules."

Their new combine and straight cut header cost $56,000 and the direct seeding drill will cost $40,000 to set up. While the total cost of their new system will be $96,000, there is $65,000 worth of cash coming from the sale of surplus equipment. As a result, the brothers' investment for their direct seeding system is really only $ 31,000. (new equipment $96,000 - $ 65,000 surplus equipment = $31,000 investment in equipment). This is far less than the $100,000 that would have been spent to upgrade their conventional tillage equipment.

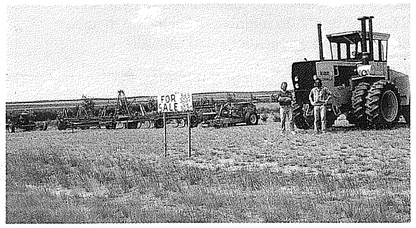
The Steinleys decided to build their own direct seeder utilizing Acra planter openers and a used 35 foot Morris cultivator frame. They got the idea after seeing a similar farm-built seeder at a field day sponsored by the local ADD Board (District #17). "We chose the Acra planter system because of its individual depth control and floatation, and the minimal stubble disturbance" says Clint.

The change in farming systems has been a learning experience for Clint and Aaron. "You have to pay close attention to the performance of your sprayer" says Aaron. "One plugged nozzle, one wheel track or a faulty pump will leave green strips which will remind you all summer long of your poor job of spraying." They also time their spraying operations to the growth stages of the most difficult to kill weeds (buckwheat in their case).

A soil moisture probe is also an important part of their operation. "We were surprised to find twice as much moisture on conservation fallow in some cases" says Clint. "Where tilled fallow would have 18 to 20 inches of moist soil, adjacent conservation fallow would have as much as 30 to 36 inches."

The Steinleys' cropping system consists of wheat, durum, rye, lentils, mustard and peas. The durum will be replaced by Genesis wheat because of the better returns it generates. The brothers have experimented with double cropping. Both lentils and durum were underseeded with rye. The rye provided better weed control than Sencor in the lentils, however yields were reduced from 25 to 18 bu/acre. The rye also reduced durum yields from 25 to 15 bu/acre, however they now have a well established rye crop which will be harvested next year. "We need to be able to seed the crops in alternate rows," says Clint, "in order to reduce competition."

There have been some big changes on the Steinley farm. The wind now blows clear, clean and fresh across their land (and their soil stays put).



The Steinleys and their surplus equipment for sale

Grain Lentil Is Good For Sustainability

By C.A. Campbell, R.P. Zentner, F. Selles and V.O. Biederback
Agriculture Canada Research Station Staff, Swift Current, SK

Grain lentil, when grown in rotation with wheat, will not only increase grain protein of the wheat, but can lead to improved soil organic matter quality. It can provide an effective alternative to the frequent summerfallowing practiced in the semi-arid areas of Western Canada.

In a twelve year study carried out in the Brown soil zone at Swift Current, wheat grown in a two year rotation with lentil averaged one percentage point in protein greater than wheat grown annually, while grain yields were the same. Both systems were fertilized based on soil tests each year.

The results showed that after about four or five years, the amount of available nitrogen (nitrates) in the rooting depth of wheat increased, compared to that under continuous wheat (Figure 1). As a result, after four or five years, the wheat-lentil system required, and received, less and less fertilizer nitrogen than the monoculture wheat system

The larger amount of nitrates present in the root zone under the wheat-lentil system suggested that this system might result in more leaching of soluble nitrates beyond the rooting depth in wet years. This could be a potential pollutant for ground water if there were shallow water tables in the vicinity. However, analysis of soil samples taken to ten feet in 1990 showed that there were actually less nitrates present in the subsoil under the wheat-lentil system than under continuous wheat.

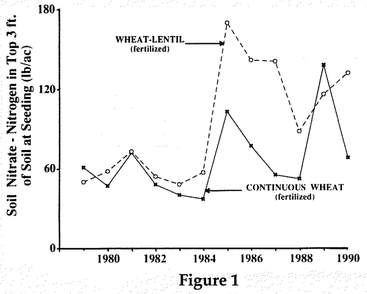


Figure 1

We speculate that there is greater synchrony* between the availability of nitrate nitrogen (produced from the decomposition of lentil roots and residues in soil) and the ensuing nitrogen uptake by the wheat crop, as compared to the synchrony between fertilizer nitrogen and uptake by the monoculture wheat.

These results are important with regards to economic viability and agricultural sustainability. From an economic standpoint, producers using wheat-lentil systems can look forward to reduced expenditures on N fertilizers and, in some years, possibly higher grain protein and, thus, a higher wheat price.

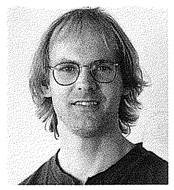
On the sustainability side, the greater synchrony of nitrogen release and uptake by the wheat-lentil system means less likelihood of ground water pollution or run-off (erosion) losses compared to fertilized monoculture wheat. Furthermore, the success of the wheat-lentil system means that producers in this semi-arid region have an effective alternative with which to replace the soil degrading practice of summerfallowing, frequently employed in this region.

From a scientific standpoint, these results are also of interest. Some scientists have suggested that grain legumes, because they "export" (in the grain) most of the nitrogen that they fix, have limited ability to improve the soil's nitrogen supplying power. Our results appear to contradict this philosophy.

Low wheat prices and a desire by producers on the Canadian Prairies to reduce fertilizer inputs and the frequency of summerfallowing have resulted in a marked increase in grain lentil production in recent years. Therefore, our findings are timely for the farming community.

However, one word of caution is required. It should be noted that this type of rotation (ie. lentil grown every other year) is only suitable in the drier parts of the prairies. In the more humid areas, such frequent use of lentil can lead to a build up of ascochyta disease.

**synchrony = simultaneous occurrence. In this case, when the peak availability of the nitrogen coincides in time with the ability of the crop to use it.*



Farm Safety Nets And The SSCA

By James Lokken
SSCA Economics Specialist

The SSCA Board of Directors recently released a document which presents SSCA's views on the environmental impacts of the new farm safety net programs, GRIP and NISA. The paper is written from SSCA's perspective as a Saskatchewan farm organization dedicated to "promoting agricultural production systems which reduce soil degradation and maintain economic viability (SSCA Mission Statement)".

The SSCA developed the paper in response to Agriculture Canada's invitation to interested organizations to submit briefs on the environmental impacts of the two farm safety net programs. The federal legislation which created GRIP and NISA requires an environmental assessment of the programs to be completed by early 1993. Environmental Management Associates of Calgary has been contracted by Agriculture Canada to carry out the assessment.

Following are some of the highlights of the brief:

1. SSCA recognizes the need for long-term programs which address the income problems of Canadian farmers. SSCA believes that financially healthy farms are necessary to both agricultural and environmental sustainability. Therefore, all of Canadian society has an interest in ensuring the stability of farming income.

2. SSCA promotes policies, programs and practices which conserve soil and other resources used in, or affected by, agricultural production. SSCA is concerned that GRIP, in particular, does not encourage the wise use of resources by farmers. While NISA does not have as great a potential to negatively affect the environment, it does not explicitly encourage natural resource conservation either.

   SSCA has previously expressed concern about the negative environmental effects of agricultural policy in public documents such as its Position Statements (1990), its Proposal to Reform Soil Conservation Programs (1992) and various press releases and other public statements.

3. SSCA supports an open and rigourous environmental assessment of GRIP and NISA and also supports the environmental assessment of all existing and proposed government policies and programs. A number of government documents over the last several years have similarly recommended this course of action.

4. The uncertainty surrounding GRIP in Saskatchewan has, itself, had negative environmental impacts. Farmers have been unable to identify environmentally positive practices within the context of the programs.

5. Specific concerns with GRIP include:

   - the exclusion of forages from coverage. This is the most obvious failing of GRIP. Forages must be included to make GRIP more production neutral. Alternatively, poor quality and other fragile lands should be excluded from GRIP. At the same time, the Permanent Cover Program should be expanded.

   - income support which does not reflect current market conditions and relative prices. Such support encourages excess production and distortion in the use of natural resources. The 1992 basket coverage in Saskatchewan partially corrects this problem.

   - income support which encourages the annual cropping of more acres. This can take the environmentally positive form of reduced summerfallowing of currently cultivated land. It can also have the negative effect of bringing more fragile acres into annual cultivation. Currently, it seems that GRIP is structured so that both situations can occur.

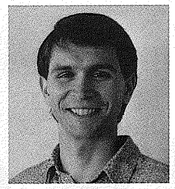
   - appropriate use of inputs. 1991 Saskatchewan GRIP discouraged farmers from using appropriate levels of inputs. 1992 GRIP potentially rewards farmers who use appropriate levels of inputs. However, the decrease in crop insurance coverage in 1992 GRIP pushes farmers to use the least risky and least costly practices, which may not be the most environmentally positive practices.

6. Specific concerns with NISA include the fact that NISA is not production neutral, since the full range of agricultural production is not covered under the program. Most importantly, forages and livestock must be better represented in the program. However, NISA has a less distorting influence on production decisions than GRIP because it is not tied to historical prices, specific production levels, or acreages.

7. The Farm Income Protection Act (FIPA), which created GRIP and NISA, provides for more environmentally positive programs than the current GRIP and NISA are, by allowing the use of cross-compliance measures. Section 5(2)(a) of the Act speaks of "the circumstances and conditions under which insurance may be withheld, restricted or enhanced for the purpose of protecting the environment and of encouraging sound management practices to ensure environmental sustainability". SSCA believes that the government should make use of this legislation to promote and reward environmentally positive farming practices.

The fundamental redesign of GRIP and NISA as environmentally positive programs will contribute greatly to long-term environmental and agricultural sustainability.

Copies of SSCA's environmental review of GRIP and NISA can be obtained by phoning or writing SSCA's Central Office in Regina.



Weeds In Established Shelterbelts

By Chris Zabek
SSCA Shelterbelt Information Officer

By this point in time, all producers should be aware of the various benefits of shelterbelts. Their value in preventing soil erosion, increasing overall crop yields and enhancing wildlife habitat is well-documented. Indeed, people plant trees for both conservation and economic reasons.

Weed control in growing shelterbelts has also been stressed. PFRA personnel, ADD Board Soil Conservation Technicians, Extension Agrologists, and SSCA staff have been hard at work driving home the fact that weeding, especially in the establishment years of the trees, is vital to the survival and long term viability of a shelterbelt.

Many producers seem to have taken this message to heart, as indicated by the results of a 1990 PFRA survey. Several shelterbelts planted in the spring of 1990 were examined that fall. Weed control in almost 57% of the sites was found to be excellent. While this still leaves much room for improvement, it is good to see that the majority of the sites had been well cared for. Once these trees get older and become well established, the producer can forget about them. Right?

Not really.

Just because the trees are older doesn't mean that they are no longer affected by weeds. Weeds can seriously limit the growth of more mature trees as well as younger ones. Studies have been done in the United States on older shelterbelts that are sod-bound with weeds, primarily grasses. When vegetation within the tree rows was controlled, the average diameter, height and crown density of the trees were all observed to increase in comparison to tree rows where grasses and other weeds were not eliminated.

The result of a weed free shelterbelt

Control through mechanical methods such as hoeing and cultivating might be an option for some producers. Care, however, should be taken to keep the tillage shallow in order to prevent root damage.

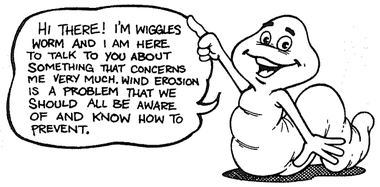
Chemical control is another option which has been used with some success. As with any herbicide use, caution is required. When grasses and perennial weeds are growing in an established shelterbelt, glyphosate (Roundup) has been used to liberate the sod-bound trees. Glyphosate must be applied only as a directed spray. Use care to avoid contact with any tree foliage or bark, otherwise the trees may be severely damaged or killed. Paraquat (Gramoxone) may be used to control weed top-growth, but one application will not kill perennial weeds.

Shelterbelt maintenance is most effective if it is an ongoing process. A little bit of work each year can save you a lot of trouble in the future. It's never too late to reap the benefits of weed-free shelterbelts. Cleaning up your trees may produce more positive results than you think.

Colouring Contest

COLOURING CONTEST
- WIND EROSION PREVENTION -

Can you put the letters from these paragraphs in the right place on the colouring page? (I've done the first one, "A", for you!)



Wind erosion happens when the soil is left unprotected from the strong winds. The loss of topsoil lowers the quality of the soil. This makes it more expensive and harder to grow good crops. The blowing soil can also plug ditches and make driving more difficult. Country and city people should both be concerned about wind erosion. Strong winds will always be around, but we can do certain things that will protect the soil from blowing away.

A. Too much **tillage** of the soil breaks down the clumps of soil into smaller particles which are more easily carried away by the wind. Straw and other plant pieces left on the ground are also broken up and worked under when the land is tilled over and over. The soil is no longer protected and can blow away.

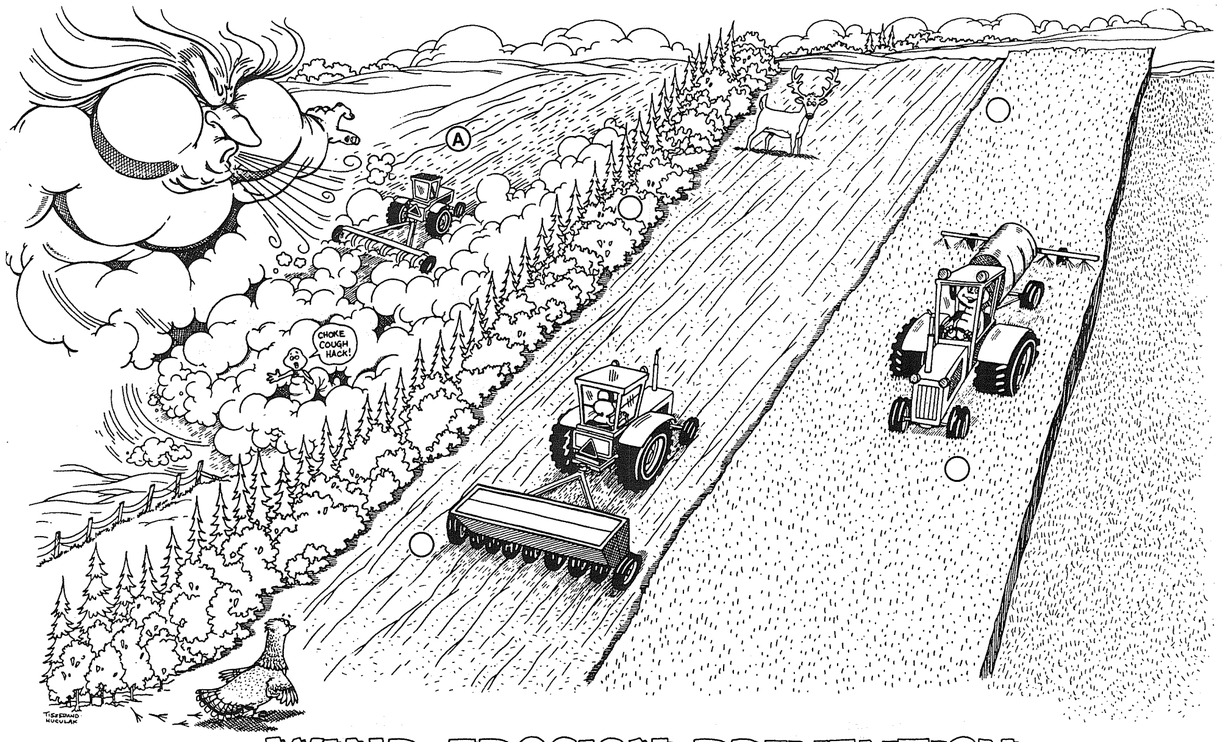
B. One way to slow down the wind and keep the soil in place is by planting **shelterbelts**. The rows of trees that make up a shelterbelt are carefully arranged so that wind does not blow across open fields. Shelterbelts prevent wind erosion in the summer and winter. In the winter, snow is trapped by the trees and melts in the spring providing more moisture for crops. Shelterbelts not only help to stop wind erosion, but also provide a home for wildlife such as deer, rabbits and birds.

C. Planting crops in narrow strips is another way to prevent wind erosion. This is called **strip cropping**. These narrow strips have stubble left on the surface and do not allow the wind to pick up soil particles. The summerfallow strips between the stubble are not wide enough for the winds to start the soil blowing.

D. Keeping **plant residue** (straw, dead plants) on the surface is very important in preventing wind erosion. One way is by seeding the crops directly into the stubble without tilling the soil first. This means that soil particles are kept covered and will not blow away.

E. When the land is not tilled as often, certain weeds may start to grow and create problems. Selective **weed killers** can be sprayed when weeds are a problem instead of cultivating to kill them. This keeps more plant residue on the soil and prevents wind erosion.

DON'T FORGET TO SEND US YOUR COLOURING WHEN YOU'RE DONE . . . AND BE SURE TO INCLUDE YOUR NAME, AGE, AND ADDRESS!



Soil and Water Conservation Society - SWCS Alberta Chapter

This is one of a series of interpretive posters produced by SWCS to promote education in the conservation of our soil and water resources. Funding was provided in part by the Canada-Alberta Soil Conservation Initiative.

Colouring Contest Rules:

1. Deadline: January 27, 1993
   Winners will be notified and an announcement will appear in the next edition of the Prairie Steward.
2. Send in your **name**, **age** and **address** with your entry.
3. Contest is open to all ages. A prize will be awarded in each of the following age categories:
   - 6 and under
   - 7 - 8 years
   - 9 - 11 years
   - 12 and over
4. This page may be photocopied.
5. Send your entries to:
   Soil Smart
   SSCA
   Room 132
   3085 Albert Street
   Regina, Sask.
   S4S 0B1

Direct Seeding Demonstration

Coronach Direct Seeding Club

By Wendy Kirby
Assistant SOS Technician
District #2 ADD Board

The benefits of direct seeding are being noticed and applied!

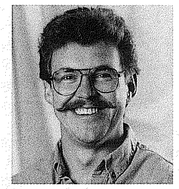
Last year Don Kirby, of Coronach, had 100 acres in our direct seeding program. Don was very interested in direct seeding and wanted to observe the differences between the available direct seeding implements. Therefore, we arranged to have a Flexi-coil 5000, a Case IH 8700, a John Deere 9450, a John Deere 752 and a Concord each do a 20 acre field. These plots were located just west of Coronach, along Highway 36. A number of producers showed interest in the growth and harvest results.

As a result of this demonstration, a direct seeding club was set up in Coronach this past winter. The club began with 16 members. It leased a 8440 JD tractor and a JD 610 airseeder. The club hired two operators and they seeded close to 4000 acres of land farmed by the 16 members. Each club member kept a record of chemical applications and rainfall.

Concerned with high input costs and soil erosion the producers, in the direct seeding club felt that they had to change some of their production methods. By joining a club such as this and sharing the costs of leasing a machine, they were able to reduce their input costs and reduce soil erosion.

Other farmers have expressed an interest in joining the club and the club is looking into leasing two direct seeding outfits for the spring of 1993.

I recently attended a club meeting and the response was very positive. As a Soil Conservationist, it is encouraging to see the formation of a direct seeding club evolve from a demonstration site.



The Soil Drifting Control Act: On Paper Only

By Ray Kettenbach
SSCA Communications Specialist

During the 1930's, soil drifting was a major problem in Saskatchewan. In the 1990's, the situation has become only marginally better. Farming practices and technology have changed dramatically during the last sixty years. However, farmers still have the urge to till excessively in an attempt to control weeds and conserve soil moisture. Soil drifting is an inevitable result.

Improper use of tillage can lead to soil drifting problems. Not only do you lose soil when it blows off your field, but your neighbours inherit your drift soil if they have left their stubble standing. Some people would argue that this "gift" is more than welcome, while others would rather see farmers keep their own soil on their own side of the fence.

In the spring, drifting soil may fill up standing stubble much like snow does in the winter. This situation can be devastating for both conventional and direct seeding operations. Problems caused by this extra soil may include: poor fertility, uneven germination, and poor depth control of seeding equipment. Farmers affected by the neighbours' blowing soil are left with few options when it comes to restoring their own soil. Heavy machinery can be brought to scrape off the drift topsoil. When this operation is carried out, the trash cover usually goes with the drift soil. Additionally, heavy machinery may cause compaction, further adding to the degradation of the soil.

To effectively deal with the problem of drifting soil the Saskatchewan provincial government passed *The Soil Drifting Control Act* in 1965. The *Act* outlines what steps will be taken and who should pay for correcting this problem. While the legislation is in place, there is nothing which forces a Rural Municipality (RM) to enact the bylaw. In fact, the onus is on the farmer affected to see that the bylaw is enacted in his RM. A petition with forty ratepayer signatures on it is the first step in approaching the local RM council to deal with the problem. As of press time, not one of the 298 RMs in Saskatchewan has enacted this very important piece of legislation.

It is to be hoped that the *Soil Drifting Control Act*, a little known piece of provincial legislation, will not be neglected for almost another thirty years waiting for future programs, like cross compliance, to shift the responsibility to local governments to protect the soil resources within their jurisdiction, if landowners are not willing to.

Stubble full of drift soil near Frobisher, SK

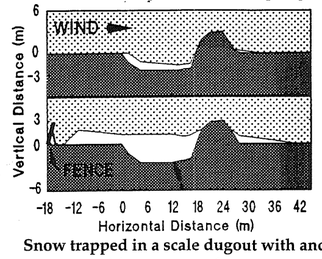
Using Wind Barriers To Enhance Water Supplies

By Blair McClinton
SSCA N.W. Regional Soil Conservationist

The past two years have been very dry in Northwestern Saskatchewan. This is particularly true for the western half of the region. In addition to poor crops, this prolonged drought has resulted in the loss of water supplies that local producers relied on to water their livestock. Many producers in the area are planning to build dugouts to improve their water storage. Snow management, with snow fencing or shelterbelts, can also be used to enhance the water supply.

Dugouts have proven to be an effective water supply. For dugouts to be very effective during droughts, they need to be able to store more than one year's supply of water. This is the reason that PFRA has set guidelines for minimum dugout size.

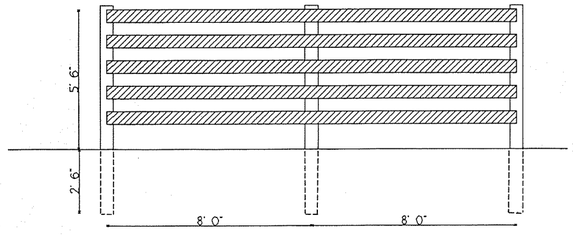
In years when the soil moisture levels are very low in the fall, there is usually a low level of spring runoff. This means producers need to take extra measures to ensure that their dugouts fill in the spring.



Snow trapped in a scale dugout with and without a snow fence.

The most effective measure producers can take is to use well placed snow fencing to trap snow in the dugout. Snow fences should be built as close to the dugout as possible on the windward side. If the spoil pile is on this side, place the fence on top of it. The most efficient design for trapping snow uses horizontal boards placed to get 50 % porosity. The bottom of the snow fence should start from 6 to 12 inches above the ground. This is done so the snow drift will start a few feet away from the fence.

Shelterbelts can also be used to trap snow for water supplies. However, they take a number of years before they are fully functional. Shrub species like Caragana and Lilac are the most suited for trapping snow. The shelterbelt rows should be placed at least 150 feet away from the dugout. This is done to prevent the leaves from getting into the dugout where they could contribute to algae problems. Livestock should be kept away from the shelterbelts to prevent damage to the trees.



Proper snow fence design.

Direct Seeding Manual

Produced By: PAMI & SSCA

PAMI

SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
In co-operation with the Agriculture Development Fund

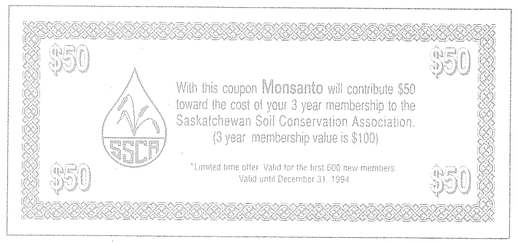
Saskatchewan Agriculture Development Fund

POOL
Saskatchewan Wheat Pool

Monsanto

To order your copy, call PAMI at 1-800-567-PAMI or the SSCA at (306) 787-0558.

SSCA/Monsanto Membership Enhancement Program For NEW Members Only



A recent membership incentive program announced by Monsanto and the SSCA seems to have caused a little confusion among a few SSCA members. The program offers 3 year memberships for $50, with Monsanto contributing another $50 towards the cost of the membership. What some members don't realize, is that the advertisement reads that this program is available to **NEW SSCA MEMBERS** and does not affect existing membership. The idea behind the program is to recruit new people to the Association and SSCA is pleased that Monsanto has provided this incentive. Members at this time are reminded that the **SSCA Membership Enhancement Program** is still being offered. Members who recruit 6 new members in one year will receive an additional 3 year membership as a bonus. So use the Monsanto coupon and start recruiting new members so that you may qualify for your three year membership bonus. For more information on membership, contact the SSCA office in Regina at (306) 787-0558 or your regional soil conservationist.

Request For Submissions

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. Pertinent photographs would be appreciated. Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert St.
Regina, Sask.
S4S 0B1

Prairie Steward . . .
Conserving the Land Resource
The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Spring Issue No. 9, 1993

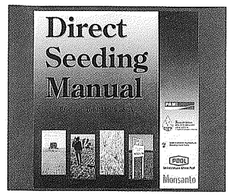
SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
in co-operation with the Agriculture Development Fund

In This Issue:

SSCA To Benefit From Westco/Wheat Pool Fertilizer Sales

By Ray Kettenbach
SSCA Communications Specialist

The SSCA has received a major shot in the arm from the Saskatchewan Wheat Pool/Westco. Beginning **immediately** the Saskatchewan Wheat Pool/Westco will provide a contribution based on **$ 1.00 per tonne** of any fertilizer product purchased by SSCA members from the Saskatchewan Wheat Pool. The Westco/Pool fertilizer support plan could generate up to a maximum of **ten thousand dollars** for the SSCA. This program is very easy for you, the member, to become involved with. When you purchase your fertilizer, simply let your Pool agent know you are an SSCA member and present your SSCA membership card. That's it. That's all you need to do. Saskatchewan Wheat Pool/Westco will do the rest and the SSCA could receive up to ten thousand dollars. The SSCA would like to thank **the Saskatchewan Wheat Pool/Westco** for this generous offer of assistance. The SSCA also would like to thank all of its members who can make this funding program a success. If you have misplaced or lost your membership card just call Crystal in the Central office at 787-0558. She will be happy to send you a replacement card. If you have any questions regarding this funding program feel free to call the SSCA's Executive Manager, John Kiss, at 787-0559.



PAMI/SSCA Direct Seeding Manual A Huge Success

By Ray Kettenbach
SSCA Communications Specialist

In a joint effort to provide the most up to date and accurate information on direct seeding, the Prairie Agricultural Machinery Institute and the SSCA have joined forces to publish the Direct Seeding Manual. The manual has five sections covering Rotations, Residue Management, Seeding Principles and Equipment, Weed Management and Fertility Principles. The manual is held in a three ring binder. This will allow PAMI/SSCA to prepare updates and additional sections for the binder that can be added later. It will also allow a farmer or others interested in direct seeding to keep all of their material on direct seeding in one convenient location. The manual will provide farmers with all the information they will require to begin making the move towards direct seeding. The manual is available exclusively through PAMI in Humboldt, and the SSCA's six regional offices as well as the SSCA central office. The cost for individuals that are not members of either PAMI or the SSCA is $30.00 (plus shipping & handling). PAMI/SSCA members can purchase the manual for $20.00 (plus shipping & handling).

Sales of this manual have been brisk. If you need more information on direct seeding, this manual is your most up to date source of information. The quickest way to order your copy of the manual is to **CALL PAMI at 1-800-567-PAMI** or talk to your Regional Soil Conservationist. (Their names, locations and phone numbers can be found on page 2).

Direct Seeding Conference Sold Out

By Ray Kettenbach
SSCA Communications Specialist

The Trade Building on the Moose Jaw Exhibition Grounds was packed to capacity February 8th and 9th. Over 800 farmers came to hear how to make direct seeding work in their operation. "Direct Seeding: Making It Work In The Drier Soil Zones" was the theme of the SSCA's annual conference. The SSCA would like to thank Monsanto and Flexi-coil for their financial sponsorship of the conference.

Farmers from South Dakota, North Dakota, Montana, Manitoba, Alberta and all parts of Saskatchewan travelled to Moose Jaw to learn what direct seeding is and how it applies to their operation. "The whole idea of the conference was to give producers the most up-to-date information available on direct seeding" says SSCA President Gerry Willerth. There was plenty of information available according to Willerth. In fact every aspect of direct seeding was covered. "Farmers had the opportunity to have their questions about direct seeding answered by researchers, industry experts and other farmers."

Of special note were the various farmer panels that offered experience and information first hand. All of the panel speakers were direct seeders and offered plenty of advice, ideas and opinions on how to begin direct seeding and make a smooth transition. A unique panel discussion featured three female farmers and their varied experiences with direct seeding and soil conservation. The informal evening "Bear Pit" sessions were well attended and many discussions continued late into the evening.

Topics covered at the conference included equipment, fertilizer placement, weed control, residue management, crop rotations, and row spacing among others. A trade show featured 39 booths showing the latest in equipment and ideas related to direct seeding. Larger machines were parked outside and mild weather (especially ordered for the conference) made it easy for farmers to check out the latest direct seeding units. Participants at the conference and trade show rated it as excellent. (see pictures pg 9).

Mild weather allowed farmers to examine the newest direct seeding equipment at the outdoor display area.

Six hundred conference delegates enjoyed a baron of beef and buffalo supper with all the trimmings on the evening of the 8th. Supper was served buffet style and all 600 people were ushered past the bountiful table in under 40 minutes. The banquet, awards and entertainment were enjoyed by all.

The SSCA's sister organizations, The Alberta Conservation Tillage Society and the Manitoba North Dakota Zero-Till Farmers Association were represented by various executive members. Their support and encouragement is certainly appreciated by the SSCA. If you were not able to attend "Direct Seeding: Making It Work In The Drier Soil Zones", conference proceeding are still available. Call or write the SSCA Central Office for your copy. The cost is $15.00. (see page 2 for address & phone number)

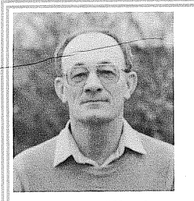
Plans are already under way for the 1994 SSCA annual meeting and conference that will be held in Lloydminster, February 14 & 15th, 1994.

Fast Facts On Soil Conservation

Source: Statistics Canada and various agricultural factsheets

- Crop yields decrease by about 3.4 bushels/acre when 1 inch of topsoil is lost.
- According to a UN study on soil degradation, 10.5% of the earth's fertile land has suffered moderate to extreme soil degradation since 1945.
- Over 800 hundred farmers attended the SSCA's direct seeding conference in Moose Jaw, SK recently.
- 13% of all Canadian farms reported having soil conservation shelterbelts. There are a total of 84,000 kilometers of shelterbelts on farms that reported.
- At least 5 tonnes of topsoil/acre are lost when you can see soil blowing.
- On most soil types, tree rows should be planted 660 ft apart. Use tree rows to divide a quarter section into 40 acre fields.
- Organic matter gives soil its structure, holds moisture and is the source of key plant nutrients.
- Grazing can reduce the fire hazard on rangelands by utilizing plant matter that would ordinarily accumulate as dry fuel.

Association Information



President's Message

Gerry Willerth
SSCA President

As this is my first report as President of the SSCA, I would like to thank Dave Bueckert for his hard work and good leadership during the last year. Many good things were accomplished while Dave was President. I look forward to the challenges this position offers and I am fortunate to have such capable staff and directors to assist me. Your President-Elect, Dean Smith and Dave Bueckert, as Past President, will be of great assistance to me in the coming year.

Annual Meeting and Conference Update

The SSCA's Annual Meeting and Conference was a huge success. Moose Jaw was the location and we had terrific attendance. It was without a doubt the best conference yet. Over 800 farmers interested in direct seeding attended. We had many farmers from Alberta, Manitoba, the northern United States and just about every corner of Saskatchewan. The theme "Direct Seeding: Making It Work In The Drier Soil Zones" was very topical and the information presented was first rate. The positive attitude of everyone in attendance was terrific. It was a very encouraging meeting. Many thanks to all who attended and made this event possible.

At our annual meeting in Moose Jaw, we came to an agreement with Saskatchewan Wheat Pool/Westco Fertilizers. They will contribute $1.00 for every tonne of fertilizer products sold to SSCA members. This money will be used for research, demonstrations, and extension work. This support program will begin immediately and I would encourage you to take part in this funding program if you can. Your association can benefit greatly by where you purchase your fertilizer.

The Future of the SSCA

The SSCA is very quickly approaching the most important time in the history of our association. Your Board of Directors must soon make decisions that will affect the future of the SSCA for the next few years. As our contract with ADF comes to an end, we must make arrangements to move our office as well as begin to wind down our operations under the Canada-Saskatchewan Soil Conservation Agreement. The SOS program ends on March 31, 1993. However, our staff will still operate as usual in Regina, as well as our six regional offices, until at least the end of the 1993 growing season.

Numerous meetings have been held with the Ministers of Saskatchewan Agriculture & Food, Environment and Public Safety and their respective Caucuses. However, we have been unable to get any definitive answers concerning our future. Our presentations were well received and they agreed Soil Conservation must be a high priority. We can only hope their concern leads to commitment.

In September 1992, Organizational Management Services (OMS), of Saskatoon, was contracted to conduct a review of the SSCA, its growth and activities since incorporation and its perception and direction.

I am pleased to say that the review found that most members were satisfied with what our association has accomplished. It also indicated that you want the SSCA to be an information source. Initially, the SSCA was not thought to be a lobby group, however, according to the OMS review, our association should take on this role. At the direction of the board, your association will begin a shift toward becoming more of an advocate group for Soil Conservation in Saskatchewan.

The SSCA Board of Directors has committed themselves to lead an organization that will continue to provide top notch information in the form of an annual conference and a quality newsletter. The five year review has provided the board with feedback that will be beneficial for guiding your association. The review is available at the Regina office, if members wish to study it.

Our association has also developed closer ties to the Manitoba-North Dakota Zero-Till Farmers Association, the Alberta Conservation Tillage Society (ACTS) and the Soil Conservation Service in New South Wales, Australia. The sharing of information will make for much stronger allies in soil conservation and may provide new ideas for everyone involved.

New Projects and Upcoming Events

In January, a joint meeting of Soil Conservation Canada (SCC) and ACTS was held in Edmonton. I was elected to the Board of Directors of SCC. I represent Conservation and Environmental Groups from across Canada. It is my intention, as this director, to encourage more actual producers to support SCC through individual participation. The SCC needs more grass roots support to become a valid, accepted conservation voice.

Our association has recently signed an agreement with Agriculture Canada to establish and operate a Conservation Demonstration Research Farm. It will be funded by Agriculture Canada and the farm will be located south of Prince Albert. The land has been made available to us through the cooperative efforts of Ducks Unlimited Canada. This farm will be called the Saskatchewan Conservation Technology Learning Centre. The SSCA will be working cooperatively with the Prince Albert ADD Board, the Agriculture Canada Research Farm at Melfort, local producers as well as other interested conservation agencies. We plan to include agriculture suppliers and industry in this demonstration farm as it takes shape.

On Tuesday, **June 15th, 1993** the SSCA will be sponsoring a giant **Soil Conservation Field Day** (alternate day in case of rain, June 18th). The field day will take place at the Municipal Airport just east of Moose Jaw. You will be able to compare the results of early May seeding by all of the leading Direct Seeding machines. Other demos will include direct seeding, spraying and harvest-residue management. **This is a free event and is one you should not miss!** Make plans to attend our Soil Conservation Field Day, June 15th. It's the day before the Western Canada Farm Progress Show begins in Regina.

I look forward to meeting you at various meetings and field days in the coming months. Your interest in soil conservation has helped to develop a strong, vital organization with a clear direction for the conservation of Saskatchewan's most important resource, soil. I especially look forward to seeing you at the field day June 15th in Moose Jaw.

Letter to the Editor

February 11, 1993

Saskatchewan Soil Conservation Association:

The Foam Lake & District Growers & Marketing Club would like to thank the SSCA, the Western Producer, and Monsanto for the group conservation award and cash prize given to us at your annual meeting in Moose Jaw. The plaque will be displayed in a prominent place and we hope to use the cash award to further research into Bio-diesel or possibly a pilot project. Bio-diesel is the use of canola oil in place of fossil fuel diesel and as a hydraulic oil substitute, it's a renewable resource and environmentally-friendly. Therefore, we feel it's potential should be explored.

We would also like to thank Ducks Unlimited for all their help in supporting us during the last two years.

Congratulations also to Bernie Niedzwiedz of Wynyard, for winning the individual award, all the winners of the Enviro Student Challenge awards, and the Slide Contest awards.

Something that I noticed and was alluded to by several speakers was the positive attitude of everyone there, this was not a place where people went to complain about grain prices or governments but to learn and plan for the future. The farmers that attended plan on being on the land for years to come and rather than dwell on the tough times we all face, preferred to learn how to adapt and make the decisions needed to accomplish just that. They were there to learn how to make the most of the land they do control, not the government they don't control, and I found that encouraging.

Once again, thank you to all involved and we hope to see you next year in Lloydminster.

Yours truly,
Rob R. McGregor
Foam Lake & District Growers & Marketing Club

Conference Prize winners

SSCA Prize winners

Binoculars, Willard McNass of Girvin, SK
Cypress Hill Resort Package, Shirley Hutchinson of Moose Jaw, SK
Fly In Fishing Trip, Ron Thompson of Indian Head, SK

Thanks to Foster Lake Lodge and Cypress Four Seasons Resort for their contributions.

Monsanto Draw

115 liters of Roundup - John Reich of Swift Current, SK

Westco Draw

Travel Alarm Clock - Gordon Cubbon of North Battleford, SK
Westco Jacket - Lloyd Mercer of Lethbridge, AB
1 tonne of Urea - Germaine Dauk of Naicam, SK

If you are a member of the SSCA and have not received your copies of the conservation video guides you can request them by calling (306) 787 0558 or writing the SSCA central office at #132 3085 Albert Street, Regina, SK S4S 0B1

REGIONAL SOIL CONSERVATIONISTS: (located in Rural Service Centres)

Blair McClinton, North Battleford,	(306) 446 7650
Garry Meier, Tisdale,	(306) 873 4290
Garth Patterson, Saskatoon,	(306) 933 5287
Juanita Polegi, Yorkton,	(306) 786 1526
Pat Flaten, Swift Current,	(306) 778 8284
Bob Linnell, Weyburn,	(306) 848 2381

HEAD OFFICE:

132-3085 Albert Street
Regina, SK
S4S 0B1
(306) 787 0558

John J. Kiss, Executive Manager
Carolyn Fife, Office Manager
James Lokken, Economics Specialist
Yvette Crane, Education Specialist
Chris Zabek, Shelterbelt Information Officer
Ray Kettenbach, Communications Specialist
Crystal Dash, Receptionist/Secretary

Coming Events

One Day Direct Seeding courses. Please contact your regional soil conservation specialist for specifc details.

March

19th Cabri - S.W. Contact Pat Flaten (306) 778 8284

19th Lemberg - E.C. Contact Juanita Polegi (306) 786 1526

23rd Waldheim - N.W. Contact Blair McClinton (306) 446 7650

23rd unconfirmed - N.E. Contact Garry Meier (306) 873 4290

25th unconfirmed - N.E. Contact Garry Meier (306) 873 4290

June 15th
Soil Conservation field day, Moose Jaw, SK. See page 9 for more information or contact the SSCA Regina office (306) 787 0558.

June 16-19th
Western Canada Farm Progress Show, Regina SK. For more information call (306) 781 9200.

July 7-9th
Western Canada Agronomy Workshop, Capri Hotel Red Deer, AB For more information contact: Adrian Johnston (306) 752 2776 (fax 752 4911).

July 20th or 21st
Zero Tillage Field Day, An Agronomic Viewpoint, Agriculture Canada Experimental Farm Indian Head, SK. For more information call (306) 695 2263 (fax 695 2481).

February 14-15th , 1994
1994 SSCA annual meeting and direct seeding workshop, Lloydminster, SK. For more information contact: The SSCA (306) 787 0558.

TipKit Corner

This column presents only the highlights from the Soil Conservation TipKit. For more information consult your TipKit or your SSCA Regional Soil Conservationist.

March

- Consider seeding techniques and equipment needed.
- Consider conservation tillage techniques and equipment needed.
- Determine if emergency control of wind erosion is needed.

April

- Arrange for equipment and labour required for planting shelterbelts. Check planting sites and restake if necessary. Plant shelterbelts when conditions are favourable.
- Controlling winter annuals is necessary for reduced tillage summerfallow. Pre-seeding weed control is also necessary for direct seeding operations. Controlling winter annual weeds may delay your first tillage until June.

May

- Repair water runs and small gullies. Seed repaired gullies to grass to prevent erosion.
- Consider tillage and chemical summerfallow options or a combination of both.
- Plan to attend the Soil Conservation Field Day held at Moose Jaw Airport, June 15th.

June

- Control weeds in your shelterbelt. This is the most important time to keep your shelterbelts free of weeds. Hoeing and tillage are effective for weed control. Chemicals may also be used, however, caution must be exercised.
- Remember to attend the Soil Conservation Field Day held at Moose Jaw Airport, June 15th. **IT'S FREE!**

For your **free** copy of the **TipKit** write to:
TipKit
c/o Canada-Saskatchewan Agreement on Soil Conservation
B33 - 3085 Albert Street
Regina, SK
S4S 0B1

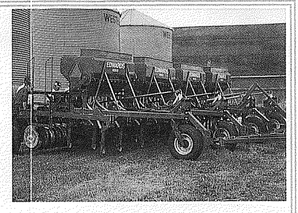
Direct Seeding: The Pros and Cons

By Bob Linnell
SSCA S.E. Regional Soil Conservationist

ADVANTAGES:	DRAWBACKS:
Moisture conservation	Herbicide costs increase slightly
Improved yields	Greater knowledge of weeds required
Reduced labour, more time for management	Requires proper chaff and straw spreading
Less fuel used	Fields not as smooth
Equipment savings	New management system
No incorporation tillage	
Erosion control	

HOW DO I GET STARTED?

1. Start with fields where residue has been properly spread, or fields with low residue such as canola, peas or lentils.
2. Use seeding equipment that will do a good job.
3. Since tillage is being reduced, know how to use the herbicides that will replace tillage.
4. Specialized drills may be available on a rental or demonstration basis. Try to gain experience without large expense.
5. You may be able to modify or upgrade existing equipment to facilitate direct seeding with minimal capital cost.
6. Direct seeding begins at harvest time. Be sure that straw andchaff are spread well across the width of the field.
7. Attend direct seeding seminars and meetings.
8. Talk to experienced farmers. Learn from their experiences and mistakes.



Drills capable of direct seeding

WHAT EQUIPMENT DO I NEED?

1. A drill capable of direct seeding.
2. Tractor
3. Sprayer
4. Combine

IMPORTANT QUESTIONS TO BE ANSWERED IN DIRECT SEEDING.

1. Can I achieve good seed to soil contact with my seeder?
2. Do I achieve adequate straw and chaff spread?
3. Do I have adequate crop rotations?
4. Can I achieve adequate fertility?
5. Do I know how to properly use the necessary herbicides?
6. Is my management system working?
7. Are my economics in order?

These questions are meant to provide the farmer just starting into direct seeding or considering it, with a very quick overview. For more details and direction on direct seeding, the PAMI/SSCA Direct Seeding Manual is a very good source of information. Meeting and field days (for example SSCA Field Day, June 15th at Moose Jaw) are also great opportunities for exchanging information.

The SSCA Is Pleased To Welcome The Following New Members

Acton, Brian	Lemberg, SK	Nicholas, Duane	Francis, SK
Affeldt, Arthur J.	Kerrobert, SK	Niedzwiedz, Bernie	Wynyard, SK
Ailsby, Howard	Wymark, SK	Palmer, Derek	Limerick, SK
Aitken, Keith	Eyebrow, SK	Payak, Don	Weyburn, SK
Ames, Charles	Moose Jaw, SK	Perkin, W. Earl	Rouleau, SK
Babich, Grant	Moose Jaw, SK	Peters, Doug	Hanley, SK
Baerg, Bruce	Dalmeny, SK	Richards, Dick	Assiniboia, SK
Baragar, Leonard	Foam Lake, SK	Robertson, Archie	Zealandia, SK
Barber, Keith	Leslie, SK	Robinson, Jeff	Weyburn, SK
Barker, Bruce	Saskatoon, SK	Roy, Denis	Domremy, SK
Bell Agro Ltd.	Indian Head, SK	Ruecker, Darryl	Lemberg, SK
Bergstrom, George	Stockholm, SK	Salmon, Blaine	Moosomin, SK
Berthold, G.P.	Naicam, SK	Schmidt, Ken	Waldersee, MB
Biffart, Darwin	Woodrow, SK	Scott, William	Lucky Lake, SK
Chernick Farm Ltd.	Rouleau, SK	Seaman, Neil	Eyebrow, SK
Chubb, Allan R.	Edenwold, SK	Sheard, John	Maryfield, SK
Cooper, Bill	West Bend, SK	Smith, John A.	Meyronne, SK
Cornea, Arnold	Drinkwater, SK	Smith, Lyall	Brandon, MB
D'autremont, Dan	Alida, SK	Smith, Jack M.	Regina, SK
Danyluk, Jerry	Gronlid, SK	Solberg, Terrance	Gouldtown, SK
Downton, Keith	Wilcox, SK	Steckler, Pius	Colonsay, SK
Dunne, William	Lanigan, SK	Steckler, Emanuel	Saskatoon, SK
Flad, Lyndon	Macklin, SK	Steier, Frank	St. Gregor, SK
Gardner, Doug	Regina, SK	Taylor, Clarence	Regina, SK
Gattinger, Ron	Neudorf, SK	Templeton Farms Ltd.	Pense, SK
Grosenick, Ron	Moose Jaw, SK	Theaker, A.R.	Regina, SK
Gunther, Dallas	Lanigan, SK	Thompson, Jon	Milestone, SK
Hall, Ken	Earl Grey, SK	Tollefson Farms Inc.	Mossbank, SK
Hammer, Henry B.	Wadena, SK	Trask, Barry	Marcelin, SK
Haraldson, Ed	Hanley, SK	Travland, Norm	Coronach, SK
Hawrysh, Anne	Borden, SK	Tyson, Trevor	Harris, SK
Heidt, Brad	Kerrobert, SK	Varley, Don	Avonhurst, SK
Hergott, Brendan E.	Bruno, SK	Warnock, David J.	Briercrest, SK
Hilton, Gordon	Strathmore, AB	Warwick, Calvin & Lynn	Grenfell, SK
Hoffart, Wayne	Wilcox, SK		
Horn, Dale	Outlook, SK	Watkins, Dave	Aylesbury, SK
Horvey, Levern	Cabri, SK	Watts, Jim	Weyburn, SK
Howland, Gary	Regina, SK	Weisshaar, Mark	Wilcox, SK
Johnston, Adrian	Melfort, SK	Wellsch, Brett	Stewart Valley, SK
Jones, S. Arthur	Paynton, SK	Welsh, Donn	Rhein, SK
Knarr, Wayne	Eyebrow, SK	Wilcox, Verne	Stalwart, SK
Kolenosky, Gary	Landis, SK	Youzwa, Terry	Nipawin, SK
Lang, Ken A.	Tramping Lake, SK	Yuke, Wilfred	Moose Jaw, SK
Laventure, Don	Biggar, SK		
Lawrence, Robert H.	Weyburn, SK		
Lawrence, Ferris	Weyburn, SK		
Lemieux, Laurence	Alida, SK		
Levorson, John	Cabri, SK		
Lins, George	Humboldt, SK		
Martin, Greg	Herschel, SK		
McDougall, R.	Moose Jaw, SK		
McKeown, Greg	Moose Jaw, SK		
Miller, Donald	Wilkie, SK		
Miller, Grant D.	Wilkie, SK		
Miller, Dean M.	Wilkie, SK		
Miller, Roger T.	Landis, SK		
Mossing, Bruce	Bengough, SK		
Murray, Stuart	Golden Prairie, SK		

We take this opportunity to thank our Corporate Members:

Centre For Holistic Resource Management	Albuquerque, NM
DowElanco	Newmarket, ON
Ducks Unlimited	Winnipeg, MB
Flexi-Coil Ltd.	Saskatoon, SK
Monsanto Canada	Saskatoon, SK
Saskatchewan Institute of Pedology, U of S	Saskatoon, SK

New Program Update

By Mike McAvoy
Soils Program Coordinator, Saskatchewan Agriculture and Food, Regina

First of all, I would like to congratulate the Saskatchewan Soil Conservation Association on the success of its 1993 Direct Seeding Conference in Moose Jaw. The capacity attendance attests to the keen interest that has been created in direct seeding and soil conservation. The conference was well organized and presented a most informative agenda.

The existing Canada-Saskatchewan Agreement on Soil Conservation is nearing completion and we are looking forward to programming under a new federal-provincial agreement under the Green Plan.

The Canada-Saskatchewan Accord on Soil and Water Conservation and Development will be replaced by a new Accord which reflects a broader range of agriculture sustainability issues. While the Accord will not commit specific funding, it will set out the general objectives for future program agreements.

The Provincial and Federal Governments are in the process of developing a new program agreement to promote environmental sustainability in the agriculture sector. The new agreement will address a wider range of issues with less money over a somewhat longer period of time than occurred under the Soil Conservation Agreement. As well, Saskatchewan's role in a new agreement must reflect the financial constraints facing the province.

It is hoped that a new agreement can be in place early in the new fiscal year and we will keep stakeholders informed as the process continues.

Editor's note: The SSCA Board of Directors has been meeting with both Federal and Provincial officials sine July 1992 to strongly encourage governments to continue local soil conservation efforts. While the SSCA Board has made some impact on the process, it is likely that a new agreement on soil conservation will not be in place in time to avoid a lapse in soil conservation programs. If you are concerned about a lapse in soil conservation programming, we would encourage you to voice your concerns to us and directly to:

The Honourable Darrel Cunningham
Minister of Saskatchewan Agriculture and Food
Room #30 Legislative Building
Regina, Saskatchewan
S4S 0B3

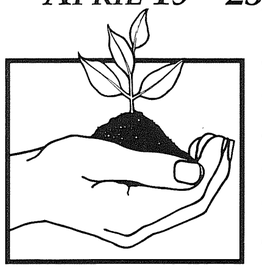
and

The Honourable Charles Mayer
Minister of Agriculture
House of Commons
Ottawa, Ontario
K1A 0C5

SSCA Employee of the Month

Yvette's Fine Dining and Conservation Education Emporium (actually this was the central office Christmas tea)

National Soil Conservation Week
April 19 - 25, 1993



Soil Conservation . . . It's in Our Hands

The Environmental Management and Protection Act

By Leonard D. Andrychuk
Partner with the law firm MacPherson, Leslie & Tyerman

In the last issue, I discussed *The Clean Air Act*, a piece of legislation administered by Saskatchewan Environment and Public Safety (SEPS) affecting farm operations with the potential to cause air pollution, particularly stubble burning. In this issue, I will discuss another piece of legislation administered by SEPS, *The Environmental Management and Protection Act* (the EMPA). Generally speaking, the EMPA may affect farm operations which have the potential to cause pollution of the soil or surface or ground water.

The EMPA prohibits the discharge (without a permit) of contaminants in circumstances where such discharge may cause water pollution. It provides that no person shall, without a permit, cause or allow any contaminant to be discharged, deposited, drained or released where there is a reasonable possibility that it may change the quality of any water, including ground water. The Water Quality Branch has so far not interpreted this provision to require a permit for the normal application of farm chemicals to crops in the course of farming operations. It is the Branch's view that the requirement applies only to "point source" emissions (i.e. an industrial discharge pipe).

However, the EMPA also prohibits any person from discharging, depositing, or releasing any contaminant in surface water or along the banks or shore of surface water for the purpose of poisoning, killing or otherwise controlling weeds, algae or other organisms, without a permit. The Branch therefore requires that a permit be obtained whenever chemicals are to be applied to surface water or the banks or shore of such water to control nuisances such as mosquitoes, flies, algae and vegetation, including vegetation in drainage ditches. The Branch considers the "bank" to be any area within 25 metres of the high water mark where chemicals are applied from land and 50 metres where applied by aircraft. Regulations exempt any drainage works permitted under *The Water Corporation Act* and works that handle or treat livestock waste from permitted intensive livestock operations.

The Environmental Spill Control Regulations, pursuant to the EMPA impose a duty to report the discharge of any of 117 pollutants where such discharge is at or above a specified or reportable level. These Regulations apply to farm operations. The Regulations require a person having control of a pollutant which is "spilled" to report the spill as soon as possible by telephone to the **Spill Report Centre (1-800-667-7525)**, to the owner of the property on which the pollutant is spilled, and to the owner of the pollutant. The oral report must be followed within 7 days by a written one. Immediately after a spill, the person having control of the pollutant and the owner of the pollutant are required to take all reasonable action, having due regard for the safety of the public and themselves, to prevent further discharge, contain the pollutant, minimize the effects of the spill and restore the affected area.

The list of reportable pollutants includes gasoline, diesel fuel, lubricants and other petroleum products as well as a large number of pesticides. Whether a spill must be reported depends upon the substance spilled, where it is spilled and the amount spilled. For example, an on-site (on your own land) spill of gasoline must be reported if the amount spilled is more than 200 litres in a 24-hour period (any loss from an underground container must be report). An on-site spill of Malathion must be reported if more than 15 kilograms are spilled in a 24-hour period. If the spill of Malathion occurs offsite, it is reportable if the amount spilled is more than 5 kilograms in a 24-hour period.

The list of reportable substances is extensive and it would be worthwhile to obtain a copy of the Regulations for your reference. Bear in mind that the Spill Control Unit, as well as keeping a record of spills, is able to advise you with respect to any clean up that may be required and may be a helpful resource to you, particularly if you have a concern about contamination of drinking water.

The Hazardous Substances and Waste Dangerous Goods Regulations under the EMPA have been recently amended. Farm underground storage tanks will be covered by the Regulations if they exceed 205 litres capacity and are used to store a hazardous substance other than an agricultural chemical (meaning fertilizer, pesticide or a soil supplement) stored for consumption on the farm. This means that a permit is required to store petroleum products or diesel fuel in any underground storage tank in excess of 205 litres capacity. A permit will also be required if the tank is used to store an agricultural chemical which is not used in the farmer's own operation, for example, if it is used in a custom farming operation. Permits are not required for any above ground farm storage tanks unless they are used to store petroleum, diesel fuel or agricultural chemicals used for a commercial purpose.

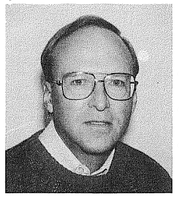
I am informed that the permit requirement for underground storage tanks will not be strictly enforced against farmers having existing tanks until April 1, 1994, and that, at present, the Unit will be asking farmers to register such tanks. Tanks which are not in satisfactory condition or are too old will be required to be upgraded.

You must bear in mind that approval is now required to construct, install, alter or expand any underground storage tank covered by the Regulations. The Regulations spell out construction standards for the tanks. The Regulations also require the operator or owner of the storage facility to maintain certain documents, including a Material Safety Data Sheet, to maintain certain inventory records and to do inventory testing to detect tank leakage at the earliest possible time. Finally, the Regulations require the approval of SEPS to decommission before any tank is removed, abandoned, disposed of or permanently closed. Underground storage tanks may not simply be abandoned. They must be emptied, removed from the ground and rendered unfit for further use and the area affected by the tank must be decontaminated.

It is an offence to contravene any provision of the EMPA or the regulations under it, punishable by a fine of up to one million dollars to imprisonment not exceeding three years, or to both a fine and imprisonment.

(Editor's note: MacPherson Leslie & Tyerman is a Saskatchewan law firm founded in 1921. It has offices in both Regina and Saskatoon. Mr. Andrychuk is a partner in the firm who has written and lectured in the field of environmental law.)

South West Director Profile



- Lorne Crosson
- 2 children
- Brown soil zone
- Married to Marge
- Farms near Limerick
- Spring wheat, durum wheat, barley & perhaps peas this year.

Q: How long have you been a member of the SSCA?

A: Right from the start. There was a meeting in Regina a number of years ago. I think that was the startup of the SSCA. At that time, we took memberships not really knowing what we had a membership in.

Q: What prompted you to get involved with the Association?

A: Well, I've always been interested in soil conservation, both as a farmer and when I was with Agriculture Canada - I was a soil specialist. There's always been the interest in soils and particularly on the farm here, since my farm is pretty small, and I couldn't afford to buy more land, the easiest thing to do is just seed more acres. Of course, you have to be more concerned about conservation, both of the soil and the water. I've sort of naturally progressed into soil conservation.

Q: What sort of things are you doing on your farm in terms of soil conservation practices?

A: I've always tried to keep as much trash on my land as possible. I tried to stay away from the use of harrows and whatnot. In the earlier years, I tended to use dead rods, tried to maintain as much trash on the surface as possible during the summerfallow years. Occasionally, I tried chemfallow and then last year, I chemfallowed everything. I had a contractor come in and do the chemfallowing with the Detectspray. And as far as moisture conservation, I use stubble stripping to try to trap as much snow as possible.

Q: How many years would you say you've been at that?

A: Well we've been on the farm here about 17 years, so I guess about 16 years; the second year I was farming, I started into the longer rotations and that I guess was about the start. As I became aware of the different conservation techniques, I just added them to my system here.

Q: What would you say your objectives are in regards to soil conservation? Where do you hope to end up?

A: Well, a few years ago, we had a tremendous wind storm that came through here and it was before I had done too much conservation wise and I ended up with about a foot of topsoil in areas of my farmyard. I decided then and there that wasn't going to happen again. I guess what I'm looking for is to prevent any soil movement, whether it's by wind or by water off my land. I don't mean to pass it on to my neighbors, they've got soil of their own, so I'm going to try to hold it here as long as I can.

Q: Is there an economic factor tied in with soil conservation on your operation?

A: There certainly is. I've had an airseeder here since about 1980-81 and I've been direct seeding on and off since then. What that does, of course, is cut down the use of the tractor and over the years, the use on my tractor has dropped well down from what it was in the beginning. And of course the fuel costs drop off. I don't have much equipment here either because I'm direct seeding with an air seeder and because I'm chemfallowing. I don't need to summerfallow, so I've got the bare minimum of equipment for farming.

Q: Why aren't there more people practicing soil conservation in our province?

A: Well, there's probably a number of reasons. One of them is people just don't like to change. Something's been successful for them for a number of years and they just don't want to try something new. Others, I guess, when they see soil conservation or they hear about it, they hear about all this fancy new equipment which costs an awful lot of money and that kind of scares them off. They get the idea that if they practice soil conservation, it's going to cost them money. Stubble cropping, particularly here in the south, has been practiced ever since farming started here and generally, not all that successfully. I guess when they talk about soil conservation, it comes into mind that you're probably going to have to start stubble cropping and some people think that there's just no way you can do that. I've noticed over the years since we've been on the farm here, people are changing. It's slowly coming, but there is more and more stubble cropping and an awful lot of chemfallowing going on now. It's just a gradual process that I think will probably take over.

Q: Do you think the Association is doing a good job convincing farmers that conservation is worthy of moving towards?

A: Oh, I think so. Particularly with the annual conventions. As we've seen over the last several years, the number of people showing up at these events is getting larger and larger all the time and the news is getting out. With the staff in the field working with people and particularly the SOS program, I think the word is getting out there.

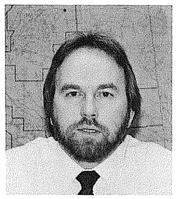
Q: Do you think we are going to move toward a compliance program similar to the U.S. farm bills?

A: I would think it's probably going to come. It's not going to be popular, but as long as the taxpayers are subsidizing the farmers, I think there's going to have to be some compliance in there so that the taxpayers are getting something for their money. I don't think they can continually subsidize farmers and have them go on doing things on the farm that are not good for the future. I can see compliance coming, probably gradually, but it will come.

Q: Lorne, you're one of the newest members on the board, what sort of goals or objectives would you like to see the association achieve in the coming years during your term?

A: Well, just a continuation of what's been going on. I hope that with my farming background and the research background that I have, that I can contribute something as a board member and as a member of the SSCA. I guess it's just to continue what we're doing and make sure that it doesn't die down. Sometimes, these things start up and everybody gets excited about it and then it eventually drops off. I guess my biggest concern is that this doesn't happen at all. Being a new member on the board, I was totally impressed with the other board members. My first meeting was in January and we had a meeting at Riverhurst. It was a two-day meeting; it started about noon on a Tuesday and ran until noon on Thursday. When I was given notice of the meeting, I couldn't think of how a meeting could run that long and keep busy at it, there had to be some lost time. But I was pleasantly surprised! The meetings not only ran all day, but they ran until late in the evening too. It was all business, I was really impressed by all that. I was also very impressed by the staff; both the field people and the central staff - particularly at the Moose Jaw convention, that was very professionally done.

Director-At-Large Profile



- Lee Moats
- Two children
- Regina Heavy Clay
- Married to Laurie
- Farms near Riceton and is employed with Ducks Unlimited as full time Provincial Agrologist
- Cereals & occasionally oilseeds, perhaps peas this year

Q: How long have you been associated with the SSCA?

A: My first involvement with the SSCA was in the formation process. It started when the Manitoba-North Dakota Zero Till Association meeting was in Regina, which was '86 or '87. Jim Halford had a contract with the intention of forming some sort of soil conservation group. I was working in Moose Jaw as an Ag. Rep. and he asked me to help organize a meeting. There was a group of local farmers who gathered and took part in forming the association. I didn't join then, but I did in '89. I joined as a farmer member at that time and then, subsequently, let my name stand for the nomination and was elected.

Q: What are some of the conservation practices you're doing on your farm?

A: The biggest primary conservation practice we do is zero till. We moved away from summerfallowing in 1984. After moving away from fallowing, we were able to largely get our erosion problems under control. We were still concerned about some of the potential erosion because of the traditional practice of seeding with discers and harrow packing and so on, so we moved into a zero till regime. We started zero tilling in 1985 with winter wheat and we've tried a variety of drills and things. In 1991, after Laurie and I moved out to the farm, we bought some drills. We sold our discers, our cultivator and split up the family farming operation that we'd had with one of my brothers and we went zero tilling on our own.

Q: Are you a true zero tiller or are you direct seeding?

A: We're zero tilling. We have an old DK Noble drill. They were what we could afford on our particular size of farm. We sometimes, when required, use the Roundup burnoff and then we seed with our drills, and that's it. I wouldn't exactly say we've got all the wrinkles of the zero till system ironed out on the Regina Plains. The heavy clay soil type is a big problem, but in my opinion zero till is the way to go. I know this view is not shared by a lot of people, they have a need to go with an interim step of still maintaining some level of tillage in their regime. We've decided that if we're going to move away from tillage, it's going to be all the way.

Q: Do you have other objectives in regard to soil conservation that you want to try in your operation?

A: We look at the whole issue of soil conservation from a land management perspective. We look at it as more than just how we treat our soil. Our land on the Regina Plains is probably one of the more altered environments that exist in Saskatchewan. There isn't a square inch of native habitat or native soil on our farm or on any of the neighbours' farms. I guess what we're trying to do is to find ways of trying to incorporate things other than very intensive farm practices on our farm. We're trying to do that by incorporating winter wheat and zero till into our regime and also we've planted a large number of trees around our farmstead. We just don't exactly know what else we are going to do, but we want to do something. Our land capability just happens to be very good for producing grain crops and there's no "wasteland" in the typical sense of the word.

Q: What would you say is the reason more people in the province are not practicing soil conservation?

A: I think that traditional beliefs and farm practices are one of the key things. People have done things in a certain fashion for a long time and they don't see a need or see a reason to change. As well, they probably don't have the sense that what they are doing now is in any way harmful. I guess it's the lack of a perceived or a felt need to change.

Q: What would you say are some of the benefits of being a member of the Association?

A: Well, I have this notion that the SSCA is playing a role in a movement in traditional agronomic practices toward something that's much better. I think that, as a member, you get a certain sense of satisfaction of being part of a new wave. I think particularly through the annual meeting that it's a good way of associating with individuals that have had or want to have the same experiences as you do. So there's a lot of sharing of ideas and seeing what other people have experienced. I guess also from my own perspective, as a professional person working for Ducks Unlimited Canada, it allows a DU employee to be part of a grassroots farmer organization that is important from my company perspective.

Q: As the Director-at-large what are your plans?

A: Since I was recently elected, I haven't had very much time to chat with any of the other directors, or the Executive Manager to see how the Director-at-large goes about representing associate members of the association. I would hope that I can play a role in representing some of the ideas and possibly even concerns that associate members of the SSCA have. I think there's a lot of good ideas that working professional agrologists have and these ideas could help further the SSCA. I hope I'm able to be involved in that regard.

REGIONAL ROUNDUP

Foxtail Barley in Chemfallow Rotations

By Blair McClinton
SSCA N.W. Regional Soil Conservationist

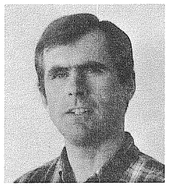
When conservationists were looking for better ways to conserve crop residues, substituting herbicides for tillage in the fallow year fit the bill. Chemfallow has proven to be an effective way to maintain crop residues for erosion control. However, the use of chemfallow does pose some management problems, especially in direct seeding systems.

Using chemfallow as part of a zero tillage system will favour the growth of certain weed species. The most common weed problem associated with chemfallow rotations under zero tillage is foxtail barley. Wild buckwheat has also become a problem in some locations.

In zero till studies at Indian Head, Scott and Swift Current, foxtail barley became a problem in the zero till rotations with chemfallow. (D. Derksen, S. Brandt; personal communication) Foxtail barley did not become a problem in the minimum till or conventional till systems because it is easily controlled by tillage. This weed did not become a problem in the continuous cropped rotations regardless of tillage system. This weed becomes a problem in chemfallow because of the lack of crop competition and because it is not easily controlled with Roundup at the rates used in chemfallow.

The best way to avoid problems with this weed in direct seeding systems is to eliminate fallow from the rotation. The additional crop competition seems to keep this weed under control. The one exception would be in saline areas where the foxtail barley would have the advantage.

In drier areas, where eliminating summerfallow is not practical, a system that uses some tillage may be required. Research at the Scott Experimental Farm shows that if tillage is to be used in a "partial chemfallow" system, it should be the first operation in the spring as this maintains the most residue. Direct seeding implements that use sweeps (ex. New Noble Seed-O-Vator) will usually provide enough disturbance to prevent problems with foxtail barley. However, this additional soil disturbance, whether in fallow or during seeding, will likely increase other annual weeds and increase moisture loss.



Direct Seeding Openers

By Garry Meier
SSCA N.E. Regional Soil Conservationist

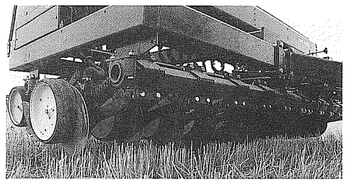
The function of a soil opener on a direct seeding implement is to place the seed into soil moisture with the proper amount of soil placed on top of the seed to ensure good crop establishment.

There are basically two opener concepts on the market today - disc type openers and hoe type openers. Disc type openers generally have more moving parts than do hoe type openers and rely upon the weight of the seeding implement and the sharpness of the disc to ensure good penetration into the soil. Disc type openers generally cause very little soil disturbance. That may or may not be desirable depending on the farm location and soil type. Disc openers are also preferred by farmers in very stony conditions because they do not pull rocks up to the soil surface. Producers in these soil conditions feel that the higher cost of operation of disc type openers is more than offset by the reduced cost of stone removal from their fields.

Hoe type openers are available in a wide variety of designs and configurations ranging from 1/2 inch wide banding knife configurations to cutoff sweeps that range in width from 5 to 7 inches. All hoe type opener designs have the potential to disturb more soil than do disc type openers. The amount of soil disturbance created by a hoe will depend upon the design of the opener, the spacing between the openers, the depth of seeding, the condition of the soil and the rate of forward speed. Hoe type openers must be operated on a shank trip assembly that is strong enough to maintain the proper opener angle as it is pulled through the soil. However, hoe type openers on trip assemblies with very high release pressures tend to cause problems in stony soil conditions by pulling stones to the surface of the soil and also by breakage of the opener itself.

The amount of power required per opener to pull it through the soil is important. Power requirement is determined by the design of the opener. High lift sweeps, side banding openers and paired-row openers increase power requirement. Narrow openers that cause soil to shear in front of the opener will work to minimize power requirements. When worn, some opener styles have increased power requirements, while others have decreased power requirements. These differences are important where available tractor power is only marginally adequate. Selection of an opener design for a direct seeding implement should include an evaluation of the power requirements, seed and fertilizer placement, the amount of soil disturbance and penetration ability when new and also when the openers are worn.

Opener design is one area of direct seeding where we are seeing the most rapid change in design. There are many companies in the market place today manufacturing and developing a wide variety of opener types for use in direct seeding systems. Farmers should consult their local Soil Conservation Specialist or PAMI for additional information about the many opener types that are available.



Disc Type Openers

Conservation in the Classroom

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

As the saying goes "everybody's a critic". Recently the SSCA has received some criticism for asking its staff to venture into the classroom to discuss the importance of soil with students. The critics seem to feel that the Department of Education is better able to instruct the students on that topic and that the time spent with the students is "wasted" because it's not spent with producers. I have to disagree.

Over the course of the last three years, I've had the opportunity to visit over 30 schools and talk to about 500 kids. The teachers at all the schools have seemed happy, almost grateful, for having someone knowledgeable about the soil resource addressing their students. Most teachers are not comfortable talking about agriculture generally or soil specifically. They recognize that professional agrologists are better able to instruct the students on those topics and the Regional Soil Conservationists are available to do just that.

I find the students, whether they're in grades 5 and 6 or grades 11 and 12, are interested in what's happening to our soil. For the most part, they haven't given much thought to the importance of the soil resource. They haven't realized the damage to the soil that occurs during a dust storm or when a gully has been cut in a field. They don't know that salinity is a problem that can be managed but not cured. The importance of organic matter in soil is often not known; urban sprawl is generally a new phrase.

This lack of knowledge disturbs me because the students today are the consumers, policy makers and politicians of tomorrow. How will they make informed decisions about agriculture in the future? I've been told by students that we shouldn't raise livestock, that all our land should grow annual crops. Students have informed me that putting fertilizer in our soil and spraying herbicides is just plain BAD. They have no understanding of the alternatives to using these inputs and no knowledge of any of the research that has been conducted involving these inputs. Students have suggested that building shopping malls or professional sports team stadiums on productive fields isn't really a concern because so many jobs will be created by the stores and the stadium. Such statements clearly signal that the students require more and accurate information about this province's soil resource.

The students and their teachers can't be blamed for their lack of knowledge or misunderstanding. The propaganda that's spread in the media and even in the books allowed into the school libraries is alarming.

We all remember the Alar scare a few years ago. In the January 1992 edition of the **"Cattleman"** magazine, it reports that a prominent television journalist, suggests "lazy reporters" were responsible for the public hysteria created when it was reported our apples were sprayed with a substance that may be carcinogenic. The controversy over that pesticide has since died but it has left a lasting impression on Canadian consumers, especially students.

In a Saskatchewan government press release (dated July 5, 1991) it was reported that four books appearing in school libraries around that time contained misinformation about livestock production and its impact on the environment.

In the December 1992 issue of the **"Cattlemen"** magazine an article discusses the number of youth "green clubs" being allowed to enter American schools. In their efforts to "save the planet" the groups feed the unsuspecting young students with misinformation about agriculture.

A number of people are making the effort to change our kids' attitudes about farming methods and food production. Educational events such as Agribition in Regina and Harvest Showdown in Yorkton are good but they are just not enough. Until the Department of Education is able to provide a well-rounded agricultural education for its teachers, someone who is knowledgeable about prairie agriculture must be allowed into the schools. SSCA, with its mandate to provide education and extension, is able to do just that — at least in the area of soil and soil conservation.

So, while the critics are concerned about the SSCA staff visits to schools, have they considered the consequences if we don't?

Economics of Switching to Direct Seeding

By Blair McClintion
SSCA N.W. Regional Soil Conservationist

In 1990, Lorne Ferguson, who farms in the Paynton area with his brother Don, switched to a direct seeding system. Lorne presented an economic comparison of their old conventional tillage system to direct seeding at the Direct Seeding conference in Lloydminster last November.

The Ferguson Stock Farm is a mixed farming operation. The brothers crop 1800 acres, irrigate 300 acres and have 2800 acres of pasture. They maintain a 400 head cow herd and feed most of their calves in their feedlot. They grow a variety of cereal, oilseed, pulse and forage crops.

Both the grain and livestock operations had heavy workloads in the spring and fall. Under the old system, the Fergusons found they had little time for personal projects and family. This was the main reason that they started looking seriously at direct seeding.

Their seeding and tillage equipment needed to be replaced, so in the winter of 1989/90 they worked out an economic comparison of conventional seeding to direct seeding. In order to compare the economics of the two systems, they made several assumptions for the products and equipment used to farm the two systems (Table 1). The costs for fuel, labour, tractor use and repair allowance are in $/hour. Herbicide costs are listed in $/acre and fertilizer in cents/pound.

Table 2 compares the change in capital investment with the switch to direct seeding. Lorne listed the equipment and its market value needed to farm under each system. He did not include equipment that would be the same in either system. The total capital investment for conventional farming is $72,000 and for direct seeding is $123,000. This shows that they needed to finance an additional $51,000 to direct seed. This $51,000 is what it cost them to convert to direct seeding from their old system. Continuing to farm conventionally would also have required a major investment since their old seeding and tillage equipment needed to be replaced.

For the total cost comparison between the two systems, Lorne assumed a 1000 acre farm with 50% cereals, 25% oilseeds and 25% pulse crops (Table 3). He shows the additional costs due to requiring additional capital of $51,000 to direct seed. This $51,000 is financed at 12% over ten years. The total cost to farm 1000 acres conventionally is $57,259, while the total cost to direct seed 1000 acres is $59,064. If this same machine seeded 2000 acres, the total costs are $114,618 for conventional and $109,236 for direct seeding.

He also compared the operating hours for the two systems. Table 4 compared the two systems on the same 1000 acre farm. It is interesting to note that they saved 243 hours (or 20 twelve hour days) of field work under direct seeding. 130 hours (eleven days) were saved during spring seeding. Lorne felt that this was a real time savings that could be spent doing other things.

The Fergusons believe that the savings in fuel, time and maintenance more than pay for the initial investment. These numbers are interesting because by comparing the values of their old equipment with their new equipment, they biased the figures to favour conventional tillage. Even with this bias, direct seeding still compared favourably. Since this may not be true in all cases, farmers should do the comparison for their own farm. The new "Economics of Zero Tillage" worksheet is one way of doing this. It is available from the SSCA, PFRA or your local Rural Service Centre.

TABLE I

COST ASSUMPTIONS PER HOUR

1. Fuel	**COST/HOUR**
- Deep band, cultivate, Conserva Pak	$14.00
- Drill seed	10.00
- Spray	8.00
2. LABOR - Allowance is . . .	$10.00
3. TRACTOR USE - 15 cents/pto hp/hr	
This covers fixed cost (investment, depreciation, insurance) and repairs	
Large tractor - 225 HP	$33.75
Large tractor - 160 HP	24.00
Medium tractor - 130 HP	19.50
Small tractor - 110 HP	16.50
4. EQUIPMENT REPAIR ALLOWANCE (excluding tractor)	
Sprayer	$10.00
Cultivators	6.00
Deep band, Conserva Pak	8.00
Disk drill	10.00
Harrow	5.00
Granular applicator	5.00
5. HERBICIDE COSTS	**COST/ACRE**
Soil incorporated herbicide	
(pulses)	$11.00
(oilseeds)	16.00
Winter annual control	2.00
Pre-seeding burn off	
(Round up)	6.50
In-crop control	
Broadleaves in cereals	3.50
Grasses in oilseeds	14.00
Broadleaves in pulses	14.00
6. FERTILIZER COSTS	
Nitrogen - $0.23/LB	

TABLE III

COST COMPARISON

CONVENTIONAL VS. CONSERVA PAK

1000 ACRES SEEDED 50% CEREALS, 25% OILSEEDS, 25% PULSES

A. VARIABLE COSTS	CONVENTIONAL	CONSERVA PAK
Fuel	$ 6,098.00	$ 2,464.00
Repairs	3,344.00	1,860.00
Herbicides	14,250.00	19,500.00
Fertilizer	18,050.00	18,050.00
TOTAL	$ 41,742.00	$ 41,874.00
B. Labor @ $10.00/HR.	$ 4,760.00	$ 2,330.00
C. TRACTOR COSTS		
Large 354 HRS.	$ 8,496.00	100 HRS. $ 3,375.00
Medium 83 HRS.	1,618.00	133 HRS. 2,593.00
Small 39 HRS.	643.00	
476 HRS.	$ 10,757.00	233 HRS. $ 5,968.00
TOTAL CASH & FIXED COSTS		
A + B + C	$ 57,259.00	$ 50,172.00
D. Ownership Costs		
$51,000 @ 12% over 10 years =		$ 8,892.00
Grand Total	$ 57,259.00	$ 59,064.00
Assume Crop 2000 Acres	$114,618.00	$109,236.00

TABLE II

CAPITAL COST IN CHANGING TECHNOLOGY

Equipment Cost Comparison
1000 Acres of Crop

EQUIPMENT NEEDED	CONVENTIONAL	CONSERVA PAK
TRACTORS		
1-225 hp		$ 32,000.00
1-160 hp	$22,000.00	
1-130 hp	15,000.00	15,000.00
1-110 hp	6,000.00	
SEEDING		
Drills 24 ft.	$ 6,000.00	
H.D. Cultivator 30 ft.	6,000.00	
L.D. Cultivator 30 ft.	5,000.00	
Packer Hitch 30 ft.	3,000.00	
Conserva Pak 28 ft.		$ 67,000.00
SPRAYER		
84 ft.	$ 6,000.00	$ 6,000.00
HARROW		
60 ft. Tine	$ 3,000.00	$ 3,000.00
TOTAL CAPITAL INVESTMENT	$72,000.00	$123,000.00
CHANGE IN CAPITAL TO SWITCH TO CONSERVA PAK SYSTEM		$ 51,000.00

Table IV

OPERATING HOURS COMPARISON

Conventional Seeding vs. Conserva Pak Seeding
1000 acres 50% cereals 25% oilseeds 25% pulse

CONVENTIONAL SEEDING		CONSERVA PAK	
FALL HOURS (201)	**HRS**	**FALL HOURS (80)**	**HRS**
Fall Banding/incorp grass herbicide	105	Fall spray 2,4-D	26
Fall Cultivation	83	Granular Herb.	27
Spray Trifurilex	13	Harrow	27
SPRING HOURS (256)		**SPRING HOURS (126)**	
Pre-Seed Cult.	166	Spring spray round-up	26
Seeding	83	Seed/Fert/Pack	100
Spray Round-up (250)	7		
JUNE SPRAYING		**JUNE SPRAYING**	
Broadleaf Spray	19	Oilseed Grass Control	7
		Broadleaf Spray	20
TOTAL HOURS	476	**TOTAL HOURS**	233
TOTAL HOURS SAVING	476 - 233 = 243 HRS (20 DAYS)		
SEEDING SEASON SAVING	256 - 126 = 130 HRS (11 DAYS)		

Sweet Clover Works In Dark Brown Soil Zone

By James Lokken, SSCA Soil Conservation Specialist
& Garth Patterson, SSCA W.C. Regional Soil Conservationist

At Thor Farms Ltd. of Penzance, sweet clover has a regular spot in the crop rotation. Despite the location of the farm in the drier dark brown soil zone, the Thorson brothers feel the soil-building and fertility benefits of a legume green manure crop outweigh concerns about moisture depletion. Continuing to improve on a practice their father introduced, John, Jim and Tom Thorson have about 700 sweet clover acres awaiting a direct seeded cereal crop this spring.

The Thorsons originally combined a practical response to a technical problem with their concern for the health of their soil. Tom says "My father started growing rapeseed back in the 1960s'. To enable the drills to handle the low seeding rate, Dad mixed in sweet clover to bulk up the seed. This also enabled him to gain the benefits of a legume in the crop rotation."

Today, the Thorsons seed sweet clover with canola using an airseeder with sweeps. They usually direct seed into standing chemfallow. They broadcast both the canola and the clover seed in front of the cultivator and follow with a homemade rotary harrow drawbar and coil packers.

There is some competition between the clover and canola, especially in low spots, but the Thorsons do not consider canola yield losses to be significant. They seed canola at three to six pounds per acre, depending on the variety, and seed inoculated yellow blossom clover at five to six pounds per acre. Sweet clover is underseeded to canola rather than to cereals because with clover in cereals, weed control options are limited. In addition, grasshoppers seem to eat the clover after the cereal starts to ripen. The Thorsons have lost whole fields of sweet clover in this way.

A few years ago, they turned to green manuring in place of haying (haying always seemed to get behind schedule) to reduce moisture use and increase nutrient benefits from the sweet clover year. However, time, cost and moisture loss associated with tandem discing a clover field, often twice, were a concern. Discing started at the optimum time, when the clover was in full flower, but usually finished two weeks late. Two discing operations cost at least $8 per acre in total costs and put extra hours on their 4WD tractor.

By the time the succeeding cereal crop was planted the next spring, the Thorsons had worked the land a couple of more times. It would be dried out and susceptible to wind erosion. Tom notes "something wasn't right when we were using a legume plowdown in our rotation for soil conservation purposes and then we had to worry about erosion."

Even with snow management, where clover strips were left after discing or haying, yields in the following cereal crop were highly variable. When a yield comparison study in which they were participants further proved that yields from crops grown after sweet clover were not dependable, the Thorsons began to cut back on underseeding canola with clover.

Then the decline in the price of glyphosate made chemical control of clover growth more economical, and they began to add more sweet clover back into their rotation. For several years, they have experimented with spraying a mixture of one litre of Rustler (glyphosate and dicamba), .25 - .30 litres of 2,4-D, and ammonium sulphate to kill the clover in full bloom, usually at the end of June. The total cost of this operation is about $8.50. The clover dies back after a couple of weeks and is left standing to catch moisture until spring.

June spraying of sweet clover can mean dragging the sprayer through clover four to six feet tall. Labour and power requirements and machinery wear probably are twice as high compared to a normal spraying operation. Spraying in 1992 was particularly hard since the clover yielded 2 to 2.5 tonnes per acre as opposed to the usual 1 to 1.5 tonnes. The Thorsons raise the sprayer windscreens as high as possible for this operation. The frame of the sprayer lays the clover down and then the clover springs back up under the windscreen and receives a full shot of spray. High pressure is maintained so the spray pattern is not disrupted.

Sweet Clover provides excellent snow catch.
photo courtesy Tom Thorson.

In 1990, the Thorsons sprayed 40 out of 160 sweet clover acres with the Rustler/2,4-D tank mix. They mowed the standing sweet clover with two 10 foot mowers the next spring and direct seeded without difficulty.

In the summer of 1991, they sprayed 400 acres of sweet clover. The next April they worked the clover twice with a rotary harrow and packers. However, this did not break the clover residue up enough, even though the clover stand was relatively poor. They were able to direct seed the poorest yielding field, but had to tandem disc the other fields ahead of the airseeder.

This spring the Thorsons plan to purchase 25 to 30 feet of rotary or flail mower to mow 700 acres of standing clover. Tom estimates the total cost of mowing will run about $5 per acre.

Sweet clover is usually grown on a field every 5 - 7 years, depending on the frequency of canola in the rotation. After the sweet clover is left standing through the winter, surface soil moisture is excellent. The deep moisture may be used up by the sweet clover, but the canopy catches fall and winter precipitation and evaporation rates are low. Establishment of the next year's cereal crop is usually good.

The Thorsons follow a flexible cropping rotation with the general pattern of canola/sweet clover/2 to 4 cereals/fallow. The cereals include canary seed, barley and spring wheat. The first year after clover, the cereal crop needs very little nitrogen, about the same as a crop on summerfallow. The expected yield is as good as or better than a crop on summerfallow. The second and third years after clover, the nitrogen requirements increase, but still are lower than the amount needed for other stubble crops.

A goal for the Thorsons is the elimination of summerfallow. If they could produce good canola yields on stubble consistently, the sweet clover year would be the only year in the rotation without a cash crop. With their present machinery complement, they feel they need a fallow year of some sort for perennial weed control, especially for quackgrass. In the clover year, quackgrass can be treated with glyphosate spot treatments.

The biggest concern about growing sweet clover revolves around short term economics. Tom says "It boils down to nitrogen and organic matter versus moisture. Moisture is the fundamental limiting factor here. If there is no crop because of a lack of moisture in the year following sweet clover, the value of the nitrogen and organic matter accumulated cannot compensate for that crop loss in the short run."

However, the Thorsons plan to continue using sweet clover as an integral part of their rotation, provided they can handle the residues in a way that conserves moisture and allows direct seeding of the following crop. According to Tom, the benefits of growing sweet clover include nitrogen fixation, improved tilth and organic matter and a soil cover which improves water holding capacity. He says "There is no doubt that clover has a variety of long term benefits which are overlooked too often. With improvements in the ability to catch and store the available moisture, sweet clover should work well in a rotation in the drier soil zones."

Davidson Area Holds Fallow Contest

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

Last summer, 24 farmers from the Davidson area had a friendly summerfallow competition. The idea of the contest was to see who could conserve the most residue and control weeds for the least cost. Stuart Dougan of the Davidson Soil Conservation Co-op and Gerald Kenny of the Drifters Soil Conservation Co-op organized the contest.

Residue counts were taken April 25 and September 1, 1992. Scores were calculated by doubling the cost of fallow operations (to emphasize economics) and adding this to the percent residue loss. As in golf, the lower the score, the better! The winners were:

1st - Morris (Bud) Calloway - 23 points ($11.00/acre + 1% loss)

2nd - Ken Smith - 40 points ($14.00/acre + 12% loss)

3rd - Ray Heinrich - 46 points ($15.50/acre + 15% loss)

The cost of operations were standardized:

- sprayer + tractor:	$2.00/acre
- tillage (cultivator or wide blade):	$3.50/acre
- harrow:	$2.00/acre
- 2,4-D:	$1.50/acre + sprayer
- 2,4-D + Banvel:	$2.50/acre + sprayer
- Roundup (1 l/acre):	$10.00/acre + sprayer
- Rustler:	$5.50/acre + sprayer
- Heritage:	$5.00/acre + tillage

The awards were presented at a banquet held on January 22, 1993. A weed identification quiz was also held at this time. Ross Barlow was the winner of a 10 L jug of Rustler, donated by Greg Tittamore of Monsanto.

The clubs plan to hold the contest again in 1993, but will be lengthening the time that fields must be managed in a conservation friendly manner.

Stuart Dougan and Gerald Kenny measure residue.

Sustainable Ag"NO"culture?

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

Will our culture survive if we lose the ability to feed ourselves? Our soils are degrading and wheat can be imported for less than our cost of production. Simple economics tells us that we should import the cheaper product and redirect our resources. But what about the other costs? - Rural depopulation, bankruptcies, alcoholism, emotional stress, and the list goes on.

In this era of global trade it may be possible for some non-agricultural economies to create enough of a surplus to import all food requirements. But, there are no new frontiers, and somewhere in this world the agricultural production system must be sustainable.

Humans have had a short, yet dramatic influence on the earth's veneer of soil that sustains life. Land based life began 350 million years ago, but humans have inhabited the earth for only one million years. Our survival initially depended on coexistence with natural cycles (i.e. eat or be eaten!). Men and women began to "master the environment" about six thousand years ago. As farmers were able to produce surpluses and feed more than themselves, diversified civilizations developed.

Tom Dale and Vernon Gill Carter, the authors of Topsoil and Civilization state that there has never been a progressive civilization in one locality for more than 30 to 70 generations (800 to 2,000 years), with three exceptions; the Nile Valley, Mesopotamia and the Indus Valley. What do these areas have in common? All have fertile soil, dependable irrigation, and little erosion. Dale and Carter felt that **agriculture determined the sustainability of a progressive civilization!** In contrast, the Canadian Prairies are experiencing soil degradation after only three or four generations of farming!

Sustainable agriculture has been used to describe many systems. What does it really mean? There are many definitions, but all have three common principles:
1) sustainable plant and animal productivity
2) sustainable environmental quality and ecological soundness
3) sustainable socioeconomic viability.

Instead of considering only specific components such as weeds and nitrogen, we must manage the system as a whole. This means understanding the energy, nutrient and water cycles. A good example of a lack of understanding of the system is the preseeding tillage of soils prone to cracking and crusting. Why do they crust? Generally because of a lack of soil fibre and organic matter. The tillage temporarily reduces crusting, but in the long term it reduces organic matter levels which leads to more serious crusting: a vicious downward spiral!

What is our current system?

1) We are heavily dependent on non-renewable energy. Costs of inputs are increasing, while the value of the products is not. In order to maintain the same standard of living, producers are farming more acres or finding a secondary source of income.
2) Short season annual crops and fallow are most common. They make poor use of the energy, nutrient and water cycles.
3) Soil quality is deteriorating. Organic matter levels have decreased by 50% in less than one hundred years. Our average annual soil loss equals the thickness of a dime.
4) The prairie ecosystem is experiencing a loss of biodiversity, wildlife and habitat.

How do we become more sustainable?

The first step is to reduce our reliance on fossil fuel products such as petroleum, fertilizer and pesticides. In a long term crop rotation study at the Swift Current research station, fertilizers and fuel made up 66 to 80% of the energy used. The use of direct seeding, legumes and conservation fallow was able to reduce fossil fuel dependence. Direct seeding can reduce total energy consumption by 15 to 20 %. Nitrogen fixing legume crops can result in an energy saving of 10%. Substituting herbicides for tillage in fallow years can reduce energy use by 10%. (For more details on saving energy see Blair McClinton's article in The Prairie Steward, Fall/Winter Issue #8, page 4.)

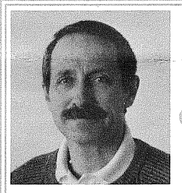
Second, we must increase the diversity of our cropping systems. Crop rotations of grasses (wheat, barley, etc.) and broadleaves (canola, peas, etc.) reduce the incidence of pests, diseases and weeds. Although little is known about polycropping (growing more than one crop at once), it has the potential to increase the diversity of a system. The air we breath is 78% nitrogen, and legumes such as peas, lentils, alfalfa and clover are the only plants that can utilize this nitrogen. Perennial crops are more efficient producers of biomass than annual cropping systems, especially those that include summerfallow.

Third, soil degradation must be eliminated. Practices such as direct seeding and conservation fallow not only reduce total energy use, but also leave more residue to protect the soil and reduce evaporation. Forages are useful in managing the water cycle to reduce salinity. Snow trapping and systems of field shelterbelts are effective in increasing water use efficiency.

Fourth, agriculture must be prepared to coexist with the natural ecosystem. This means preserving habitat for wildlife. A system lacking in biodiversity may be at higher risk of catastrophic events such as outbreaks of diseases and pests.

Unfortunately, there are many hurdles on the track to a more sustainable system. Short term economic pressures are foremost at the present. Society must send the proper signals to producers, with respect to their expectations for agriculture. Research into practices to improve sustainability, such as alternate crops and cropping systems, are important in the drive towards sustainability.

The most important factor in the move towards a more sustainable system is attitude. Many producers are now seeking out better methods, such as direct seeding and conservation fallow. Sustainable agriculture is not one specific system. It must be dynamic and integrated with the natural ecosystem. It must be able to stand the test of time.



The Future And How Soil Conservation Will Be Affected

By Bob Linnell
SSCA S.E. Regional Soil Conservationist

I attended a presentation by Professor Dr. Lowell Catlett of the New Mexico State University. Many of his ideas are found throughout my article.

Currently, knowledge is doubling every 19 months in the world. By the turn of the century it will double every 11 months. Soil conservation cannot move that fast, but the information can. Therefore, it is important to be able to access and transmit information.

This information will allow the farm producer to monitor inventory, plan, and implement his own course of action, based on the agronomics and economics of the time. Governments cannot totally support soil or water conservation. They can only stimulate it and manage the players to help ensure that a healthy trend is maintained. Food will always be important.

The thousand or so privatized, hi-tech information brokers that currently exist can, for a fee, access computers to provide you with answers to your questions in three to thirty minutes. In the future, you will be able to do that for yourself. The advent of technology and serpentine wires will allow you to have the power of 10 super computers in a package on your wrist. The future is not money. Time will be the currency with speed as its base. Soil conservation will be assisted not simply by the keyboard access of computer information, but by the voice instructed Lotus 1-2-3 or Word Perfect program.

Get used to terms such as virtual reality, interactive, pixes, nano-robotics, smart/dumb chips, anti-sensing genes, gene harvesting, super bugs. These will all play a role in changing science, education, physics, medicine and agriculture. The technology for all of these is here now and the application of them will follow quickly. The recently developed 3 million byte chip will see that it happens.

Locally, a global positioning system which allows pin point accuracy in the field will be affordable for farmers. This application of satellite based technology could have substantial effects on the future of the farm, and the conservation practiced on it. A device has been developed by University of Regina Engineering Professor, Dr. Ron Palmer, that improves parallel line operations in the field. By keying in the width of the implement in a lap top or palm top computer, the equipment operator is shown whether to steer right, left or maintain his course to achieve perfect machine width. This eliminates overlap and misses, greatly increasing efficiency when applying herbicides, fertilizers and other crop production inputs. Once perfected, plants will be precisely placed in straight and parallel rows and then will be supplemented with equally precisely placed fertilizer. The next step is the elimination of herbicides by the alternate use of high pressure water guns to kill improperly positioned plants (weeds).

Technology will provide farmers of the future with a total conservation system. Labour will be conserved as person hours will be reduced by driverless robotic tractors. The technology is being used in various industries and is proving to be not only practical, but cost effective as well. Direct seeding is firmly entrenched in prairie agriculture and the benefits are many. Reduced wear and tear on machinery, lower input costs for fuel, increased yields and soil conservation are just some of these benefits.

The agronomics and mechanics are nearly in place to facilitate the next great technological advancement for agriculture. Soil conservation information is in place and while it may not be as hi-tech as other components of this new system, it is the key element to the conservation system of the future.

However, there is still one input that we have not commanded total control over ... Mother Nature. Once we have her cooperation, then we can put this new conservation system to work.

SOS: Strong in the Southwest

By Pat Flaten
SSCA S.W. Regional Soil Conservationist

Despite the March deadline, the Save Our Soils (SOS) extension program is as strong as ever in the Southwest Region. It would be easy to just let the program momentum fall away as one approaches the deadline, but to the credit of regional District personnel, there's just no time to waste!

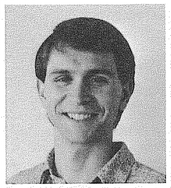
Workshops are still being offered on direct seeding, shelterbelts, forages and on-farm conservation planning, right up to March 31.

Recently, the district and regional SOS leadership met to discuss the program's highlights and future. Unfortunately, the future is uncertain due to lack of funds in the public coffers. However, all agreed that soil conservation efforts are gaining, not losing, momentum. The evidence is seen in the field as well as in the numbers we're seeing at workshops.

Some of the **SOS highlights** over the last 3 years are:

- Tremendous interest in **direct seeding** potential, for both financial and conservation reasons.
- Many producers took advantage of opportunities to try out some different **equipment** such as wide blade cultivators, annual barrier strip seeders and direct seeding implements.
- **Forages** are now producing returns on fragile lands which used to be seeded, often unsuccessfully, to annual crops. SOS' sister, the Permanent Cover Program has encouraged another 230,000 acres to be seeded to forages in this region through PFRA.
- Many producers have been encouraged to re-arrange fields to a **strip cropping** pattern, reshape and **grass gullies**, and try a host of **minimum till** practices.
- Others with saline patches have received customized recommendations to control the problem through the **Salinity Investigation Program** of the Wheatland Conservation Area.

So, how is the Southwest going to carry on this momentum? Many local clubs, associations and ADD Boards are already preparing priority lists of what they want to accomplish. With or without a continuation of some form of SOS, we will see producers continue to push for positive changes in land management.



Shelterbelts: More Than Just Windbreaks

By Chris Zabek
SSCA Shelterbelt Information Officer

In my work with the SSCA I have had the pleasure of talking with many farmers. It's always interesting to compare notes with others and see how different people approach problems in different ways. In some of these conversations, however, I have been left with mixed feelings.

During the course of several discussions I, naturally enough, brought up the subject of shelterbelts. To my dismay, I have heard more than a few farmers make a statement such as, "I don't need shelterbelts. I continuous crop and the residue cover keeps my soil from blowing." I realize that every producer has his or her own unique operation and conditions but I do have some problems with such a quick dismissal of a valuable conservation tool.

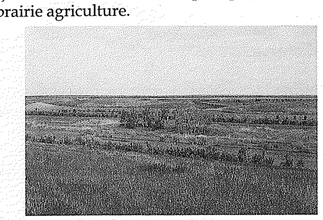
To begin with, shelterbelts have other well-documented benefits besides protecting the soil from erosion. By creating a more favourable microclimate, they can significantly increase the yield of field crops, even when one takes into account the land taken out of production by the trees. This yield increase, although well documented, seems to be unknown to many people.

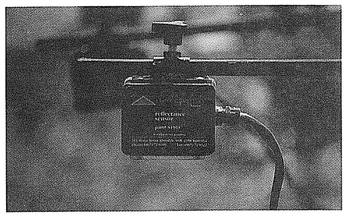
Shelterbelts also have other effects which may be less tangible but are no less important. One of the best things about shelterbelts is that they are valuable to many different types of conservation, with conservation being the key word. Most farmers I know love country life. They take justifiable pride in the fact that they are living close to the land and all the life that comes from it. I share these feelings. There is more to conservation and land stewardship, however, than growing wheat.

Our practice of agriculture has transformed the Canadian prairies into one of the most altered landscapes in the world. These vast areas used to be covered by hundreds of different native plant species. Now, a handful of introduced crops dominate. In our ongoing quest for speed, efficiency and production we have often sought to farm every square foot of land that we could clear or drain. Is this really progress?

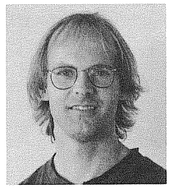
It's becoming more and more evident that "natural" areas of vegetation and wetlands are more valuable than they might first appear. They can provide wildlife habitat and aesthetic pleasure while still producing an economic return for the landowner. We can preserve these areas and augment them through the use of carefully planned shelterbelts and block plantings. The trees can provide some much-needed diversity in the landscape. This is also beneficial to the public image of agriculture.

Shelterbelts, then, provide much more than protection for the soil, however important that protection might be. They are part of a bigger picture, of which soils, crops, wildlife and the landowner are all components. They can, in conjunction with other techniques, play a vital role in prairie agriculture.





Detectspray sensor



Detectspray Complements Move to Conservation Farming System

By James Lokken
SSCA Soil Conservation Specialist

When Keith Tysdal heard last year about the Australian sprayer technology, Detectspray, the idea of better control over herbicide application and costs intrigued him. Within a few months, he had purchased forty feet of Detectspray from Concord Inc. of Fargo, North Dakota and found that it reduced his chemfallow herbicide use by fifty per cent.

The Detectspray system uses special sensors mounted on a sprayer to compare the light reflected from green versus nongreen surfaces. Green growth triggers a "spray" instruction from sensors to nozzles, allowing selective spraying of fallow fields. The amount of herbicide applied per acre can be dramatically reduced. (See "Sensing the Future - Detectspray Technology", Prairie Steward, Summer #7 1992, p. 10.)

Tysdal, an SSCA member, farms in the Briercrest area southeast of Moose Jaw. Next year he will be farming alone because his father is retiring. He says "Because I'll be working alone, I've been searching for ways to reduce labour and increase the efficiency of operations. Detectspray seemed to be the sort of technology for which I was looking."

Tysdal has combined his search for efficiency with a concern about soil erosion. In the last several years, he has moved toward more chemfallow, fewer fallow acres and low disturbance direct seeding. Last year, he sold his main cultivator and rodweeder and purchased a new sprayer and the Detectspray system. One benefit has been a large reduction in tractor hours.

Since herbicide use is an integral part of his evolving system, Tysdal wants to refine the spraying operation so it is more selective, efficient, effective and safe. He notes "Spraying saves a lot of time over cultivating. Detectspray has the added advantages of reducing herbicide use and cost per acre by spraying only what you want to spray. More acres can be protected from erosion without big increases in chemical use."

Tysdal mounted the Detectspray components and a second boom on a tractor-pulled Ag Shield hooded sprayer. With the original sprayer boom, he can spray continuously while "Detectspraying" with the second boom.

The two boom system proved useful last year. The Detectspray arrived late in June when the chemfallow was well past optimum spraying time. Poor timing and the technical limitations of the system meant there were some "misses" the first time over the fallow with only the Detectspray boom operating. (For example, the shade of green of small Kochia plants seemed to be missed by the sensors.) Even so, Tysdal says "It was amazing to see the monitor lights in the tractor cab rapidly flashing as nozzles were triggered to spray where no weeds could be seen from the tractor."

Using the dual boom system during the second spraying improved weed control. One boom continuously sprayed .2 litres per acre of Rustler. The Detectspray boom sprayed the other 80% of the 1 litre/acre rate when the sensors detected weeds.

In the future, Tysdal thinks he will probably only have to use the two boom system in a preseeding burnoff where the weeds are often very small. Several improvements have been made over the last year which should improve the Detectspray's performance. Concord is replacing Tysdal's Detectspray with the new model and three year warranty by April 15. New sealed sensors should eliminate the potential for moisture problems. The monitoring unit, wiring and computer control have also been redesigned.

Concord, under license from the Australian owners, is manufacturing Detectspray for the North American market. Tysdal says that Concord is working hard to improve Detectspray in response to farmers' needs and the demands of the environment in North America.

Tysdal paid about $19,500 (U.S.) for forty feet of Detectspray. He believes the expense will be justified by the savings on herbicides on his own acres. He does have a custom applicator's license and hopes to do a limited amount of spraying for others, but really purchased the machine for its value to his own operation.

The annual ownership costs are difficult to calculate because Tysdal does not know how long the machine might last. He believes the Detectspray is a durable machine, although it still has some "bugs" to be worked out. There are not many sophisticated parts and the solenoids and sensors can be replaced independently. Given the three year warranty, he feels that spreading ownership costs over at least five to seven years is reasonable. This means fixed costs are about $5000 per year.

Last year, Tysdal used about 50% of the usual amount of herbicide in the Detectspray operations. He hopes that with experience and improvements to the machine he will save even more. Even so, the savings were significant. In 1992, he only sprayed 600 acres of fallow twice or 1200 acres:

1200 acres x $3/acre (.5 L Rustler saved/acre at $6/L) = $3600 in herbicide savings

Tysdal may, in future, use a preseeding burnoff on anywhere from 600 to 1600 acres. Using Detectspray, his savings on that operation could run from $1500 - $4000 (.25 L Roundup saved/acre at $10/L). The Detectspray can also be used for fall or spring control of winter annuals with savings of $.75 to $1.00/acre.

Tysdal's savings are somewhat offset because he shortens his sprayer from eighty feet to forty feet for Detectspray operations, increasing the time it takes to spray. However, the reduced volume of spray means less time is spent hauling water and refilling the sprayer.

Detectspray is a good example of the type of technology which farmers need - technology which offers them immediate economic advantages and assists them to develop conservation farming systems which are sustainable. By adopting this technology in its infancy, Keith Tysdal may have experienced some costs and headaches that others who adopt the technology later may not experience, but he is also gaining the immediate benefits it has to offer.

Conservation Farmer Award Recipient

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

Described as an innovator by one of his nominators, Bernie Niedzwiedz of Wynyard is a deserving recipient of the SSCA's Annual Conservation Farmer Award.

Niedzwiedz's move into soil conservation was sparked by a heavy rainstorm in 1977. While the fields under crop were relatively undamaged by the rush of water, those in summerfallow suffered washouts and gullies. In the spring of 1978, he began to stubble crop. By 1983, the entire farm was continuously cropped as he could see the practice was both economically viable and beneficial to the soil.

When Niedzwiedz first moved into continuous cropping, he was using a hoe press drill. In 1980, he switched to discers. As the ground became more mellow, the discers could no longer properly cut through the residue. The next seeding implement he tried was a Haybuster 7000 drill. Seeding is now done with an air seeder.

Like most people trying new methods of doing things on their farms, Niedzwiedz had neighbours who were watching him closely. While they were curious about what he was doing, Niedzwiedz says the neighbours didn't really believe that continuous cropping in their district could work. He says over the last few years, however, many of the neighbours have now also extended their rotations by at least one stubble crop year.

Today Niedzwiedz's continuous cropping system is undertaken with minimal tillage. If he uses a pre-emergent herbicide, he will make one pass in the fall to incorporate the chemical. He may deep band and then seed directly into the stubble. He uses 2,4-D in the fall to control winter annuals and in the spring, he uses a pre-seeding burn-off.

Since beginning to continuous crop under minimum till, soil conditions have improved on the Niedzwiedz farm. Water soaks into the ground, it no longer puddles on the surface. Machinery wear and tear has decreased. When he was in a 50-50 rotation, his tractor was eight years old and had logged 4000 hours. The tractor he uses now is 10 years old but has only 2600 hours on it.

The weed spectrum in his fields has changed over the years from common annual weeds to more perennial weeds - especially quack grass. Niedzwiedz feels that it's much easier to keep the weeds under control now that glyphosate prices have dropped. He recalls spending $30/acre on Roundup. Today he is able to get the same control with Roundup spending only $5.50 an acre.

Soil tests are conducted annually and Niedzwiedz notes that his fertilizer inputs have not changed over the last several years. The soil test recommendations are about the same as they were when he used a shorter rotation.

Niedzwiedz remembers when **"Farm Light and Power"** wrote an article about him. The article referred to conservation farming as "unique." He says he feels fortunate to have been involved in the East Central Soil Conservation Project since 1982. He felt he was right in the middle of the research. The coordinator of the project instilled a lot of confidence in the Wynyard area farmer by telling him often "You're on the right track."

Niedzwiedz's involvement in the community includes membership in the Wynyard Maximum Economic Yield (MEY) Club, and his R.M's ADD Committee. He has a general interest in conservation farming. Bernie is also an instructor with the Agriculture Insitutute of Management in Saskatchewan (AIMS), enabling him to travel all over East Central and South East Saskatchewan presenting farm management information.

Bernie's family includes his wife, Bev and their son, Nathan. The farm is located southwest of Wynyard.

The SSCA is pleased to recognize Bernie Niedzwiedz for his contributions to the soil conservation effort.

Colleen Munro, Farm Managment Editor of the Western Producer hands awards to Mr. Niedzwiedz as John Hebblethwaite, Director Conservation Tillage Systems for Monsanto looks on.

Foam Lake and District Growers' Marketing Club winners of the Conservation Group Award.

Conservation Group Award

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

At the recent SSCA annual meeting, the Foam Lake and District Growers' Marketing Club was named as the recipient of the Conservation Group Award. I had the opportunity to interview 9 of the 15 members in the club, discussing with them the club's success and its involvement in soil conservation.

Q: When was the club first formed and why was it formed?

A: The first minutes are dated October 21, 1987. We wanted to improve our marketing skills. The local Elephant Brand dealership was instrumental in bringing together the members. There were about 12 of us in the club when it first began.

Q: What sorts of activities has the club been involved in?

A: We organized a tour to Winnipeg and have organized a number of summer tours that are open to the public. We also visit each other's farms to see what everyone is up to. In March 1991, we leased a ConservaPak and over the last 2 years, 3360 acres have been seeded with the ConservaPak. Of those, over 600 acres were custom seeded for non-members.

Q: What got your club interested in soil conservation?

A: Our meetings centre around marketing but our discussions turn to production. We had been hearing about zero tillage and that it helped to lower a producer's bottom line which in turn, leads to better marketing. Then, in 1988 when it was so dry, we knew we had to do something to conserve the snow cover.

Q: So, how did you get started?

A: In the fall of 1989, we had a zero till meeting where Jim Halford, Guy Lafond and Lucien LePage were some of the speakers. We got the ConservaPak in 1991.

Q: Why did the club decide to lease a seeding implement?

A: Undertaking new practices can be pretty risky. No one could afford to buy a machine on his own so we decided to co-operate in a lease. That way, if the practice failed, we would all bear the brunt — not just one person.

Q: What are the advantages to direct seeding in your area?

A: The acres seeded by the ConservaPak are less prone to wind and water erosion, nesting habitat is improved and the net returns are generally higher.

Q: You told me you all learned from each others' mistakes. Farmers are considered to be very proud. I thought they didn't like to tell anyone when something has gone wrong?

A: Not sharing with your neighbour is a thing of the past. We make money just by sharing each others' thoughts.

Q: What else about your club makes it so successful?

A: There are a number of things. We all come from different backgrounds with different attitudes and sharing our ideas has benefitted us all. About once a month, we bring in speakers addressing a variety of topics. We've also been involved in a number of projects — we've worked with PAMI in evaluating rotary harrows; in 1992 we leased some land and donated it to the Canola Production Centre to direct seed canola with 5 different machines; we often co-operate with industry, such as herbicide companies, to test new products, and a number of our members are involved in designing their own equipment modifications. We've explored the possibilities of doing some bulk buying. And of course, everyone has a good sense of humour!

Q: How do you fund your club's activities?

A: Because we're a marketing club, we play the markets. We also charge a membership fee of $50 per year.

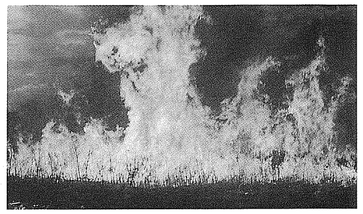
Q: One of the prizes you received with the Conservation Group Award is a $1000 cheque from Monsanto. Have you made any plans for those dollars?

A: Yes, we are going to try to have a biodiesel (fuel made with canola oil) pilot plant set up in the Foam Lake area. It's ironic that the Europeans are buying our low grade canola, importing it for biodiesel production and then marketing their good quality canola to Japan. We Canadians should be doing that ourselves.

The SSCA congratulates the Foam Lake and District Growers' Marketing Club on being chosen as the recipient of the Conservation Group Award. It wishes the club well in its future endeavours.

Burning - A Valuable Tool In Land Management?

By Brant Kirychuk
Rangeland Agrologist, Crown Lands, Canora



A prescribed burn in a pasture area.

Is there a use for fire on the Canadian prairies? There is great potential for the use of fire in the management of rangelands, especially those located in the parkland area. Fire can help to maintain or improve current forage productivity by controlling woody plant species (mainly aspen, balsam poplar, rose and western snowberry) that readily establish on rangeland in this area.

Why is fire a method being considered to control woody plant species? The climate of the parkland is ideally suited for the growth of many woody plant species. If these species are not kept in check, the aspen parkland has the potential to become tree covered. If we look back in history, fire was a common occurrence on the prairies before settlement of this area by Europeans. The parkland area of the prairies was predominantly a grassland with scattered aspen groves in low lying areas. The combination of the regular occurrence of the prairie fire and the harmful effect bison had on aspen suckers and aspen groves, prevented trees from expanding in this part of the prairies. When fire and bison were eliminated from the prairies, the trees and shrubs were allowed to expand unchecked and soon areas of the parkland region turned into forest. Burning on rangelands today is just the reintroduction of something that naturally occurred on the prairies.

A second use of fire is to remove excess litter and 'wolf' plants. There are times when a forage stand is under grazed or grazed at the wrong time of the year, resulting in a buildup of litter and/or mature plants. An excess of litter can reduce the productivity of a stand by shading the soil and keeping soil temperatures below the optimum temperature for plant growth. An accumulation of litter also can inhibit light from reaching young tillers. Removing mature plants that are high in fibre and contain low levels of protein and phosphorous, improves the nutrition and palatability of the forage stand. The young plants that revegetate the area following a fire are of much higher forage quality and are more palatable to most grazers because they are lower in structural components.

Prescribed burning should be done when the species you want to maintain in the stand, mainly grasses and forbs, are dormant. Burning should be done either in the spring prior to the greening up of the grasses and forbs, or in the fall once the plants have gone dormant. Spring is the suggested time to burn for several reasons. First, spring has superior soil moisture conditions, which will prevent ground fires. Second, burning in the fall removes all standing material, which is required to trap snow and protect the soil from erosion over winter. Third, spring has more reliable weather conditions, but even then there are very few days when weather conditions meet the requirements to carry a fire through trees or shrubs, while maintaining an adequate level of safety.

Climatic conditions are the most important factors influencing the success of a prescribed burn. Temperature, wind, and humidity are the key weather considerations when conducting a prescribed burn. As the density of woody plant species increases, higher temperatures, wind and lower humidity are required for a fire to cover an area completely. As the conditions become better for burning the danger of fire escape from the burn area also increases. Safety and quality burning conditions must both be considered when planning a burn.

There are a few drawbacks to prescribed burning. The greatest concern is the danger of the fire escaping the burn area. If proper safety precautions are not taken, the results of a fire escape can be devastating.

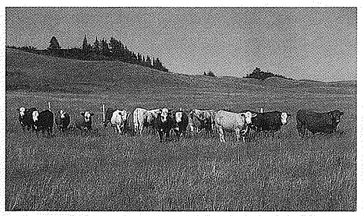
The year of the burn will likely result in a reduction in forage production from grasses. Prescribed burning is not recommended in years when moisture conditions leading up to the burn have been low. Moisture conditions will dictate the effect on forage productivity. Therefore, prescribed burning is generally not recommended on the mixed prairie of southern Saskatchewan.

It is important to recognize that successfully burning the woody plants off an area of rangeland will not permanently solve the brush problems. The majority of the trees and shrubs in the aspen parkland have adapted to survive fire by suckering. The control of these plant species requires a management plan that includes fire with a planned grazing system. The planned grazing system uses high stocking densities to control the suckers. Studies at the University of Alberta suggest that two rotations with high numbers of animals, in approximately mid June and mid to late August, significantly reduce the number of suckers. In following years, a system should be in place to both control the suckers and maintain forage productivity. If reburning is required, the interval between fires should be 5 - 10 years.

In order to conduct a burn, planning must begin at least a year in advance. The grazing rotation must be adjusted so that a continuous cover of fine fuel (forbs and grasses) is present to carry a high intensity fire completely over the area. This will require resting the field to be burned from grazing for a portion of the grazing season. A crew and equipment must be in place for the day of the burn, and fireguards will need to be prepared before conducting the burn. It is very important to have adequate fire suppression equipment to fight any escapes and to keep the fire under control in the burn area.

The person in charge of the burning operation must be experienced in conducting prescribed burns. Experience is essential to achieve a quality burn while not losing control of the fire. Prescribed burning is not simply going out and randomly igniting an area and allowing it to burn.

Prescribed burning, when conducted properly, will serve to enhance the productivity of the forage stand and reduce woody plant species cover. There is a use for fire in certain areas of land management on the Canadian prairies.



Cattle in the '90s

By Chris Zabek
SSCA Soil Conservation Specialist

It would seem that we have a great villain in our midst. Everything from global warming to tropical deforestation to cardiovascular disease has been blamed on him (or her)(or it). Able to hide behind a simple, innocent face, this common danger can be found in a variety of places (maybe even near you!). Who is this terror, you ask? Why, the common cow, of course.

Yes, poor old Bossy has had to swallow a lot of accusations and insults. Some of the concerns raised about the livestock industry are quite valid but others are the result of, at best, misinformation.

The greenhouse effect seems to be a popular catchword right now. It has been suggested that the methane produced by cattle is a major contributor to this global warming. Yes, cattle do produce methane, as do all ruminant animals. All the beef cattle in the world, however, contribute less than one percent of the atmospheric greenhouse gases. One might also remember that millions of bison and other wild ruminants did much the same thing before man began animal agriculture.

Different groups have also appealed to us to reduce beef consumption in an attempt to save the rain forests. While saving the rain forests (and, indeed, any native system) is a goal which I completely support, cutting back on the amount of beef which I eat will not accomplish this. Canada imports less than 2.3 percent of its beef from South America and all of this comes in a canned form.

Some people have attacked the livestock industry on a production level. They have stated that cattle production is inefficient because it competes for land that could be used to grow a crop for human consumption. One only has to take a drive through the agricultural portion of Saskatchewan to see that there is a lot of land which is not suited for crop production but will support livestock. In fact, there is a lot of fragile land currently under cultivation that would be much better off under a permanent cover of forages. We cannot eat these forages but cattle can.

The question of wildlife habitat and cattle is a serious concern in many areas. Various individuals and groups have used examples of overgrazing and the resultant wildlife habitat deterioration as fuel for removing livestock from public lands. It is true that overgrazing is a serious problem which has degraded much rangeland. It can be avoided, however, through proper planning and management. It is important to incorporate a multi-use viewpoint that takes into account the entire range resource and all of its connected factors.

Animal care is another area that has been receiving more and more attention. Individuals and groups are taking a more active interest in the way animal agriculture is practiced. First of all, it is necessary to look at the different types of organizations. Animal welfare groups believe that humankind has a responsibility to avoid subjecting animals to unnecessary pain or suffering and excessively crowded confinement. This belief is shared by most animal producers. Animal welfarists have exerted influence over the livestock industry in the adoption of more humane practices.

Many animal rights groups, on the other hand, are opposed to any confinement and slaughter of animals. Consumption of animals, medical research and the fur trade have all been targets for various animal rights groups. Any arguments in support of these industries often fall on deaf ears, regardless of how well prepared these arguments might be. In the past, producers have often not taken animal rights groups seriously. This is a mistake. These groups are well funded and comprised of individuals who are extremely dedicated to achieving their goals. Some of these groups have committed acts of vandalism, sabotage and terrorism in an attempt to realize these goals.

The best way to deal with attacks on animal agriculture is through education. The Canadian Cattlemen's Association has prepared a **Just Facts** package to provide some information about the beef cattle industry and environmental issues. This information can be supported by reference materials and experts in the field. Materials such as this are valuable tools in combatting some of the misconceptions that are present in society.

As a producer, don't be afraid to deal with these issues. Be willing to support your industry with a calm presentation of the facts. Most importantly, make your own operation a showcase of proper techniques. Provide humane treatment for your animals. Practice good grazing management. Respect wildlife as a valued component of the rangeland. Good management is needed to support your industry from production, environmental and political points of view.

Education Program At SSCA Conference A Success

By Yvette Crane
SSCA Soil Conservation Educator

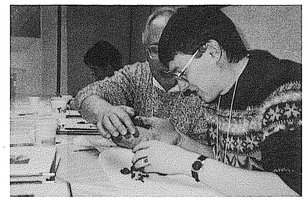
19th century explorers John Macoun and Captain John Palliser "came to life" during the **Student Environmental Challenge** at SSCA's Annual Meeting and Conference in Moose Jaw.

With their dramatization of an imaginary debate between the two men, Medstead Central School narrowly edged out Viscount Central, Ridgedale High, Bengough and Pangman Schools to take first place for their research and presentation on this year's "Challenge" question: "Palliser or Macoun: Who was Right?"

Many conference participants took the opportunity to visit the students' impressive displays, and a crowd of about 35 attended the Monday afternoon presentations. The judges were impressed with the students' research skills and poise in presenting on such a complex question. Many thanks to all the sponsors, the judges, and especially to the five schools for their hard work.

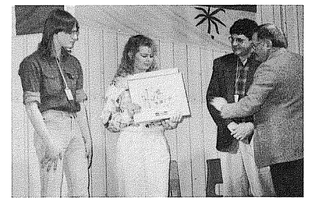
On Tuesday morning, twenty six teachers got right "into the dirt" during the **Project Soils** Activity Guide launch. They took on the roles of microorganisms, soil particles, plant roots and cows; learned about soil degradation and soil conservation techniques; and debated such wide ranging issues as subsidies and urban sprawl.

Thanks to all the teachers for their participation, and for being such good sports!



Moose Jaw teachers try hand texturing some soil at the *Project Soils* teacher workshop.

Attentive teachers follow SSCA co-presenters Yvette Crane and Chris Zabek's presentations closely.

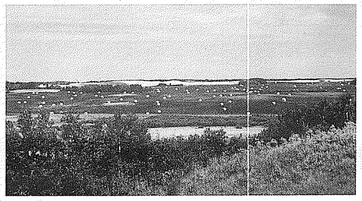


The Medstead Central School team accepts their award from SSCA President Dave Bueckert.

Slide Contest Winners

Thank you to everyone who took the time to enter the contest. Our judge, Lorne McClinton, certainly had his work cut out for him. Thanks Lorne!

Soil Conservation Category



1st Tom McDougall, Lebret

2nd Bob Middleton, Saskatoon
3rd Evan Simpson, Theodore

Soil Degradation Category

1st Larry Gramiak, Saskatoon

2nd Ken Alport, Kyle
3rd Sandra Lowndes, Kelvington

Widelife Habitat Category

1st Bruce Elke, Janzen

2nd Ed Tanner, Indian Head
3rd Carter Bateman, Wolseley

SSCA Signs Agreement to Sponsor Conservation Demo Farm

By Adrian Johnston
Farming Systems Research, Agriculture Canada, Melfort

On February 9th, SSCA President Gerry Willerth signed an agreement with the Parkland Agriculture Research Initiative (PARI) program of Agriculture Canada to sponsor the development of a Conservation Technology Demonstration Farm in Saskatchewan. The Demo Farm project has been in the developmental stage since late October, under the direction of Marv Fenrich, N.W. director of SSCA. Representatives from Agriculture Canada Research Station, in Melfort, approached SSCA to act as the sponsoring agency for the project, a proposal which received support from the SSCA Board of Directors.

The PARI program is a federally sponsored Green Plan initiative managed by Agriculture Canada Research Branch. The program, developed to demonstrate soil and water conservation technology in the Parkland region of the prairies, has three components:

1) Research and refinement of sustainable management systems
2) Soil resource monitoring and evaluation
3) Landscape farming research and technology transfer.

It is under this third component that resources were allocated for the development of a Conservation Demonstration Farm in the Parkland region of the three prairie provinces. Funding has been put in place for the period 1993 through to March, 1997.

The goal of the program is to provide resources to facilitate cooperative participation of all agencies involved in agricultural resource conservation. The Farm site will become a focal point in north-central Saskatchewan for the demonstration of new and innovative conservation management research and technology.

To quote the Saskatchewan proposal that won support from Agriculture Canada, the Demo Farm *"will enhance the goal of increasing awareness amongst producers and the general public of the potential for conservation farm planning in NE Saskatchewan. The development of a showcase farm, combined with detailed research trial and whole farm evaluation, will provide an excellent site for both technology transfer and public awareness on the interaction of agriculture and the environment."*

Ducks Unlimited Canada (DU) became the first partner to make a significant contribution to the project. They secured a lease on three quarters of farm land south of Prince Albert. Leadership provided by Lee Moats and DU staff in the Melfort office has advanced the Demo Farm from a project on paper to a first class bona fide farm site! A commitment from PFRA to support the landscape and soil survey, as well as conservation planning for the farm, has also been received. An application to the Agricultural Development Fund for provincial support of the project was submitted on January 15th.

The Demo Farm will be managed by a steering committee made up of 50 % farmers and 50 % representatives of government, university and industry. The following farmers have been appointed to the steering committee by SSCA: Terry Pearse of Tisdale, Marv Fenrich of Wilkie, Stu Adams of Birch Hills, Ron Alton of Carrot River, George Lidster of White Fox, Ernest Holinaty of Porcupine Plain and Eric Pankratz of Foam Lake. The committee will be meeting in early March to chart the course for the operation and management of the project during the initial 1993 growing season.

Excitement and support to date from the Prince Albert ADD board and NE Extension Service staff has provided positive encouragement to Demo Farm organizers. For further information on the project contact either Marv Fenrich in Wilkie at (306) 843 2083 or Adrian Johnston at the Melfort Research Station (306) 752 2776. Watch the **Prairie Steward** for further developments on the SSCA sponsored Conservation Demo Farm.

Soil Smart - For Young Conservationists

Thanks to all who entered our second colouring contest in the last issue. It was a tricky one!

The winners read the instructions very carefully. All the letters for the different farming practices had to be in the right place . . . and . . . the fields had to be the right colours too!

One is bare summerfallow, one has residue on it, and the other has a crop on it.

All of these artists submitted beautiful colourings:

6 and under: Reece Bateman, Luke Booker, Courtney Dirk, Brogan Kiss, Elisha Loberg, Michelle Schultz, and Trish Steinley. **7 - 8 years:** Trevor Alstad, Stephanie Booker, Adrian Dirk, Jared Dirk, Colin Faye, Lindsay M. Ferguson, Cailey Henheffer, Chandra Steinley, Byron Travaland. **9 - 11 years:** Kyle Blake, Bryce Dirk, Jared Dirk, Jill Mastad, Alicia Steinley, Nicholas Schultz, Holly Steinley, Nicole Travland, and Travis Uteck. **12 and over:** Ivan R. Androsoff, Jeff Cheesmen, Leif Gavelin, Kari Hamilton, Tara Jones, Kyley Peterson, Cheryl McCrea and Jason Nogue.

First Place goes to: 6 and under: Luke Booker of Empress, Alberta, 6 years old; **7 - 8 years:** Byron Travaland of Coronach Saskatchewan, 8 years old; **9 - 11 years:** Holly Steinley of Empress Alberta, 10 years old; **12 and over:** Tara Jones of McCord, Saskatchewan, 12 years old.

CONGRATULATIONS TO ALL FOR A JOB WELL DONE!

Colouring Contest

Here's something a little different! A picture to colour all the way from **Australia!!!**
Write in at the bottom of the picture what you think the farmers are saying to each other.

Colouring Contest Rules:

1. Deadline: May 21, 1993

   Winners will be notified and an announcement will appear in the next edition of the Prairie Steward.

2. Send in your **name**, **age** and **address** with your entry.

3. Contest is open to all ages. A prize will be awarded in each of the following age categories:
   - 6 and under
   - 7 - 8 years
   - 9 - 11 years
   - 12 - 14 years

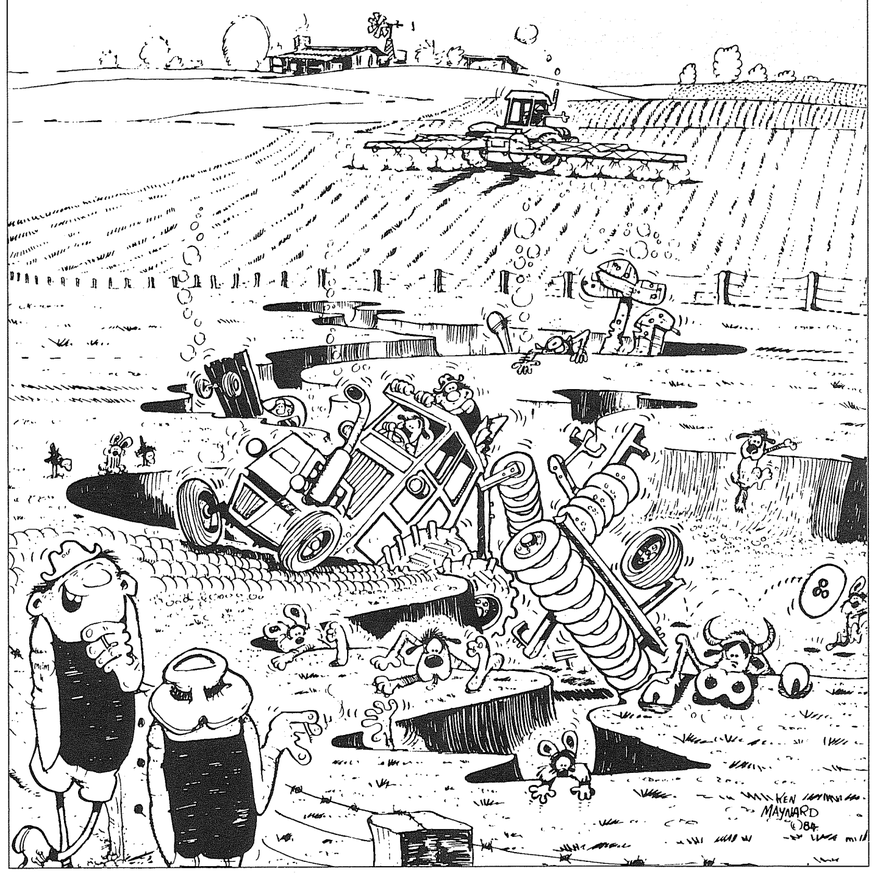
4. This page may be photocopied.

5. Send your entries to:
   Soil Smart
   SSCA
   Room 132
   3085 Albert Street
   Regina, Sask.
   S4S 0B1

Please check: (x)

___ I would like my colouring back.

___ You may keep my colouring.

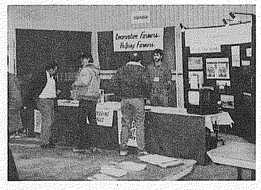


(Special thanks to **Warwick Felton**, Department of Agriculture, Tamworth, New South Wales, Australia and to artist **Ken Maynard** for supplying the picture!)

Conference Activities

Outgoing President Dave Bueckert hands the gavel to new President Gerry Willerth.

Outgoing President Dave Bueckert presents Past President Gary Schweitzer with a print for his involvement with the SSCA.



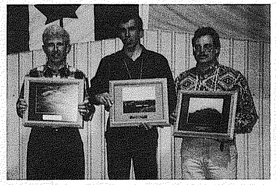
SSCA Soil Conservation Specialist, Chris Zabek answered many questions about the Conservation Farmers Helping Farmers program during the conference.

T.V. reporter Sheri Hargrave of "The Provincial" and SSCA President Gerry Willerth discuss the success of the conference.

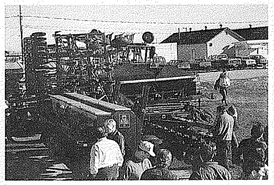
T.V. reporter Sheri Hargrave interviews SSCA Soil Conservation Educator, Yvette Crane, about the Enviro-Student Challenge.

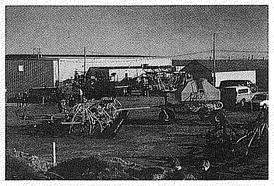
Conference coffee breaks sponsored by Harmon Industries Ltd. and Farm Credit Corporation allowed people the chance to mingle and attend the trade show.

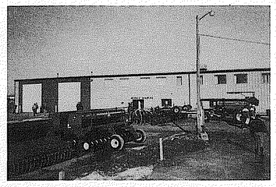
The evening "Bear Pit" sessions were well attended.



Slide Contest winners
(L to R) Larry Gramiak, Tom McDougall, Bruce Elke, with framed prints of their winning slides.







Spring-like weather on Monday, February 8th, encouraged conference delegates to visit the outdoor equipment display area.

How Long Can You Afford Not To Practice Soil Conservation?

FREE ADMISSION

CONCESSION ON SITE

Saskatchewan Soil Conservation Association

IN ASSOCIATION WITH THE

Western Canada Farm Progress Show
June 16-19, 1993

1993 Soil Conservation Field Day
June 15, 1993

(In event of rain June 18, 1993)

Municipal Airport, Moose Jaw, Saskatchewan
2 miles north of the Trans-Canada
on Highway #301

Special Thanks to

Monsanto

Flexi-coil — Setting the Standard

Morris — Tomorrow's Ideas For Today's Farmer

For their Commitment to Soil Conservation in Saskatchewan

A 200 acre site featuring demonstrations
of the latest technology and equipment operating in the field:

Direct Seeding - Fertilization - Crop/Weed Spraying -
Conservation Tillage - Harvest/Residue Spreading

Plus

80 Acres of Direct Seeded Plots
(Seeded during the First Week of May 1993)

Conservation Fallow at the site with NEW IMPROVED RUSTLER
by Monsanto

Soil Fertilization
by Westco
Western Co-operative Fertilizers Limited

In Cooperation with:
Mr. Gordon Noble, City of Moose Jaw, District #8 ADD Board,
Saskatchewan Agriculture Development Fund,
Saskatchewan Agriculture & Food and the Canada - Saskatchewan
Agreement on Soil Conservation

Directions:

Moose Jaw Airport
Demonstration Site
- Secondary Highway #301

To Moose Jaw — Trans-Canada Highway — To Regina

Conservation Farmers Helping Farmers

Does conservation farming look difficult? Why not talk to a farmer who has tackled the same situation that you are facing? The **Conservation Farmers Helping Farmers** directory houses the names of SSCA members who are willing to accept phone calls about their conservation farming practices and equipment.

Interested in the kind of equipment direct seeders are using in your soil zone? Concerned about quackgrass in your minimum tillage operation? Considering shelterbelts as part of your conservation plan? Get the facts from experienced farmers.

How does it work? Simply call the SSCA Regina office at **787-0558** and ask to use the **Conservation Farmers Helping Farmers** service. You will be able to specify the conservation techniques, equipment and practices you have questions about. The SSCA will then search the directory and provide the names and phone numbers of any members who have experience with the conservation methods or equipment in question.

Some examples of conservation information and experience included in the directory are:

- direct seeding
- conservation equipment
- conservation tillage
- barrier strips
- rotational grazing
- alternate crops
- weed control
- residue management
- chemfallow, shelterbelts
- forage establishment
- soil salinity management
- wildlife habitat enhancement
- and other conservation farming experience.

This is an ideal opportunity for farmers to take advantage of a large and diverse source of practical knowledge...other farmers!

Medicine Hat Area Direct Seeding Workshop

The **Southern Alberta Conservation Association (SACA)** is organizing a Direct Seeding Workshop entitled: "A Practical Approach for the Palliser Triangle". The event will be held at the Cypress Centre on the Exhibition Grounds in Medicine Hat, November 16 & 17, 1993.

Workshop speakers include: Garry Meier, Murray Green, Con Campbell, Terry Appleby, John Harapiak, Denise Maurice and Wayne Lindwall. A Trade Show is also planned in conjunction with the workshop to highlight equipment and technology related to Direct Seeding.

The SACA is an association of 15 local farmer conservation clubs.
For more information on the workshop contact:

Stan Dereniwski, Medicine Hat 403-529-3616
Brad Haas, Medicine Hat 403-838-3765

NOTICE

To those SSCA members who were unable to attend last year's meeting because of the sold out pre-registration, we apologize. If you are planning on attending this year's meeting, PLEASE PRE-REGISTER EARLY!

Request For Submissions

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. Pertinent photographs would be appreciated. Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert St.
Regina, Sask.
S4S 0B1

Direct Seeding: Designing A Sustainable Agricultural System

February 14 - 15, 1994 - Lloydminster Exhibition Grounds, Lloydminster, Saskatchewan

For complete conference details see page 9.

Workshop Pre-Resgistration Form: (Please Print)

Name_____Address_____

Postal Code_____

Telephone_____Fax_____

Are you an Farmer YES_____ NO_____ (check one)

Agency\Organization_____Occupation_____ _____

I am an SSCA Member
I would like to support the SSCA by becoming a member (3 year membership for $100)

Workshop Pre-Registration before February 1, 1994:
Single & Proceedings $60 Husband & Wife $90 **Total Amount Enclosed $ _____**

Note:
This form is for the conference pre-registration only. Registrants are responsible for making their own room reservation.

Please make cheques payable to **Saskatchewan Soil Conservation Association Inc.**

REGISTER EARLY AS LAST YEARS WORKSHOP WAS SOLD OUT IN ADVANCE!

MAIL TO: DIRECT SEEDING WORKSHOP
SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
132-3085 ALBERT STREET,
REGINA, SASKATCHEWAN
S4S 0B1

For more information phone the SSCA at (306) 787-0558 or Fax us at (306) 787-0551.

Prairie Steward . . .
Conserving the Land Resource
The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Summer Issue No. 10, 1993

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SASKATCHEWAN SOIL CONSERVATION ASSOCIATION

In This Issue:

Huge Crowd Attends Soil Conservation Field Day

By Ray Kettenbach
SSCA Communications Specialist

A huge crowd of just under 4000 attended the 1993 Soil Conservation Field Day, June 15th, at the Moose Jaw Airport. Farmers came by car, truck, bus and even airplane to see the latest in soil conservation and direct seeding equipment. In all a total of 10 charter buses and 25 planes from Alberta, Manitoba, North Dakota, Montana, Kanasas and all corners of Saskatchewan brought farmers interested in seeing the very latest in direct seeding technology.

Many guests from over seas also attended the field day

Attendance at the field day included people from a total of fourteen foreign countries. Groups from Saudi Arabia, Jordan, China, Ukraine, Spain, France and Iraq were a few of the countries represented. All of the international guest were impressed with the scale of the event. They were thrilled to see such a large variety of soil conservation equipment working in the field and not as a static display. All of the international guests were in Regina for the Western Canada Farm Progress Show which kicked off the very next day. Many of the farmers in attendance also headed for Regina to take in the Farm Progress Show.

A dozen different direct seeding units were on hand to demonstrate their abilities at seeding without any pretillage in both chemfallow and standing stubble. This demonstration area was by far the most popular as people crowded around equipment jockeying for a better view. "Farmers interested in direct seeding had the opportunity to see everything that was required to make this system successful right here at one sight, at one time," says SSCA President, Gerry Willerth. A unique feature of the field day was that plots had been seeded in early May which allowed people to examine germination and see the kind of job various direct seeding units could do. At a near by area the same machines were working and folks could see the how they performed first hand on the varying conditions of chemfallow and standing stubble. Willerth added that he thinks a lot of farmers now have a better idea what type of machine will work best in their operation.

People crowded around the direct seeding equipment to get a better look.

The residue management demos also were also well attended. Farmers were very interested in how the residue management equipment would work in field conditions. Organizers unrolled round bales of unthrashed wheat on stubble to simulate harvest conditions. Many farmers left the field day realizing that residue management was the first change they need to consider in there seeding operation. Other conservation related equipment also demonstrated and displayed included tillage and fertility management and spray technology. A trade show area was busy throughout the day as farmers gathered more information on direct seeding and soil conservation. Other successful direct seeding days were held in Melfort and Leroy. Congratulations!

Organizers of the event were very pleased with the turn out and the weather. At the end of the day a rain shower moved through the area settling the dust and sending people looking for cover. The organizers wish to thank Flexi-coil, Monsanto and Morris for their financial support for this field day. Plans are already under way for a Field Day next year. See page 10 for more of the field day.

Exciting Line Up of Speakers For SSCA's 1994 Annual Meeting

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

SSCA's 1994 annual meeting in Lloydminster will focus on direct seeding and designing a sustainable agricultural system. It will be highlighted by presentations from Bob McNabb, Dwayne Beck and Jim McCutcheon. The conference will be opened by Bob McNabb of Brandon, Manitoba. Bob is a farmer and long time ManDak member. He will be discussing the importance of sustainable agriculture to farmers.

Dr. Beck will open the direct seeding portion of the conference. He is manager of the Dakota Lakes Research Station at Pierre, South Dakota. He was the keynote speaker at our 1992 conference in Prince Albert. Dwayne is certain to give a motivating presentation on direct seeding.

The closing speaker will be Jim McCutcheon from Homewood, Manitoba. Jim is a member of ManDak and one of the original zero tillers in western Canada. Jim's presentation will give us food for thought about our reasons for direct seeding.

Other conference speakers include Ken Kirkland of Ag. Canada, Gordon Hultgreen of PAMI, John Harapiak of Westco Fertilizers and Mark Goodwin of Manitoba Ag., along with many more scientists and experienced farmers.

This is the first year we will have concurrent sessions including forages, pasture management, specialty crops and trees. Other highlights include a trade show, an evening banquet, breakfast, evening bear pit sessions on direct seeding, student educational challenges and workshops, and SSCA's 4th Annual Photo Contest.

Don't be disappointed!
Register early!

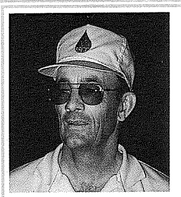
For more information contact the SSCA in Regina, or clip out the registration form on page 16 and register today!

Fast Facts On Soil Conservation

Source: Statistics Canada and various agricultural factsheets and articles

- Bare soil can begin to blow with as little wind as 30 KMH.
- According to a worldwide UN study, the productive value of 7 million hectares of land, is lost annually due to soil degradation.
- Over 3800 hundred farmers attended the SSCA's 1993 Soil Conservation Field Day held June 15th near Moose Jaw, SK.
- On average, direct seeding can reduce input costs by 20 % resulting in a savings of $20/acre worth of fuel and machinery costs.
- Maintain a cultivated strip at least 3 feet wide on each side of the shelterbelt tree rows.
- The renewal rate for topsoil, under natural conditions of soil formation, is 25 mm or 1 inch per 30 years.
- Rangelands account for more than 16 million acres in Saskatchewan, one quarter of the provincial agricultural land base.
- Upon request a PFRA Shelterbelt technician will visit your farm and help you plan your field shelterbelt.

Association Information



Gerald Willerth
SSCA President

President's Message

The spring and early summer of 1993 have turned out to be one of the coolest on record. To date, at my farm, there has been only 4 days that I classify as really warm, and approximately 40 days that I wished would have been warmer. Numerous spring frosts took their toll on our earlier crops and forage stands. Indian Head was actually quite dry compared to normal until late June when the monsoons started. Things look lush and green now, however, our potential yield was established in June and any continued rainfall now will benefit the mosquitoes mostly. Our hay crop is quite short, but I refuse to cut it until the weather changes, as it might just disappear if we get another heavy or prolonged wet spell.

The weather did cooperate, though, for our Soil Conservation Field Day at the Municipal Airport near Moose Jaw, on June 15. Approximately 4,000 people congregated to see demonstration's of direct seeding, spraying, conservation tillage and harvest residue management. All aspects of the field day were extremely successful and we received many congratulatory messages from all involved parties for sponsoring such an event. Since the actual field day, there have been significant "after the day" traffic by farmers to view the plots on their own. The signs identifying each plot will remain until late summer, if you wish to view them. We are presently in the process of negotiations to hold another Conservation Field Day in 1994. Watch for more information and details about this field day in the coming months and issues of the Prairie Steward.

The SSCA Saskatchewan Conservation Technology Farm Centre near Prince Albert is slowly taking shape. We have contracted with the Prince Albert ADD Board to look after the day to day operations of the farm for this growing season. This centre should provide the space for considerable research by Ag Canada and the U of S as well as demonstrate various conservation practises. Ducks Unlimited will have a large area seeded to perennial forage where producers and urban dwellers can observe wildlife and enjoy nature. Stay tuned for more developments at our learning centre.

There is nothing concrete to report regarding our future, especially concerning the Canada Saskatchewan Green Plan. The role of the SSCA in programming remains uncertain. Technical transfer to farmers on soil conservation may be drastically cut back. Time will tell. Odd that just when the tidal wave of direct seeding is rising, it appears that farmers will not have the tech transfer experts available to advise then on the problem solving which inevitably arises when changing cropping system. For more on the Canada Saskatchewan Green Plan see my editorial on page 3.

I hope you have a good harvest. Remember direct seeding next spring starts at the back of your combine this fall. I hope to see you in Lloydminster in February on the 14th and 15th for our Annual Meeting and Direct Seeding Workshop.

Staff Notes

SSCA Baby Boom Continues!

Congratulations are extended to Sue and John Kiss on the birth of a son, Micheal, on June 1st.

Congratulations are also extended to Lee Moats and his wife Laurie on the birth of a son June 14th. Joshua is also doing just fine. Lee is the Director At Large for the SSCA.

Outstanding Young Farmer

Congratulations to Garry Meier and his wife Bonnie for being selected as Saskatchewan's Outstanding Young Farmer of the Year!

SSCA Staffing Changes

Ray Kettenbach, the SSCA's Communications Specialist has relocated to Alberta effective June 30th. Ray and his wife Nancy are living in Calgary and enjoying being closer to their families and the mountains. Ray will be doing communications for the UGG.

Effective August 1st Bob Linnell, S.E. Regional Soil Conservationist will take over Communications Activities and will be in Regina 2 days a week and the remainder in the Weyburn office.

Effective August 31st, Pat Flaten S.W. Regional Soil Conservationist will move to Prince Albert to become the Project Manager for the Conservation Learning Centre.

Effective August 31st, Garry Meier, N.E. Regional Soil Conservationist will be devoting more time to his farming operation.

Effective August 31st, Juanita Polegi, E.C. Regional Soil Conservationist, will return to the farming operation. In the new year, Juanita will be working with the SSCA's Education Programs.

June 15th Field Day Prize Winner

Bill Mrack of Delisle, Saskatchewan was the lucky winner of $ 1000.00 worth of Monsanto Products just for attending the SSCA's Field Day and stopping by the Monsanto Booth !

If you are a member of the SSCA and have not received your copies of the conservation video guides you can request them by calling (306) 787 0558 or writing the SSCA central office at #132 3085 Albert Street, Regina, SK S4S 0B1

SSCA's 4th Annual Photo Contest

- Open to all Amateur photographers.
- Photos must have been taken in the last three years
- All photos will be returned
- Photos **cannot** have been entered in previous SSCA photo contests
- Photos must be received by **January 14, 1994**
- Now is the time to take those pictures!
- What does your conservation farm look like? Is it a winner ?
- Slides or prints welcome (originals only)
- Each photo must be clearly labelled
- Must be present at the annual meeting to win
- Three Categories:
  - soil conservation
  - soil degradation
  - wildlife and habitat
- send photos to: Garth Patterson, Saskatchewan Soil Conservation Assoc., 3735 Thatcher Ave., Saskatoon S7K 2H6, Phone (306) 933-5287

Winners from the 1993 SSCA Slide Contest

1st place Soil Conservation Category
Tom McDougall, Lebret

1st place Soil Degradation Category
Larry Gramiak, Saskatoon

1st place Wildlife Category
Bruce Elke, Janzen

REGIONAL SOIL CONSERVATIONISTS: (located in Rural Service Centres)

Blair McClinton, North Battleford,	(306) 446 7650
Garry Meier, Tisdale,	(306) 873 4290
Garth Patterson, Saskatoon,	(306) 933 5287
Juanita Polegi, Yorkton,	(306) 786 1526
Pat Flaten, Swift Current,	(306) 778 8284
Bob Linnell, Weyburn,	(306) 848 2381

HEAD OFFICE:
132-3085 Albert Street
Regina, SK
S4S 0B1
(306) 787 0558

John J. Kiss, Executive Manager
Carolyn Fife, Office Manager
James Lokken, Economics Specialist
Yvette Crane, Education Specialist
Chris Zabek, Shelterbelt Information Officer
Crystal Dash, Receptionist/Secretary

The SSCA Is Pleased To Welcome The Following New Members

Andrew, Jim
Archdekin, Miles
Avonlea Soil Co-op Assoc.,
Barker Farms Ltd.
Beach, Doug
Bell, Gerry
Carlson, Don
Clemens, Bob
Derksen, Doug
Dove, Elmer
Driver, Darrol
Dundas, Cliff
Dunham, Neil
Dunn, Howard
Elian, Terence
Ennis, Wes & Cliff
Ewen, Dale
Eyolfson, Bob & Wendy
Forthum, Eldon
Fransoo, Jerome
Froehlich, Michael
Gadd, Ernie
Gottselig, Bill
Hagen, Robert
Hamilton, Murray
Heichman, Harvey
Heinemann, Walter
Craven, SK
Landis, SK
Avonlea, SK
Wilkie, SK
Weyburn, SK
Gravelbourg, SK
Meacham, SK
Mossleigh, AB
Indian Head, SK
Biggar, SK
Regina, SK
Sinualuta, SK
Admiral, SK
Turin, AB
Arelee, SK
Glenavon, SK
Riverhurst, SK
Leslie, SK
Landis, SK
North Battleford, SK
Marquis, SK
Mosse Jaw, SK
Outlook, SK
Strathmore, AB
Duval, SK
Perdue, SK
Regina, SK
Hummason, George
Impl.(1992) Ltd.,
Jackson, Don
Johnson, Kelly
Knutson, Raymond
Kuntz, Ross
Lafond, Guy
Leisle, Earl A.
Ltd., McKinley Farms
Ltd., Burton Acres
Lund, Ben

Mair, Gordon
Management 2001 Ltd.,
Agri Resource
Marcotte, Brian
McKnight, Roberta
McNeely, Vern
Moran, Dale
Noble, Bryan
Orosz, Frank
Osmachenko, Gary
Randall, Robert
Robb, Dale
Scott, Tim
Simpson, Vance
Simpson, Alfred G.
Lockwood, SK
Preeceville, SK
Dummer, SK
Assiniboia, SK
Naicam, SK
Assiniboia, SK
Indian Head, SK
Morse, SK
Biggar, SK
Springwater, SK
Fort Benton, MT
U.S.A.
Biggar, SK

Saskatoon, SK
Torquay, SK
Elrose, SK
Warner, AB
Huxley, AB
Nobleford, AB
Prud'Homme, SK
Sonningdale, SK
Liberty, SK
Mossbank, SK
Nipawin, SK
Raymore, SK
Watrous, SK
Skelton, Noel
Solodzuk, John T.
Stang, Lucian
Steinley, Aaron
Tait, Don
Taylor, Ronald
Topola, Vince
Twemlow, Trevor
Unger, Ben
Volden, Gary
Weisbrod, Stan
Wood, William L.
Woodward, Robin
Wright, Douglas
Wulfsohn, Dvoralai
Harris, SK
Two Hills, AB
Avonlea, SK
Empress, AB
Elrose, SK
Gull Lake, SK
Limerick, SK
Assiniboia, SK
Rush Lake, SK
Leroy, SK
Cupar, SK
Craven, SK
Tompkins, SK
Nobleford, AB
Saskatoon, SK

We take this opportunity to thank our Corporate Members:

DowElanco	Newmarket, ON
Ducks Unlimited	Winnipeg, MB
Flexi-coil Ltd.	Saskatoon, SK
Monsanto Canada	Saskatoon, SK
Saskatchewan Institute of Pedology, U of S	Saskatoon, SK

Coming Events

(403) 936-5306.

October 1993 to January 1994

One day introductory and advanced direct seeding workshops (short courses) Multiple dates and locations in Saskatchewan, Alberta and Manitoba are being planned in cooperation with Agri-business. For more information contact Garth Patterson (306) 933-5287.

November 16th & 17th, 1993

Direct seeding Workshop sponsored by Southern Alberta Conservation Association, Exhibition Grounds, Medicine Hat, AB. For more information contact Stan Dereniwski (403) 529-3616.

January 16 to 19th, 1994

Alberta Conservation Tillage Society (ACTS) annual meeting and conference, Fantasyland Hotel, Edmonton, AB. For more information call Russ Evans

January 31st to February 2nd, 1994

Manitoba-North Dakota Zero Tillage Farmers Association (ManDak) annual meeting and zero tillage workshop, Exhibition Grounds Minot, ND. For more information call Lyle Samson (701) 852- 8895.

February 14-15th, 1994

SSCA annual meeting and direct seeding workshop, Exhibition Grounds Lloydminster, SK/AB. For more information contact: Blair McClinton (306) 446-7650 or the SSCA (306) 787-0558.

June 14, 1994 (Tentative date)

SSCA Direct Seeding Day in Association with the Western Canada Farm Progress Show, Regina, SK. For more information contact the SSCA (306) 787-0558.

Herbicide Resistance Tables

Courtesy
ACTS Conservation Tillage News

Table 1

Herbicide Classes Based on their Mode-of-Action

Group 1
(contains ACCase grasskiller)
Achieve, Assure, Fusion, Fusilade II, Hoe-Grass 284, Hoe Grass II, Poast, Laser, Laser DF, Triumph Plus, Select, Puma

Group 2
(contains ALS/AHAS inhibitors)
Ally, Assert, Express, Glean, Laser DF, Muster, Refine, Extra, Triumph Plus

Group 3
(contains dinitroanilines or DNA's)
Advance, Edge, Rival, Treflan, Triflurex, Fortress, Heritage

Group 4
(contains growth regulator herbicides)
2,4-D, MCPA, Banvel, Blagal, Buctril M, Diphenoprop 600, Estaprop, Dyvel, Kil-Mor, Laser DF, Lontrel, Target, Tordon 202C, Tropotox Plus, Triumph Plus

Group 5
(contains triazines)
Bladex, Blagal, Lexone, Sencor

Group 6
Buctril M, Hoe-Grass II, Pardner, Laser

Group 7
Lorox, Afolan

Group 8
Avadex BW, Fortress, Avenge 200C

Note: *Some herbicides contain more than one active ingredient so they appear in more than one group. The Manitoba Department of Agriculture is now recommending that Group 1, 2 and 3 herbicides should not be used more than one year in three. They are presently refining recommendation on the other groups.*

Table 2

Recommended Herbicide Rotation

YEAR	CROP	HERBICIDE	GROUP
ONE	Wheat	Avadex BW	8
TWO	Wheat	Laser	1
THREE	Barley	Banvel	4
FOUR	Canola	Edge	3
FIVE	Wheat	Avadex BW, Avenge or Mataven or Fortress for green foxtail problems	8 3/8
SIX	Wheat	Hoe Grass	1
SEVEN	Barley	Butril M	4/6
EIGHT	Canola	Treflan	3

News From Conservation Learning Centre Prince Albert

By Marvin Fenrich
SSCA N.W. Director

The crop is up and the rain has been falling regularly at the Conservation Learning Centre (CLC). This year's cropping program consists of 5 Polish canola varieties on 224 acres. A yield trial has been set up to compare the following varieties: Parkland, Tobin, Reward, Horizon, and Goldrush. Another trial is being conducted by the Prince Albert ADD Board. This trial will examine seed placing Urea nitrogen with Parkland canola seeded by a Great Plains air drill. In this program, rates will range from 0-70 lbs/acre of Urea nitrogen. The balance of the seeded acres have been planted to Biggar wheat.

The Saskatchewan Department of Agriculture and Food have also set up a small plot specialty crop demonstration. This demo features every conceivable specialty crop that has and could be grown in the northeast region. Crops range from legumes to spices to sunflowers.

Ducks Unlimited have seeded their habitat area to grass and are well underway to establishing a dense nesting cover. This area of the CLC will demonstrate the value of converting pothole type areas from annual cropping to wetland habitat. This area is just adjacent to Highway #2, going south of Prince Albert, and will also serve as a section where visitors can come and get a closer look at natural habitat.

PFRA has completed the topographic survey and they are also in the planning stage of establishing field shelterbelts, woodlots, tree variety plots, and possibly some fruit tree species demonstrations.

The Melfort Research Station of Agriculture Canada, is busy planning research trials which will start in the spring of 1994. As 1993 is the start up year for the CLC, there was not enough preparation to establish research trials in 1993. We will have to wait until 1994 to see Ag. Canada's presence at the centre.

The University of Saskatchewan will also be conducting research at the CLC in 1994. Their involvement will be in soil and water monitoring. During 1993, they are monitoring green house emissions from the fields. This study will be ongoing at the centre.

The CLC held its first field day on July 6th. The morning workshop session was held in Prince Albert and included: 1) Fertilizer placement in direct seeding, speaker - Norm Flore, Westco Fertilizer, Calgary; 2) Managing water with conservation tillage, speaker - Dr. Adrian Johnson, Ag. Canada, Melfort; 3) Seed openers and direct seeding results in 1993, speaker - Garry Meier, SSCA, Regional Soil Conservationist.

After lunch, tours to the CLC provided people with a chance to see the trials already underway. Due to some soggy ground, getting at all the plots was a bit difficult. In all nearly 100 people attended the field day and many thanks to the organizers, Saskatchewan Agriculture & Food - Extension Division, and District 32 ADD Board.

This is a brief update of what is happening at the CLC this year. Please remember that 1993 is the start up year and as with any project there have been growing pains along the way. It may appear that not much is happening at the various plots and fields this year, but be assured there are many people working and planning for the future of CLC. I have been encouraged by the number of organizations working together to make this venture a success.

The SSCA has been involved with this project since its inception and we will continue to keep you informed on the progress and activities happening at the CLC.

Shelterbelt Economic Fact:

Many of the tree species currently being distributed free to prairie farmers produce very good quality finished wood for furniture building, construction, and hobbyists. This little known development surfaced recently at the PFRA Shelterbelt Centre Field Day held recently at Indian Head, Saskatchewan.

What Do You Learn From a Tour or Field Day?

By Bob Linnell
SSCA S.E. Regional Soil Conservationist

Everyone at some time in their life goes on a tour, or in the case of practising farmers, a field day. Some travel a great distance to attend these functions, while others wouldn't cross the road to participate.

Tours can be a great learning experience because they are usually held to showcase something developed by persons with a large amount of expertise as well as enthusiasm. Field days are great because you can benefit from someone else's experience at no expense to you, other than travel costs and the time it takes away from your own operation. Both tours and field days allow you to view the latest machines, methods and techniques before you go out and purchase or experiment.

Smart operators usually tour regularly. Take your friends, or maybe your banker - they need to know!

By Carolyn Fife
SSCA Office Manager

Membership in the SSCA has grown to a total of 789 members. Broken down by regions membership is as follows: West Central (194); East Central (92); North East (77); North West (96); South East (154); South West (118); out of Province members (58). Out of province members include Alberta, Manitoba and the United States. This growth in membership was made possible by the Monsanto Membership Incentive Program. We would like to take this opportunity to thank Monsanto for their sponsorship. All available memberships under this program have been utilized. The regular membership rates are now in effect. (3 years for $100.00). Remember you can still take part in the Membership Enhancement Program:

_____ Full Membership

(Farmers) Name — 1 yr $ 50.00 _____ / 3 yrs $100.00 _____

_____ Associate Membership

(non Farmers) Address — 1 yr $ 50.00 _____ / 3 yrs $100.00 _____

_____ Supporting Membership

(Institutions) Postal Code Telephone — 1 yr $ 500.00 _____ / 3 yrs $1,000.00 _____

_____

QTR SEC TWP RGE W. of

(land location of home quarter for regional designation purposes)

Membership Enhancement Program:

If you are presently a member of the SSCA and wish to help the Association by recruiting new members, both you and the Association can benefit from your efforts. For every six (6) memberships sold in one year by you as a member, you will receive an additional 3 years membership as a bonus. To qualify, print your name on the applications you sell and forward the applications plus membership fees to the SSCA. Applications may be sent individually or as a group. All memberships received by the SSCA between 01 April and 31 March of each year will be counted towards this Membership Enhancement Program.

Answers to the Conservation Crossword

(from page 8)

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	C	A	T	T	L	E		D					
				U				I			S		S
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EDITORIAL COMMENT:

An Insiders - Outside Look At The Canada-Saskatchewan Green Plan.

By Gerry Willerth
SSCA President

It appears that the "i's" are all dotted, the "t's" are crossed and the budget cuts exacted (well almost) for the long awaited $51.6 million Canada-Saskatchewan Green Plan. While writing this article, once again the face value of the Agreement decreased as a result of on-going budget cutting. The Agreement was $43.6 million, it is now $41 million. Next year it may be ?

In 1991, the lead-up to this $51.6 million Green Plan Agreement included a public (invited guests only) consultation process to priorize the environmental issues for Green Plan funding. The priorization for funding was agreed to as follows:

1. Agricultural Soil Resources
2. Surface and Groundwater Quality
3. Water Quantity
4. Pollution and Waste Management
5. Wildlife Habitat
6. Energy
7. Genetic Resources
8. Air and Climate

After reviewing the allocation of real dollars in the next to final Agreement, a cynical observer to the process could say that everything has been added to the soup, it's cooked and ready to be served.

My observation, after waiting for 2 years to open the lid and look, is that the soup's quality appears to be less than I had hoped for, but I will reserve judgement until I see concrete programs and activity. So you say, **"What's New"?** Dreams are not reality and because it's right doesn't mean it will happen. In addition, fiscal constraint is the corner stone of life these days.

So what is "NEW" in this Agreement is the "wider environmental scope" (which may translates into a dilution of all real dollars for any environmental project). New is that there are NO NEW DOLLARS on the provincial side. New is the lack of any real plans for technical transfer to farmers and the fact that only about 1/3 of the dollars (all from the PFRA) are available to farm groups and farmers. New are the 8 issues priorized by the invited public (see above) that are not likely to be reflected in the final allocation of dollars. New is that the farm-based program will likely be a 3 year program instead of the 4 year program initially proposed.

New is the greater degree of farmer/public consultation that will minimize the above realities by reorganizing "OLD" and creating "NEW" COMMITTEES to evaluate and approve project submissions. The old and new committees include: 1 Overall Management Committee, 1 Implementation Committee, 1 Communications Committee, 4 Technical Research Committees, 6 Regional Review and Approval Committees, 1 Provincial Review and Approval Committee, 1 Indian Agriculture Review and Approval Committee, 1 Evaluation Committee and of course other technical committees as required.

I don't know about you, but I don't feel any greater degree of comfort knowing that there are so many committees looking after the interests of on-farm soil conservation in Saskatchewan. In addition, after the "shut-yourselves-down and wait for us to get back to you about the future" attitude at the end of the last soil conservation program, many disctrict and provincial level volunteers including myself are not nearly as enthusiastic about government soil conservation programs as we were in the fall of 1989.

The only highly visible success story of the last agreement is the dramatic adoption of direct seeding techniques by Saskatchewan farmers. I have not only seen and heard this inside Saskatchewan, but have also been told this by numerous farmers and others from outside Saskatchewan, A major disappointment of the new agreement is that it is said to build on the successes of the past agreement, but what I see is the few REAL NEW dollars specifically targeted everywhere except toward continuing direct seeding technology transfer to farmers. Maybe I misunderstand or have missed something?

Which ever way **YOU CHOOSE** to view the new Green Plan in Saskatchewan, there will be one reality on the farm. We farmers will have to make the best of what we have. To allow you to make up your own mind, here is how YOUR GREEN PLAN DOLLARS may be allocated in Saskatchewan.

Authors Note: *Based on continuing budget cuts and changes, I do not guarantee that the figures quoted in the next column will be the final ones. The budget figures presented are for when the Agreement was for $46.6 million. As of writing, another budget cut has been made to reduce the Agreement to $41 million. The specific location of cuts is not known at the time of writing.*

Canada-Saskatchewan Agriculture Green Plan Agreement and Work Plan

The Canada-Saskatchewan Agriculture Green Plan Agreement and Work Plan provides a breakdown of the five broad categories and matching funding to be provided by the federal and provincial governments. The province's contribution will come from existing, or an extension to existing programs in: the Saskatchewan Water Corporation (SWC), Environment and Resource Management (SE&RM) and Saskatchewan Agriculture and Food (SDAF), including future eligible research projects funded under Saskatchewan Agriculture and Food's Agriculture Research Branch.

Provincial Funding Contribution*

Program Description	Estimated Total Funding March 31, 1991 - 1997
1. Resource Management	
Water Quantity and Quality	$ 3.66 million
Wildlife & Habitat Acquisition	$ 3.45 million
Waste Management	$ 3.7 million
SDAF Extension Service Staffing	$ 3.1 million
Ethanol Projects	$ 1.5 million
Pasture & Grazing Extension Service	$ 0.925 million
Geographic Information Systems	$ 0.86 million
Pesticide Regulation	$ 0.6 million
Land Use Planning	$ 0.3 million
Shelterbelts	$ 0.10 million
2. Innovation Partnerships	
The province has not committed funds to this component of the Agreement.	
3. Research and Development (including Soil Survey)	$ 4.6 million
Saskatchewan Agriculture and Food provides funding for research and development projects. Projects which are considered to have environmental sustainability benefits for the agri-food sector, may be counted as provincial contributions to the Agreement.	
4. Communications	$ 0.3 million
The provincial component of the communication program will be delivered by Saskatchewan Agriculture and Food as ongoing activities - Sustainable Production and Communications Branches' publications budgets and Communications Branch staffing.	
5. Administration and Evaluation	$ 0.15 million
Saskatchewan Agriculture and Food personnel will be involved in administration of the Agreement and participation in follow-up evaluation.	
Total Provincial Contribution	**$ 23.3 million**

* Note that there are no new dollars in this section. These funds are essentially already spent.

Federal Funding Contribution (PFRA)

Program Description	Estimated Total Funding
1. Resource Management**	$12.3 million
Federal programs being delivered under this component of the Green Plan are the "Farm-Based" and other specific government delivered programs. The farm-based programs will receive approximately $ 9.0 million. The funds will be broken down into three categories; regional $ 6.0 million, provincial $ 2.0 million and reserve $ 1.0 million. The funds will be made available based on proposals from non-profit organizations to locally appointed regional and provincial committees. The farm-based program will be delivered jointly by staff from PFRA and Saskatchewan Agriculture and Food's Extension Branch.	
2. Innovation Partnerships**	$ 2.90 million
This commitment is included to add flexibility to the Agreement and allow the funding of projects which may not be addressed through the resource management program. The program will also provide the Agreement Management Committee with the flexibility needed to address changing priorities or good emerging ideas.	
3. Research and Development	$ 7.40 million
The federal research program will focus on four areas: sustainable land management; sustainable soil management; crop pest management; and integration of wildlife with agriculture.	
4. Communication Program	$ 0.50 million
The communication program is aimed at ensuring the information about the Agreement, its programs and their results reaches the target audience. It is also intended to improve the public's knowledge of the issues and facts of sustainable agriculture and its link with rural stability and diversity.	
5. Administration and Evaluation	$ 0.20 million
Includes administrative costs associated with the delivery of the Agreement and authorized administrative expenditures including producer representation on committees. A mid-term and final evaluation will be conducted.	
Total Federal Contribution	**$ 23.3 million**

** Note these are new dollars that can be accessed by farmers and farm organizations.

Regional Roundup

Common Direct Seeding Problems in the Northwest

By Blair McClinton
SSCA N.W. Regional Soil Conservationist

As in other areas of the province, direct seeded fields have become a common sight in the northwest. While most of these fields look good, there have been some problems. The following are some of the more common problems that I saw in the field this spring.

1. ***Winter Annuals***
   Winter annual weeds were not controlled on several fields this spring. While the preseeding burnoff with Rustler will often control these weeds, they will have already dried out the seedbed causing poor germination. This is more of a problem with shallow seeded crops like canola, which may get stranded in dry soil. These weeds should be controlled in the rosette stage with a 2,4-D treatment in either late fall or early spring. The fall treatment is especially important if a pulse or oilseed is going to be seeded.

2. ***Poor Seed Placement***
   Poor seed placement was a problem for producers who were using some of the double shooting knives on air seeders. These knives tended to place the seed in loose soil, and in many cases the seed and fertilizer were mixed together. This resulted in poor emergence and thin stands. The single shooting systems that seed-placed the fertilizer were the most trouble free, as long as not too much nitrogen fertilizer was used.

3. ***Seed Depth***
   Improper seed depth was a common problem this year. It resulted in thin plant stands and secondary growth. There were a few examples of the seed being placed too shallow. While shallow seeding is desirable in direct seeding, the seed needs to be placed in moisture. There were some variations in seeding depth caused by travelling too fast with the seeder. The faster speed causes the seed to mix with the soil, varying the seed depth. As well, the back row shanks throw soil on top of the other furrows, increasing the seed depth.

Most of the problems that farmers had this year can be avoided by paying attention to the five key areas of direct seeding:

- residue management
- crop establishment
- crop rotation.
- weed control
- fertility

Fertilizing Dilemma

By Pat Flaten
SSCA S.W. Regional Soil Conservationist

Are you contemplating entering the world of direct seeding? Or, are you considering a lower disturbance method of direct seeding? If so, how are you planning to fertilize your crop? Nitrogen fertilizer application is one aspect of direct seeding which has become a dilemma for some. You may be saying, "Sure, I have my residue management figured out - I cut it short enough to pass through my seeding equipment and the straw and chaff are chopped and spread evenly across the width of cut. And sure, I have my crop rotation figured out to avoid disease, insect and weed infestations. I have developed a good weed control program. The economics of direct seeding seems to work out for me, too. I thought I had worked out the best deal on seeding equipment too, but now I find it a challenge to get the fertilizer down without causing more soil disturbance than I would like, but at the same time not causing crop damage due to high concentrations of N with the seed."

We know that the use of animal and green manures and the inclusion of legumes in the rotation can help lower the crop nutrient requirements. However for most producers, these methods will not satisfy their full N requirements. It is safe to assume that for most producers, avoidance of N fertilizer is not a reasonable option.

Theoretically, the experts tell us, there are several options of application methods. They fall into the three categories of pre-seeding fertilizing, post-seeding fertilizing or fertilizing while seeding.

The following lists some of the more common examples:

1) Pre-seeding Fertilizing
   - Deep band any form of N in the fall or spring.
   - Broadcast N just prior to seeding and incorporate to some extent during the seeding operation.

2) Post-seeding Fertilizing
   - Broadcast ammonium nitrate (34-0-0) and hope for rain to wash it into the crop's root zone.
   - Apply liquid N with spoke-wheel equipment or apply it to the leaves of the growing crop.

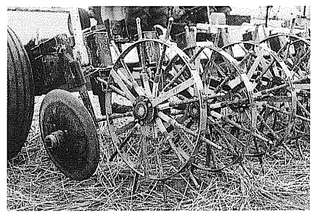
3) Fertilize while you seed
   - Seed place the fertilizer with openers and row spacing which allow sufficient soil-seed-fertilizer mixing to avoid seedling damage.
   - Choose openers with side banding capabilities, making sure that there's an inch or so of distinct separation between the fertilizer and the seed. One special form of side banding may include mid-row banding N between pairs of seed rows.

It seems that, agronomically speaking, the ideal method is to side band the N fertilizer as close to the seed as is safe, which should be 1 - 2 inches. The main advantages of this method are threefold. First, the fertilizer is readily available to your crop. Secondly, the fertilizer is less available to weeds which compete with your crop. And thirdly, you should get more "bang for your fertilizer - buck" by avoiding N losses to the atmosphere or the sub-soil.

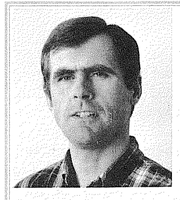
Choosing a method of fertilizing will depend on many variables, such as cost, availability of equipment, availability of fertilizer, crop choice, fertilizer requirements, soil moisture and weather patterns, soil texture, expected seed bed quality, labour availability, expected weed types and resulting nutrient efficiency.

The choice ends up being what compromises will you make between all these factors? Unfortunately, no one answer is everybody's answer to a specific situation.

More detailed information on fertilizer application can be found in the Direct Seeding Manual, produced by PAMI and SSCA. Local fertilizer dealers and Rural Service Centres will also assist you.



Spoke wheel fertilizier applicator



1993 Crop Residue Management
- Planning for Direct Seeding Starts this Fall

By Garry Meier
SSCA N.E. Regional Soil Conservationist

Much of Saskatchewan's seeded acreage in 1993 will be covered with above normal amounts of straw which will hopefully produce an above normal yield.

Depending upon how this crop residue is managed, it may provide many problems for seeding next year's crop or it will provide an opportunity to enhance the yield of next year's crop.

There are many benefits of leaving your stubble stand through the winter. They included: reduced soil loss from wind and water and increased soil moisture levels due to snow trap. To turn these benefits into improved gross margins, it is best to plan to direct seed your crop in 1994.

Planning for your direct seeded crop starts before harvest this fall. You must be prepared to leave this years crop residue cut at the proper height, chopped and evenly spread across your field.

There are a few points to remember about crop residue management for direct seeding in 1994. The first is to avoid cutting your stubble higher than the shank spacing on your seeding implement, especially if you plan to chemical fallow in 1994 and then direct seed in 1995. For example, if your seeding implement has a spacing of **eight inches between the shanks**, then your stubble height should be **no higher than eight inches**. This will minimize the possibility of having the straw that is knocked over by the leading shank wrapping around the next shank beside it and causing bunching on the soil surface after your seeding implement has passed through the field or in the worst case situation, plugging your seeding implement.

The second is to ensure that your straw and chaff which passes through the combine is spread as evenly as possible over the width of cut or swath width entering the combine. This will reduce problems of uneven moisture strips across the field, volunteer grains and weeds concentrated in narrow rows behind the combine and the toxic effects that may result from some crop residues.

Harvesting with proper straw and chaff spreading equipment.

If your combine is unable to accomplish the even residue distribution that is needed, the field must then be harrowed as soon as the combine has left the field. A good harvest day is also the best day for harrowing your stubble to spread straw. Chaff must be spread with the combine as **a harrow will Not spread chaff**. It is considered to be more important to spread the straw with a harrow than it is to move the combine to the next field if your combine is unable to do the job for you.

By paying attention to crop residue management on your farm this fall, direct seeding your crop will be an enjoyable and more profitable experience.

Seedling Vigour

By Blair McClinton
SSCA N.W. Regional Soil Conservationist

This year, many farmers have commented about how their crops emerged and then just "sat there" (developed slowly). One of the reasons for this is that last year's early frost reduced seed quality.

Germination is the most commonly used seed quality factor. However, germination is not always a good indicator of seed vigour. While seed with low germination normally has low vigour, seed with high germination does not always have high vigour. Weathering problems can result in seed with low vigour.

Seed with less vigour becomes more of a concern when growing conditions are poor or when seeding is deep. The cool growing conditions this year combined with less vigourous seed has resulted in weaker stands and slower crop development. These less vigourous plants are more susceptible to other plant stresses like weed competition, diseases and herbicide carryover.

To minimize problems with poor quality seed, you should have your seed tested for germination. While one can do a germination test at home, it is to your advantage to have it tested at an accredited lab. Trained technicians can give a more accurate test by assessing dormancy at the time of testing. Assessing seed quality goes beyond germination. Seedlings must be tested for vigour. Not every seed that germinates will result in a viable plant. This assessment requires a trained eye.

High quality seed is an important component in the crop production equation. The characteristics of high quality seed are good colour, high bushel weight, high germination, and varietal purity. If your seed does not possess these characteristics, consider purchasing certified seed. High quality seed is a good investment.

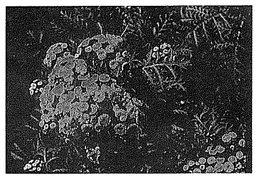
Say, What Is That Flower?

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

In recent years, a weed has gained some prominence in this area. Common tansy (Tanacitum Vulgare L.) is a stout, erect-stemmed perennial 30 - 100 cm (12 - 39 in) high. Its leaves are 5 - 25 cm (2 - 10 in) long and pinnately divided into narrow toothed segments. When the leaves are bruised, they are very aromatic. The flowers are a bright yellow, shaped like buttons (so are without ray florets) and are arranged in a flat-topped cluster.

Common tansy doesn't do well under cultivation. It will, however, move into areas of reduced tillage and perennial crop land. Currently, there are no herbicides registered for control of this weed but there are some products under research that look very promising.

Common tansy is another example of an introduced garden plant that has become a weed throughout the northern grain belt.



Common Tansy
(Tanacitum Vulgare L.)

Crop Adjusting

By Mike Haupstein
Saskatchewan Crop Insurance Corporation, Weyburn

Remember when crop adjusting was Black and Green? When it was either summerfallow or seeded? Well, times have changed. We now have rotations from 50/50 to continuous cropping and not all summerfallow looks black. We hear new terms like residue management, preseeding burn-off, zero till, direct seeding, minimum till, and chemfallow.

It is important that we know the new terminology, that we understand the concepts of these new methods and be able to determine if the proper steps were followed. We must be able to recognize all of these, otherwise problems may develop. We must also be able to explain these methods or help the farmer access the information, and we must ask the right questions.

We must be able to analyze and determine if critical procedures were followed or if poor farming practices resulted from not following the right methods. We must weigh each situation and decide whether further action is warranted.

As crop adjusters, we are asked to be objective about new methods and ideas. This can be a problem when you have preconceived ideas of certain methods without understanding the critical factors required for success. As adjusters, we are also responsible for obtaining updated information, training and knowledge about the new systems of farming. If you walk into every situation with an open mind and an objective view, you will leave with more knowledge and a satisfied customer.

Tilling Soil Contributes to Greenhouse Gases

By John Kiss
SSCA Executive Manager

A recent study conducted in the United States concludes that conservation tillage dramatically reduces agriculture's contribution to greenhouse gases. A similar Canadian study conducted at the Agriculture Canada Research Station in Swift Current backs these findings. Greenhouse gases are carbon-based gases which deplete the ozone layer and contribute to global warming.

The American study, titled "Conservation Tillage Impacts on National Soil and Atmospheric Carbon Levels" was published in the January-February issue of the Soil Science Society of America Journal.

It calculates the potential effects of conventional, minimum and zero tillage systems on levels of soil organic carbon. Soil organic carbon is a source of greenhouse gases if it is released to the atmosphere. When stored in the soil where it belongs, it is important for soil structure, water holding capacity and plant nutrition.

The study finds that cropping systems which rely on numerous tillage operations release more soil organic carbon to the atmosphere than they store. Under minimum tillage, levels of soil organic carbon remain constant. Under zero tillage, soil organic carbon actually increases and the amount of carbon released to the atmosphere from cultivated agriculture decreases.

The study also estimates the amount of Carbon Dioxide (CO_2) emissions from field machines and from the production of herbicides and fertilizers required under the various tillage systems.

In Saskatchewan, wide spread conversion to a no till system of crop production would result in a reduction in CO_2 emissions of up to 220 million tonnes, almost half of the CO_2 produced in Canada in 1987. The resulting storage of carbon in the soil would offset a portion of the carbon emissions from other areas such as transportation and industry.

Adoption of no-till as the primary form of cropping across the United States would reduce U.S. agricultural CO_2 emissions by 45% from today's level. The American study found that **if the global annual release of soil organic carbon from agriculture could be eliminated through conservation tillage practices, 16% of annual global CO_2 emissions from fossil fuel would be offset.**

Conventional tillage	• repeated soil cultivation releases stored carbon into the air. • fossil fuel CO_2 emissions are highest with this system.
Minimum tillage	• tillage is reduced, not eliminated. • no net loss of soil organic carbon. • does not store extra carbon in the soil. • small reduction in fossil fuel emissions.
No till	• single soil disturbance during seeding. • increase in carbon stored in soil, offsetting CO_2 emissions from other sources. • major reduction in CO_2 emissions from fossil fuel.

All of this is good news for advocates of conservation tillage systems. Conservation tillage systems require less total energy to achieve approximately the same crop production levels as conventional tillage systems. No-till and minimum tillage reduce organic carbon losses from soil and use less fossil fuel, thereby reducing CO_2 emissions and greenhouse gases.

The Sixteen Secrets To Success In Direct Seeding

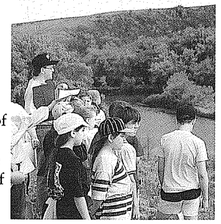
By Bob Linnell
SSCA S.E. Regional Soil Conservationist

# 1	Start on **ONE** field; don't seed the whole farm the first year.
# 2	Spread the straw and the chaff over the width of cut.
# 3	Separate the seed and the fertilizer by an inch or in a wide band.
# 4	Slow down to the right seeding speed in the field; **less than 5 mph**.
# 5	Control your weeds prior to seeding; after is less effective.
# 6	Select the machine that gets **good** seed to soil contact in residue.
# 7	Soil test to obtain the targeted yield results that you select.
# 8	Seed as shallow as possible, but still into good moisture.
# 9	Use the best quality seed you can obtain; Certified is best.
# 10	Calibrate the seeding machine to achieve desired plant population
# 11	Keep previous crop residue standing for best moisture savings.
# 12	Pack larger seeds very firmly; smaller seeds can be over packed.
# 13	Rotate crops, herbicides, and seeding directions to avoid problems.
# 14	Sell surplus machinery; keep tractor, seeder, sprayer and combine.
# 15	Practice soil conservation regularly on your farm.
# 16	Attend SSCA Direct Seeding Workshop February 14th and 15th in Lloydminster; the time invested to study pays!

Schools Involved in Soil Conservation

By Pat Flaten
SSCA S.W. Regional Soil Conservationist

Swift Current Comprehensive High School has been very involved in soil conservation education over the years. You may remember that a group of their students were competitors in the SSCA Student Challenge two years ago. They've included soil conservation as a topic of study in several classes. This spring, a group went on a field trip for a day, discovering the "real-world applications" of some of the things they've talked about in the classroom. The day was spent driving around the country-side in two school vans, looking at both the symptoms of and solutions for wind and water erosion and salinity. As Myles Radchenko, their teacher, says "As an educator, I think we still have much to do in teaching the concept of sustainability in agriculture and other areas of human interaction with the environment....They now know that there are practical solutions to soil conservation problems."



Moose Jaw Grade 4 students take part in a program to explore water erosion in the Wakamow Valley.

Another highlight of this spring was in seeing Moose Jaw's Wakamow Valley organization finish developing a customised module for soil conservation education in the area. Doug Cole, General Manager, has guided a group of volunteers to create a number of outdoor learning activities which can be used on site in their park system. For instance, where better to talk about water erosion than on some steep and in places eroded hillslopes of the Wakamow Valley? The kit, called "Welcome to Our 20,000 Birthday Party" is for teachers of Grade 4 students. Soil and geology topics are covered during a walk with 15 chosen locations to help experience the concept being taught. This kit is available for sign-out at the local school boards' offices.

Swift Current High School students explore the SandHills near Webb.

Acton's Shelterbelts

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

"The dust was so bad in '82 that we thought some trees would help", Brian says. "So we phoned the Shelterbelt Centre at Indian Head and they said we could have some caragana and green ash." That spring 4 miles of trees were planted and Brian Acton and his family, of Lemberg, began there field shelterbelt program.

Brian is pleased with the hardiness of the trees. Because they had not planned to plant shelterbelts, no site preparation had been done the previous fall. Brian recalls, "We didn't receive a whole lot of moisture that spring and we didn't have time to provide a lot of maintenance, but the caragana survived very well." Brian says the Green Ash didn't fare quite as well due primarily to the moles.

In 1987, the shelterbelts began to prove their worth. It was very dry that year, but the fields with the shelterbelts trapped more snow and yielded better than the unprotected fields.

"The moisture from the melted snowbank really helped the crop. The wheat closest to the trees (up to about 40 feet) was 8 to 10 inches taller than the rest of the field and yielded over 40 bushels. The rest of the field didn't do nearly as well."

In 1991, Brian planted more field shelterbelts. He put in 1 and a half miles of Green Ash and three-quarters of a mile of Scots Pine. Rabbits seem to like the little pine trees during the winters so some trees will be replaced in 1994.

Brian's only regret about planting the shelterbelts is that one row is too close to the road. This means he can work that area only one way and with his 90 foot sprayer, there tends to be herbicide overlap. In all other aspects, though, the Actons are pleased with the shelterbelts.

Brian began farming full time in 1977 with his father. He moved to a continuous cropping system in 1984. In 1985, he purchased an air seeder. His 1993 crop was seeded with a Flexi-coil Air Drill. They grow a variety of crops including cereals, canola, flax, field peas, and lentils. In February of 1993 Brian became an SSCA member.

Brian is the fifth Acton generation farming his land. He and his wife, Patty, have two sons, Douglas and Darren, and a daughter, Leanne.

Brian Acton and his young Scots Pine shelterbelt.

Top School of Ag. Papers Win SSCA Memberships

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

Congratulations to Marg Clarke of Eatonia and Jarrad Gerle of Ceylon, for having the top papers in the U of S School of Agriculture's Soil Conservation and Land Degradation Class. For their efforts, each wins a three year membership in the SSCA. The class is taught by Dr. Mike Grevers of the Soil Science Department at the U. of S. One of the requirements of the class is a paper discussing a soil degradation process and how it is managed on the student's farm.

Marg's paper describes how wind erosion occurs and methods to reduce it. "A very flexible plan is incorporated on our farm. A plan that consists of chemical weed control and minimum shallow tillage." Her opinion on government incentives was "research and educational material such as by Save Our Soils, or information from the Universities or Rural Service Centres all aid in educating the farmers. Having access to this material and further education on conservation practices should be incentive enough."

She concludes that "a holistic approach encompassing shelterbelts, strip farming, stubble management, snow trapping, chemicals and sometimes land diversion, while keeping in mind the offsetting problems of soil compaction and economic reality is clearly the only way to save our soil."

Jarrad's paper on wind erosion discusses the economic consequences of erosion, how erosion occurs, and methods to reduce it. "We maintain our stubble until spring. This protects the soil and captures snow evenly across the field. Stripcropping seems to work well on our farm, however stripped fields cannot be grazed when the crop is growing (without cross fencing)."

Residue management is a high priority on their farm. "We use chemfallow and reduced tillage to maintain trash cover. We also switched from mounted harrows on the back of a cultivator to a dead rod, which seems to keep more residue on the soil surface and reduce erosion."

Jarrad's comments on government programs included "making farmers more aware of existing programs, such as the shelterbelt and permanent cover programs." He also thought that "the government could provide educational programs to farmers to make them aware to the problem." Jarrad concluded that "wind erosion is a huge problem on the prairies and will continue to increase if farmers don't adopt methods to reduce erosion."

Selecting a New Direct Seeding Implement

By Blair McClinton
SSCA N.W. Regional Soil Conservationist

One of the most common questions that I am asked is "what is the best machine for direct seeding?". The best answer is to ask the farmer "what colour do you like?". In other words, there is no one "best machine". The process for deciding what seeder you want is similar to deciding what combine to buy. The following are some of the things that should be considered.

1. Can you use or modify your current seeder or should you buy a different one?
2. How much can you afford to spend on a different seeder? New or used equipment?
3. Do you want disc or hoe openers?
4. Is double shooting essential? This point should be carefully considered. Single shooting is simple and can be effective if the system properly planned. If double shooting is essential, look for a seeder that has worked successfully under a variety of conditions.
5. What conditions will you be seeding into? Soil type? Rocks? Chemfallow or stubble? Look for a seeder that will work in all of the conditions on your farm.
6. Who do I want to deal with?
7. Is the service and parts availablity acceptable?
8. Talk to other farmers, extension workers and researchers about their experiences.
9. Be careful, it's your money! Be skeptical about what salesmen tell you.

There are a wide variety of seeders available for direct seeding that will do a good job if you understand their limitations.

Working the Kinks Out of Your Direct Seeding System

By Garth Patterson
SSCA W.C. Regional Soil Conservationist

Throughout last winter we cooperated with Saskatchewan Department of Agriculture & Food, PFRA and local ADD boards on a number of direct seeding workshops. These workshops emphasized the five agronomic pillars of direct seeding:

1) Crop Rotation
2) Residue Management
3) Fertility
4) Weed Control
5) Seed Placement

These pillars are also emphasized in the "Direct Seeding Manual" distributed by PAMI and SSCA.

It is evident from my travels this summer that any weak pillars could reduce the success of a direct seeding program.

1) Crop Rotation

Direct seeded wheat suffering from tan spot and septoria.

This wheat was direct seeded into a field that had been wheat the past three years. Its development has been slow due to the cool temperatures, moist conditions and damage from a hail storm. It is now suffering from the diseases of tan spot and septoria.

The most practical way to reduce disease risk in a direct seeding system is by crop rotation. When crop residue is left on the soil surface, the risk of disease increases because the residue improves the survival of the disease organisms. If the same crop is grown again, the disease organisms will likely be present in greater numbers. The risk is less in drier areas of the province because it is more difficult for the organisms to survive.

2) Residue Management

The straw in this chemfallow field was not chopped and spread properly. Excessive plugging was experienced during seeding, resulting in bunching of straw.

Residue management is where the direct seeding system starts. Straw and chaff that are not evenly chopped and spread will cause nutrient deficiencies, poor seed placement and equipment plugging. The shank spacing rule for stubble height and straw length (straw no longer than the shank spacing) is especially true for direct seeding into chemfallow, since its residue is lighter and more easily raked up by a machine.

Problems experienced direct seeding into chemfallow.

3) Fertility

Flax destroyed by excessive seed placed fertilizer.

This bare field is actually direct seeded flax (note the lone plant) that had 30 lb/ac of nitrogen (liquid) placed with the seed. The excessive rate of nitrogen has wiped out the crop.

Soil fertility has become very challenging, especially for producers who desire low disturbance, one pass seeding. Crop fertility requirements do not change when direct seeding, and neither does seedling tolerance for seed placed fertilizer. Some producers have successfully exceeded the provincial seed placed fertilizer limits of 25 lb/ac urea for grains, and 9 lb/ac (not urea or ammonia) for oilseeds. However, remember that local conditions such as moisture, soil texture, organic matter and salinity are important.

Sidebanding during seeding is an option, but draft requirements will increase (so will soil disturbance). It is also important to check that the opener is functioning the way it was advertised. Other options of fertilizing include fall banding, broadcasting, dribbling and nesting (spoke wheel applicator).

4) Weed Control

Quackgrass and foxtail barley competing with the crop.

An emerging crop should have as little weed competition as possible. This can be achieved by an effective chemical burn off, or by direct seeding with equipment that also provides tillage action. A preseeding application of only 2,4-D has not controlled the quackgrass and foxtail barley in this field of wheat.

Remember to plan your herbicide rotations. This field had lentils and Edge in 1992. Genesis wheat that was direct seeded in early May of 1993 was thinned out, likely due to chemical carryover. The cool fall and spring resulted in slower breakdown of the product. This problem is not a result of direct seeding, as it also occurred on some conventionally seeded fields.

Crop thinning due to suspected Edge carryover.

5) Seed Placement

Poor seed placement.

These peas were seeded too shallow, due to poor penetration of the opener and seed bounce from the air delivery system. There was very little soil over top of some of the seeds, while others had no soil covering them. Emergence was patchy, but the crop has since filled in.

Over packing in a wet clay soil.

This wheat was direct seeded into a very wet clay soil. Over packing caused the seed furrow to dry out, resulting in delayed emergence and a thin stand.

If nothing else, all this talk about direct seeding has resulted in record numbers of farmers scratching around their fields to check seed placement. The general rules for seed placement are:

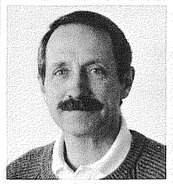
a) place the seed on a firm and moist seedbed (hopefully shallow in a direct seeding system)

b) don't put straw, chaff or excessive fertilizer in the seed furrow

c) cover the seed with soil

d) pack the soil over the seed (but don't pack it harder than the soil below the seed).

Remember to pay attention to all five pillars (crop rotation, residue management, fertility, weed control and seed placement) in your direct seeding program. Everyone is learning about direct seeding this year. By starting small we can learn from our mistakes without putting the entire operation at risk. If you've had an experience you'd like to share, please give me or one of the other soil conservationists a call.



Rotations: The Lost Art? Or Rediscovered Secret To Good Farming?

By Bob Linnell
SSCA S.E. Regional Soil Conservationist

With the declining realized returns from wheat sales on the minds of a large number of prairie farmers, comes the revelation that they have to do something about their particular situation in order to survive on the farm. The economic returns on wheat are no longer sufficient to support them in the fashion to which they have become accustomed, and in fact the financial gurus are more than ever demanding a logical, planned approach to farm management.

For about the fourth time in a century, the term rotations seems to hold at least some of the answers to the present day problems of farm economic and agronomic decision making. Increasingly, growers see rotations as one of the basic elements in long term crop management programs. Rotations offer distinct advantages in good soil conservation planning, particularly in extended cropping and continuous cropping situations. In fact, rotations have become the salvation of many farmers faced with economic disaster in other parts of the world, such as the farmers of Europe. Farmers in that part of the world responded to artificially high prices on cereal crops by trying to grow them continuously, and without a "break" crop, resulting in massive build-ups in fungal diseases. Rotations were the answer.

In the prairie provinces and elsewhere, the advent of soil conservation practices such as the rapidly increasing technique of direct seeding, have included the much championed "good farming" practice of crop rotations. Nearly 15% of Saskatchewan farmers now utilize direct seeding on some portion of their farm, and with it they have taken the time to study and learn the right way to do it. The other important keys to success in direct seeding include proper fertilization to support the crop, adequate weed control prior to seeding as well as "in crop". Machinery that gives proper seed-to-soil contact and depth control is another essential element in the chain. One of the most important mechanical practices is to be sure to achieve adequate spreading of crop residue over the entire width of harvest machine cut.

Rotations can take a number of forms. They may include rotations between crop kinds, herbicides to prevent resistant weed development, and different fertilizers to ensure good soil management.

Odd how rotations seem to be the rediscovered answer to many of our problems. Whether they are too much cereal crop residue, disease build up, herbicide resistant weeds, changing/declining economic value of crops. Rotations are also important for soil moisture conservation, soil structure building, and they just make good sense in a soil conservation plan to ensure the health of our farm, the land and the environment for the future.

The Status Quo is Not an Option: Uncertainties of Change

By John J. Kiss
SSCA Executive Manager

Not unlike those farmers pondering a change to a direct seeding or minimum tillage system, the SSCA is also planning for the uncertainties of change. As of August 31, 1993 many SSCA staff members will be moving on to new responsibilities and challenges within and beyond the SSCA.

Since January 1990 when we began serving farmers on a provincial scale, we have operated under a contract with the provincial government. The funding under this contract was to have been used by March 31, 1993, but like the farmers we work for - we cut corners, saved and worked hard to get support from industry. The planning paid off as we saved enough money to keep most staff paid and functional until March 31, 1994.

As of right now, our only certainty is that our past source of core funding for direct seeding programs and other activities will be expended by March 1994. Not to be daunted by the possibility of poverty and the uncertainties of change, the SSCA Board has continued to plan for a 1994 field program.

The media and others involved in the agricultural industry in Saskatchewan acknowledge that Saskatchewan farmers are being recognized as the world leaders in the adoption of direct seeding technology. Beginning with the SSCA Direct Seeding Workshop in Prince Albert in 1991, we are proud of the fact we have been part of changes taking place in this province. The adoption of direct seeding technology now gives many Saskatchewan farmers a distinct advantage. Our hats are off to those of you who have been willing to risk the uncertainties of change.

The interest and movement of Saskatchewan farmers to reduce tillage and direct seed is not only an opportunity for farmers, but for the province to increase the profitability of agriculture. In 1992 direct seed and reduced tillage acreage was estimated at 11% of cropland area (3.5 million acres). 1993 projections are for this to increase to 17% of cropland area or 5.5 million acres (a 56% increase). It is clear that the potential for increased acceptance is enormous. On a province-wide basis, if 1/3 of Saskatchewan's total cropped area (33 million acres) was converted to direct seeding, profitability could be increased by $4 -$20 per acre, or $44 - $220 million overall.

The Executive Board Members have worked hard (have even been a bit — well aggressive — at times) over the past year to secure continued funding. Among other things, some may accuse us of being pushy in promoting the causes of the SSCA and continued direct seeding programs for Saskatchewan farmers. We can live with the fact that it is impossible to please everyone.

Like the Saskatchewan farmers they represent, the SSCA Board of Directors are inherent "risk-takers". They are not only prepared to take risks in their farming operations, but also for the cause of soil conservation. We are continuing to actively pursue several options for funding our direct seeding and soil conservation information programs in the future.

Industry must play a larger role in supporting the agricultural changes we have been promoting. While some individuals may have cause to be cynical about industry involvement, I must give credit to true industry leaders like Monsanto for providing substantial support for our activities without attempting to influence or interfere in SSCA decision making or activities. Monsanto's assistance and leadership in both good and bad times is noticed and appreciated. Additional leaders in the agricultural industry include Flexi-coil, Concord, Bourgault, Morris, Westco Fertilizers, Dow Elanco, Ducks Unlimited, Sask. Inst. of Pedology and the Sask. Wheat Pool. We appreciate and look forward to their continuing support and participation in our future activities.

If the SSCA is to be successful in promoting direct seeding and soil conservation in the future, we will need the support and cooperation of not only SSCA members, but industry and governments as well. We will definitely be a different looking soil conservation extension organization come April 1994, but like the Saskatchewan farmer who adopt direct seeding and make the most of the uncertainties, the SSCA will have a definite competitive advantage.

Soil Conservation in the East Central Region

Where we were and where we are:

By Juanita Polegi
SSCA E.C. Regional Soil Conservationist

"We can't get this done! We need more time!" Those comments were heard by the East Central Regional Conservation Team in each of the districts in January and February of 1990. The districts' Save Our Soils programs had to be ready for the field by April and District ADD Boards and SOS were overwhelmed by the task that lay ahead of them. But get it done they did!

Due to the committed efforts of committee members and Soils Technicians, all 8 districts in the Region were able to offer their producers an opportunity to participate in the SOS program. In the spring of 1990, field shelterbelts were planted, forages seeded, fields worked with the wide blade and 2,4-D sprayed to control winter annuals. Tours of the various plots were held in the summer. Once harvest was complete, the committees and Technicians turned their attention to the winter extension season. Meetings and seminars were held, newsletters mailed and the interest in soil conservation and the SOS program grew. Year one of SOS was deemed a success.

Year two of SOS, the program received a shot-in-the-arm from direct seeding. The concept of seeding, without first working the land, captured the attention of most producers. The districts scrambled to sign lease agreements with implement dealers for a direct seeding unit. Most districts had waiting lists of producers wishing to try a few direct seeded acres. The summer tours were held again. Most tours provided an opportunity to show the rights and wrongs of direct seeding. Those producers who had taken the time to manage their residue the previous fall and had controlled the winter annuals in the fall or spring had excellent plots to show their neighbours. Those who had not treated direct seeding as a system but just as a method for getting the crop into the ground had some near disastrous plots. Direct seeding had everyone talking!

The districts continued with their newsletters and meetings in the winter. Some of the districts held workshops for first-time direct seeders. Year three of SOS was set to be successful — and it was.

So, where is soil conservation at in 1993 in the East Central Region?

To say that initially, interest in soil conservation in this region was only lukewarm, is an understatement. Seven of the eight districts are in the Black & Moist Black Soil Climatic Zones. We often heard from producers that while they believed Swift Current experienced soil erosion, they certainly did not. And there wasn't a whole lot of interest expressed in planting field shelterbelts. Again, we often heard the comment "I just finished clearing all my land of trees. Why would I want to replant them?"

Many of these same producers have learned to recognize the evidence of soil degradation on their own farms. They either eventually participated in SOS or took measures on their own to reverse the degradation. More and more producers are saving one tillage operation by controlling their winter annuals with herbicide. The use of glyphosate has increased dramatically. The miles of field shelterbelts planted have also greatly increased. And of course, direct seeding has the potential to change our farming methods.

The Save Our Soils program in the East Central Region can be viewed as a success. The co-operation of the representatives of the various agencies and departments within the Regional Conservation Team together with the ADD Boards and SOS Committees ensured that all the producers were made aware of the SOS program. Representing the SSCA, I have been privileged to work with so many dedicated people. It's been exciting to watch as the interest in and knowledge about soil conservation has grown.

The Saskatchewan Soil Conservation Association has played a major role in co-operating with various departments and agencies to deliver an extension and awareness soil conservation program. The Association can be proud of its contributions to the success of the Save Our Soils program and overall general soil conservation awareness.

Bredenbury School tour measures residue.

Wide Blade Demo day.

 # 19 ADD Board tour.

Events And Activities Carried Out In The East Central Region 1990-93

1) Technicians' Field Day

2) On-Farm Visits

3) District Tours

4) School Presentations/Field Days

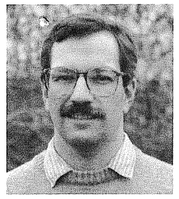
The SSCA Annual Meeting was held in Yorkton, February 1990.

Membership in SSCA from the East Central Region has doubled since January, 1990.

The first director of SSCA from this region was Roger Kaeding of Churchbridge. His successor was Fred Phillips of Yorkton. Dave Thompson, of Kelliher, now serves in that capacity.

The recipients of the 1993 SSCA and Western Producer Conservation awards hail from this region. Bernie Niedzwiedz, of Wynyard, was recognized for his efforts at conservation farming. The Foam Lake and District Marketing Club received the Conservation Group Award.

In the winter of 1993, 13 Direct Seeding Workshops were held around the region with over 300 people in attendance. Over 250 SSCA/PAMI manuals were distributed by this office.



South East Director Profile

- Paul Carles
- Married to Maureen
- 4 children
- Farms near Radville
- Dark Brown soil zone
- Cereals and oilseeds

Q: How long have you been a member of the SSCA?

A: I can't remember the exact date when I became a member, but I think it was fairly early after the SSCA started.

Q: When did you become a director?

A: I was approached about year ago. Then I got appointed to the board, I think it was September and my first meeting was in October.

Q: What prompted you to get involved with the SSCA?

A: When I was approached I just thought about it for a while. Soil conservation was an important thing to me and I thought it was a good opportunity and decided to give her a whirl.

Q: How long have you been practising soil conservation?

A: We started, it must be about 10 or 12 years ago. When we started farming, I can remember we were almost half and half. The first field we ever seeded was a summerfallow field. We direct seeded it with a 620 International double disc drills because it was a dry year and we were scared to work it. That field worked out excellent, it yielded about 5 bushels more than the rest and that got us started. From there we purchased 2200 Versatile Drills and direct seeded. We ran into all the problems with the straw and the trash and went through all that grief. Now we've gone to the Seed-O-Vator.

Q: Direct seeding is a big component in your operation and soil conservation plan. Is there anything else for soil conservation you're doing there?

A: Earlier on, when we had a little bit of summerfallow, we went through all the things of barrier strips and now any summerfallow that we do have is mostly chemfallow. We haven't planted any rows of shelterbelts yet, but we've got grassed runways.

Q: What are your objectives with soil conservation and have you achieved them?

A: We did have our land blow quite bad. After that year, I made up my mind that it wasn't going to happen again. You can see pictures of blowing and you can hear people talk about it, but until it actually happens to you, it's really a scary sight. Until you see your land blowing up on the edges of the summerfallow field, blowing up on the edges of the stubble fields and I know when we went out that year, we had to go out with graders and blades and push the soil back into the summerfallow and level it out. It was a real mess. We had an old discer sitting there and I can remember it was half full of dirt. It was a really scary mess. Ever since then, I said that wasn't ever going to happen again. I think that was the biggest reason we started direct seeding and then we got into it and we saw that we could actually make more money at it with the Seed-O-Vator. Now in the spring we're just seeding directly, we're not spraying, we're not preworking, it's a one operation deal. We've got one machine to go over a lot of acres and it's just working out perfect. The other improvement that I've really seen this year, is with our solonetzic soils and our hard pan areas. Over the years, we've found those spots getting smaller and smaller, and I thought, it must be just the way the rain is, or some other factor. But this year we rented some land right close to us, and it's good land, and the farmer is a good farmer, but he was on half and half and worked everything. When we pulled our air seeder into it, I couldn't believe the hard spots. I'd forgotten what solonetzic soils were all about. We had hard spots and things popping out of the ground and you could see those big clumps. I thought you know, ours had disappeared, then I thought, well when we went into there, it was hot and windy for those couple of days and I thought maybe ours is going to be like that too when we get back to it, maybe we just haven't had those kinds of conditions. When we got back to seeding ours, it was just hard to believe the difference direct seeding has made on the soil.

Q: Why do you think that more people in the province aren't considering some measure of soil conservation or do you think the majority of people are?

A: When you've done something a certain way all of your life it's really difficult to change. People who are used to pre-working and working their summerfallow, it's easy for them to just jump on the cultivator, go prework and then seed it. It's easier for them to just pull out their cultivator, they don't have to worry about mixing spray, they don't have to worry about the wind. It's just more convenient for them and I think that's the biggest reason why the older farmers aren't doing it. They're established and they're set in their ways. I can see a lot of big change coming for the younger farmers. A growing number of them are going to more direct seeding and soil conservation. Even some of the older farmers are considering it. The perfect example this year, one neighbour close to me tried direct seeding this year for the first time. I just happened by and stopped to talk to him, well he was just sick. He felt like his seeding job didn't look good. He'd just pulled his harrows into his field and was planning to harrow it because he had plugged once by the road and thought it looked like heck. I went in the field with him and I dug and looked where the seed was and he already had the seed plenty deep and I said, well you're going to harrow this and it'll just be a worse mess and then you are going to have problems. I told him to just leave it. So what if it doesn't look good. You're not in a beauty contest here. He did end up leaving it and it looks just great. He's just really tickled that he did leave it.

Q: Do you think that the Association is doing a good job of convincing non-conservationists and also people that are trying it initially, that soil conservation and direct seeding are something they should consider?

A: It is a big job to try and convince people and I think the SSCA is going about it the right way. The show we had in Moose Jaw was a big help. Just getting farmers talking to other farmers is a good step. I know being involved in the SSCA, people have asked me a lot of questions, and not only about the direct seeding, but about trash management and I think they're working at it real hard. I think we're doing a good job. I don't know in the future how many direct seeding demonstrations and direct seeding meetings you can have, but it's come a long way.

Q: Do you see the governments', both federally and provincially, taking a firmer stand on soil conservation and linking future programs to soil conservation?

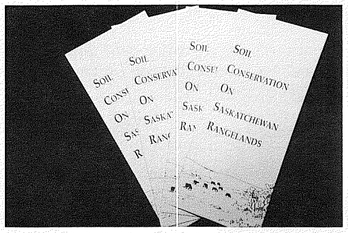
A: I'm not sure how focused the governments are on soil conservation. Maybe it's in the back of their minds and it's going to be whatever the public pressures them into doing. I would hope that, as farmers, we could get our act together and get away from the need for any compliance programs, like they have in the States. That's one of the reasons why I got into the SSCA; I wanted to get farmers pointed in the right direction before we get into something that's forced on us that we didn't want. As farmers, we can do what we want to do and still be moving in the soil conservation direction and do a good job of it.

Q: What do you think some of the benefits of being a member of the Association are?

A: Well, I think as far as being a member, you're in touch with other people that are involved in soil conservation and doing the things that you're trying to do. The experience of talking to people at the annual meeting and demonstrations allows you to ask people how they solved a problem with direct seeding or chemfallow. I think that's a big component.

Q: Do you think it's the economics of the time that are contributing factors in getting people to consider soil conservation and direct seeding or is it an awareness?

A: It's probably a combination of the two, but I want to say it's an awareness of the soil, but I think it's money. People are trying to cover more acreage with the same machine and looking at ways to reduce costs. Direct seeding just kind of fits into that and the soil conservation is a side benefit.



Soil Conservation on Saskatchewan Rangelands

Soil erosion and degradation are problems which we usually tend to associate with annually cropped lands. However, these problems can also occur on rangelands.

Saskatchewan rangelands account for approximately one quarter of our agricultural landbase. Poor management of this resource can lead to a loss of forage production, decreased soil organic matter, degraded wildlife habitat, increased soil compaction and increased exposure of the soil to wind and water. A new brochure has been developed to present some of the problems associated with overgrazing on rangelands as well as management practices that can be used to help achieve the conservation of soil, water and vegetation. The brochure, **Soil Conservation On Saskatchewan Rangelands**, is available from the Saskatchewan Soil Conservation Association, the Society For Range Management Prairie/Parkland Chapter and PFRA. For more information, call the SSCA Regina office at (306) 787-0558.

Moose Jaw Field Day

Hub of the 1993 Soil Conservation Field Day held at the Moose Jaw Airport from the air.

Air delivery equipment was not the only direct seeding equipment on hand.

Hub of the 1993 Soil Conservation Field Day held at the Moose Jaw Airport from the ground.

Residue management demos where well attended.

The latest in direct seeding equipment makes a row of "Big Iron".

Checking the seeding depth or did somebody loose a contact lens.

Direct seeding equipment is less daunting when seen from the air.

Plots seeded May 12th & 13th made comparison simple to do.

More direct seeding "Big Iron".

June 15th direct seeded chemfallow.

The Soil Conservation Field Day on June 15 was a great success, but the learning hasn't stopped yet! The plot signs are still up along the main access road into the airport. There is also a box containing field day information located at the northwest corner of the field. Feel free to stop in and check the crop conditions on the various plots throughout the growing season (please do not drive on the field). Remember, your own conclusions are the most valuable ones!

1993 Soil Conservation Field Day May 12 & 13 Direct Seeding Demonstration Plot Notes

Seeded with Katepwa Wheat with WESTCO 34 - 17 - 0 fertilizer.
(max. rate 40 lbs. N & 20 lbs P per acre)

North

PLOT 1	PLOT 2	PLOT 3	PLOT 4	PLOT 5	PLOT 6	PLOT 7
Swivel Mounted Acra Drill Unit (Acra Plant)	**John Deere 610 Seeding Tool**	**CONTROL**	**New Noble 4000 Multi-Tool**	**John Deere 750 No Till Drill**	**Bourgault 8800 Cult/Air Seeder**	**Concord 4010 Air Till Drill**
25 ft unit 4 machine passes 9" shank spacing	41 ft unit 3 machine passes 10" shank spacing	Discer Seeded harrow packed	37.5 ft. unit 3 machine passes 9" shank spacing	15 ft. unit 7 machine passes 7" shank spacing	32 ft. unit 3 machine passes 9" shank spacing	40 ft. unit 3 machine passes 10" shank spacing
Field Observ. 1) Some depth control problems on wings 2) Good residue clearance with no clumping	**Field Observ.** 1) Plugged once on chemfallow 2) Some clumping of residue		**Field Observ.** 1) Plugged more than once on chemfallow 2) Some clumping of residue	**Field Observ.** 1) Good residue clearance with no clumping	**Field Observ.** 1) Plugged once on chemfallow 2) Some clumping of residue	**Field Observ.** 1) Some minor clumping of residue
1992 Chem Fallow Stubble						
1992 Wheat Stubble						
1 3/4 bushel seed 0-1" seeding depth 88 lbs./ac. fert. seed pl.	1 3/4 bushel seed 1/2 - 11/2 seeding depth 100 lbs./ac fert. seed pl.	1 3/4 bushel seed 2 1/2" depth 120 lbs./ac. fert. seed pl.	1 3/4 bushel seed 2" seeding depth 115 lbs./ac. fert. seed pl.	1 3/4 bushel seed 2" seeding depth 94 lbs./ac. fert. seed pl.	1 3/4 bu. seed 1 1/2 - 2" seeding depth 120 lbs./ac. fert. seed pl.	1 3/4 bushel seed 1 1/2" seeding depth 120 lbs./ac. fert. seed pl. 4 - 6" spread of seed & fertilizer
Special Features • 15" Notched • Coulter Openers	**Special Features** • Knife Opener • Dutch Packers		**Special Features** • Hoe Openers	**Special Features** • Disc Openers • Centre Band Cap	**Special Features** • 3" Spoon Opener • adj. Packing Pressure	**Special Features** • 6" LD Sweep • Pneumatic Packing

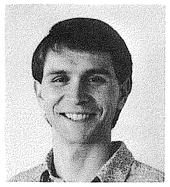
PLOT 8	PLOT 9	PLOT 10	PLOT 11	PLOT 12	PLOT 13
Harmon 3680 Air Seeder	**New Noble 9000 Seed-O-Vator**	**Haybuster 8000**	**Seed Hawk Zero Till Seeder**	**Morris Maxim Air Drill**	**Flexi-coil 5000 Air Drill**
36 ft. unit 3 machine passes 8" shank spacing	30 ft. unit 3 machine passes 14" shank spacing	8 ft. unit 15 machine passes 10" shank spacing	33 ft. unit 3 machine passes 9" shank spacing	34 ft. unit 3 machine passes 7.2" shank spacing	33 ft. unit 3 machine passes 9" shank spacing
Field Observ. 1) Plugged more than once on chemfallow 2) Some clumping of residue	**Field Observ.** 1) Plugged once on chemfallow 2) Some clumping of residue	**Field Observ.** 1) Good residue clearance with no clumping	**Field Observ.** 1) Plugged more than once on chemfallow 2) Ran out of seed before finishing plot 3) Higher N & P fert. rates than other plots 4) Clumping of residue	**Field Observ.** 1) Plugged more than once on chemfallow 2) Some clumping of residue	**Field Observ.** 1) Some minor clumping of residue
1992 Chem Fallow Stubble					
1992 Wheat Stubble					
1 3/4 bushel seed 1" seeding depth 2 1/2 " fertilizer banded Paired Row Seeding 94 lbs./ac. fert. seed pl.	1 3/4 bushel seed 2" seeding depth Paired Row Seeding at 7" spacing 30 lbs./ac. fert. seed pl. 90 lbs./ac. fert. side band	1 3/4 bushel seed 1 1/2" seeding depth 3" wide seed band 120 lbs./ac. fert. seed pl.	1 3/4 bushel seed 3/4" seeding depth Liquid Fert. 21 gal/acre placed 55 lbs. N & 25 lbs. P/ac. 1" below & 1" to side	1 3/4 bushel seed 1 1/2" seeding depth 90 lbs./ac. fert. seed pl.	1 3/4 bushel seed 1 - 1 1/2" seeding depth Double Shoot System 120 lbs./ac. fert. 1" to side & 2" below seed
Special Features • Eagle Beak Opener • Adj. Depth for Fert.	**Special Features** • 16" Shovel on an Edge on Shank • Live Rod	**Special Features** • Hoe Opener with Cutting Coulter	**Special Features** • Variable Packing Press • Liquid fertilizer side banded	**Special Features** • Knife Opener with Edge on Shank	**Special Features** • Flexi-coil Double Shoot Opener

Field Preparation Notes:

1) The May seeded demonstrations were on chemfallow and standing wheat stubble. The 1992 wheat crop (Chemfallow was 30 bu/acre and the 1992 wheat crop (standing stubble) was also 30 bu/acre.
2) Rustler, provided by MONSANTO, was the product used for the chemfallow and the pre-seeding burndown operations.
3) On the chemfallow plot, only the straw was spread at harvest. Straw length was 10 - 14" long and mostly loose and brittle at the time of seeding.
4) The standing wheat stubble plot was harvested using a Gleaner M2 combine equipped with a factory made straw chopper and extended fins. Chaff was spread with an A & M Chaff Spreader provided by CAY SEEDS of Kinistino, Sask.

Something to look forward to: The SSCA is already planning for a 1994 Soil Conservation Field Day. If you have any suggestions or comments, please let us know. We hope to see you again.

Central Roundup



PFRA Shelterbelt Centre Field Day a Success

By Chris Zabek
SSCA Shelterbelt Information Officer

It's the summer season again, or at least it should be according to my calendar. During this time, many people try to find some interesting and informative events to attend. If there is something for the whole family to get involved in, even better. Approximately 2500 people found the PFRA Shelterbelt Centre Field Day, at Indian Head, on July 8 to be just what the doctor ordered.

The Shelterbelt Centre staff gave guided tours of the nursery, taking the mystery out of exactly how the trees that we plant on our farms are produced. They also pointed out new tree species and showed visitors the beauty of this treed island in the prairies. The tour was an extremely popular item on the agenda, attracting most of the people in attendance at the Field Day.

In the trade show area, visitors were able to peruse a wide variety of displays covering such topics as shelterbelt establishment & maintenance, wildlife, agroforestry and farm woodlots, fruit production, diseases & pests, range management, riparian areas, woodcrafts and much more. Demonstrations on grafting and pruning techniques were mobbed by eager horticulture enthusiasts. The gourmets in the crowd were able to sample several different tasty food products from various shelterbelt trees. Mongolian cherry, buffaloberry and sea-buckthorn jams and jellies all met with approval, as did Manitoba Maple syrup.

Wood-Mizer Canada West conducted a portable sawmill demonstration using logs from various shelterbelt species. This enabled people to view both the operation of the mill itself and the different types of wood.

Surprisingly enough, even the weather cooperated. Education and entertainment in the sunshine. What more could anyone ask?

What's New in Soil Conservation Education?

By Yvette Crane
SSCA Soil Conservation Educator

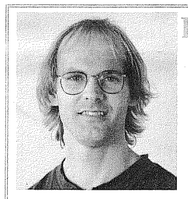
The biggest news this issue is that **Project Soils**, SSCA's soil conservation education program for teachers of Kindergarten to Grade Twelve and their students, is in final printed form. Already over 200 Saskatchewan teachers have taken a workshop to receive a copy for classroom use. Eight more workshops are booked from now to February, 1994.

The response to the program has been overwhelmingly positive. Inquiries have come in from all over Canada, and from as far away as Australia! Here in the province, the program's acceptance has been sealed - the provincial Department of Education (Saskatchewan Education) has listed **Project Soils** as a "Key Resource" in its new Science Curriculum Guide for Grades 6 to 9.

If you would like to know more about **Project Soils**, and how to get teachers in your area involved, give me a call. Anyone interested is also welcome to attend the **Project Soils** workshop at the Annual Meeting and Conference in Lloydminster in February, 1994. Please let me know in advance if you are planning to attend.

Other plans for the 1994 Conference include holding the third Student Environmental Challenge. As with last year's Challenge, one school from each of the six regions of the province will be selected to participate. They will research and present on a topic set by the SSCA related to soil conservation. Students and their teachers who participated last year found it a worthwhile and enjoyable educational experience. If you know of a school who would like to get involved, contact your SSCA Regional Conservationist, or me in Regina. Look for the Student Challenge displays at the Conference, and be sure to drop by the presentations on Monday afternoon.

For information on these, or any other of the SSCA's education programs, I may be reached in Regina at 787-0555.



Economic Facts, Stats and Figures

By James Lokken
SSCA Soil Conservation Specialist

SSCA developed and submitted a brief in April to Agriculture Canada's legislated environmental review of Crop Insurance. In the document, SSCA notes that while "Crop Insurance is a useful tool for managing agricultural production risk and stabilizing farm incomes...[it] is one of a group of powerful agricultural programs which do not adequately address vital environmental issues. In common with GRIP, NISA and other support programs, Crop Insurance does not explicitly require or reward positive environmental action from farmers. In certain circumstances it impedes the adoption of conservation practices."

The SSCA brief continues by stating that "major concerns ... with the present Crop Insurance program in Saskatchewan include:

- the insuring of annual crops grown on environmentally fragile land.
- negative impacts on crop choice, rotations, diversification and the realistic assessment of pest and weather risk.
- the poor design and delivery of forage insurance which may distort the relative benefits of growing forages versus annual crops.
- the opportunities for some farmers to benefit from use of inappropriate practices and levels of inputs.
- the inability of present Crop Insurance methodology to adequately measure and reflect the long term benefits of soil conserving practices and the long term damage resulting form soil degrading practices."

SSCA points out "several positive characteristics of the present Crop Insurance program including:

- risk reduction which generally encourages appropriate land and input use by most farmers.
- coverage on an increasing number of crops which supports diversification.
- individual coverage which over time should discourage inappropriate practices such as the annual cropping of marginal land and the use of inadequate inputs and soil degrading practices."

The SSCA brief concludes by stating that Crop Insurance may not always be the most suitable program for promoting specific environmental goals because of its obligation to provide actuarially sound insurance. However, it should be coordinated with other government programs to support the adoption of appropriate conservation practices on the farm.

Copies of the brief may be obtained by contacting SSCA's central office in Regina.

Economics of Burning Crop Residues.

With harvest comes the urge to save time and money now. One way in which farmers mistakenly often try to save is by ignoring crop residue management. Straw and chaff handling equipment costs money, residue problems next year seem a long time off compared to the immediate pressures of harvest, and the fall often seems to offer plenty of opportunity for post-harvest cultivation. Many farmers still view stubble burning as the cheapest and most labour-saving solution to troublesome residues.

Burning may look like it offers some short term economic benefits, but the costs eventually outweigh these benefits. Burning may save time and cash expenses now. It may also result in a small immediate increase in available nitrogen and phosphorus and destroy some pests or disease organisms.

However, research by Agriculture Canada shows that from 32 - 76% of the nitrogen contained in straw is lost in stubble burning. Most disease organisms are affected very little by a burn because the heat does not penetrate deeply into the soil. Rotating crops is a more appropriate method of controlling disease.

Burning reduces soil microbial numbers and activity and the effects are long term with recurrent burning. Repeated burning reduces the amount of organic matter in the soil and the ability of the soil to convert this material to plant available form. Susceptibility to water erosion and compaction also increases and water infiltration decreases.

In one 17 year Agriculture Canada experiment in Saskatchewan, annual burning did not decrease grain yields. This experiment was carried out on very fertile soils. Other experiments have shown that yields do decrease with repeated burning (up to 25% compared to neighbouring unburned fields), and that fertilizer additions cannot fully compensate for this loss of soil fertility.

There are about 25 pounds of nitrogen per acre in the straw from a 40 bushel wheat crop. If 32 - 76% of the nitrogen is lost in a burn then, in nitrogen alone, there is a dollar loss of $1.50 to $4.00 per acre. The more complete the burn the greater the loss will be. In addition, there is the loss of erosion protection, water conservation potential and new contributions to organic matter. Some researchers have concluded that the total loss from stubble burning may actually cost $15 per acre in lost nutrients, soil structure and erosion protection.

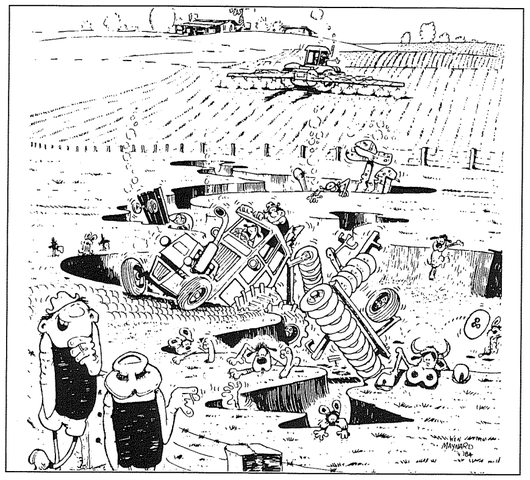
There are other costs which farmers who burn generally have been exempt from paying up until now. These costs are termed "externalities" in the jargon of economists because they are offsite and not easily charged to the activity which incurs them.

More than 200 pounds of soot, carbon monoxide and methane are released into the atmosphere per acre of burned crop residue. Hazardous driving and health conditions are often created by smoke. The release of carbon dioxide contributes to greenhouse gases. All of these problems have economic costs which society will eventually trace back to farmers. Farmers may pay with more regulation of their activities as well as financial penalties for individual farmers who burn.

Burning of crop residues should be relegated to the growing list of "past" agricultural practices in Saskatchewan.

Soil Smart - For Young Conservationists

COLOURING CONTEST RESULTS



We received some great entries for the Spring issue! Thanks to all who entered, and especially to those who thought up some great conversation between the two Australian farmers!

The following are the artists who submitted colourings, and some of the things they had the two farmers saying. (See picture, at left.) Thank you all for your hard work!

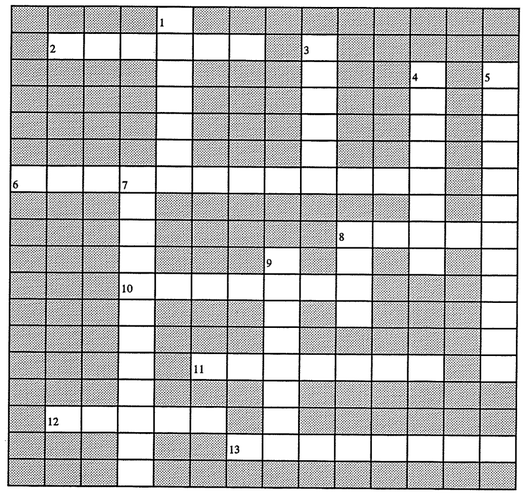
Colin Beaulieu; Danielle Beaulieu; Janine Beaulieu;
Toni Bochek: *"My neighbour hasn't heard of no-till!"*
Jeremy Hopkins: *"These Americans. They be strange, mate."*
Holly Steinley: *"Gee, old Scott's having trouble with his tillage these days!" "Maybe he'll learn old tillage habits die hard."*
Kendra Topola: *"Maybe we should have done what our neighbour did!"*

First place goes to - **6 and under:** Colin Beaulieu of Estevan Saskatchewan (5 years old); **7-8 years:** Danielle Beaulieu of Estevan Saskatchewan (8 years old); **9-11 years:** Toni Bochek of Hodgeville, Saskatchewan (9 years old), **12-14 years:** no entries.

This time we have something new . . . a Soil Conservation Crossword Puzzle!

Good luck with it, and watch for the colouring contest in the next issue of "Soil Smart"!

CONSERVATION CROSSWORD



CLUES

Across

2. Growing perennial forages (feed) for these animals is an important soil conservation method.
6. Soil _____ means taking care of the soil today so that it will still be here in the future.
8. We need this, but it can also wash our soil away.
10. _____ is the wearing away of the soil by water or wind.
11. Too much of this is not good for the soil!
12. You might see one of these if water erosion is very severe.
13. These are vital to waterfowl and other wildlife and important in soil conservation.

Down

1. Leaving this after harvest provides organic matter and protects the soil.
3. _____ seeding means planting the seed into last year's stubble.
4. Is sometimes incorrectly called "alkali".
5. These rows of trees can protect a field for a distance of up to 20 times their height.
7. The soil on these bare fields is easily blown away by the wind.
8. This is what causes dust storms, especially on bare fields.
9. _____ shares the land with us. Soil conservation helps them too!

(answers on page 14)

How Long Can You Afford Not to Practice Soil Conservation ?

1994 DIRECT SEEDING WORKSHOP: DESIGNING A SUSTAINABLE AGRICULTURAL SYSTEM.

1994 Saskatchewan Soil Conservation Association Annual Workshop, Meeting & Trade Show

February 14 & 15, 1994

Lloydminster Exhibition Grounds - Lloydminster, Saskatchewan-Alberta

In cooperation with District #35 ADD Board and the Saskatchewan Department of Agriculture & Food

The Saskatchewan Soil Conservation Association would like to thank the following sponsors for their assistance in making this event possible and for their commitment to Soil Conservation in Saskatchewan

Bourgault, Concord, Flexi-coil, Monsanto, Morris, Saskatchewan Wheat Pool

Conference Proceedings Available

Monday, February 14

ALL TIMES QUOTED FOLLOW ALBERTA TIME (Day light Saving Time)

9:00 a.m. to 12:45 p.m.
Workshop Registration and Coffee in the Trade Show Area (Alberta Building).
Coffee Sponsored by: **HOECHST CANADA LTD.**

Workshop Chair: Marv Fenrich, SSCA NW Director, Wilkie, Sask.

Alberta Building

12:45 p.m. Opening of the 1994 SSCA Workshop: Sask. Soil Conservation Association, City of Lloydminster.

1:00 p.m. Keynote Speaker "Why Sustainable Agriculture is Important to Farmers" Bob McNabb, Brandon, Manitoba
2 Concurrent Sessions:
Direct Seeding & Student Education

Alberta Building
Session #1 "The Direct Seeding System" **Session Chair: Ken Sapsford, SSCA WC Director, Perdue, Sask.**

1:30 p.m. Keynote Speaker "Why Direct Seeding Works" Dwayne Beck, Pierre, South Dakota

2:00 p.m. "Planning Crop Rotations for Disease Control" Karen Bailey, Agriculture Canada, Saskatoon, Sask.

2:20 p.m. "Residue Management in the Parklands" Gary Lilge, Valley View, Alberta

2:40 p.m. Questions for Speakers

2:50 to 3:20 p.m. Refreshments in Trade Show Area

Sponsored by: **FARM CREDIT CORPORATION**

Dick Jones Pavilion
Session #2 "High School Challenge"

Session Chair: Yvette Crane, SSCA Soil Conservation Educator, Regina, Sask.

1:40 to 3:00 p.m. 4 Enviro-Student Challenge Presentations

3:00 p.m. Refreshment Break and Student Displays

3:30 to 4:15 p.m. 2 Enviro-Student Challenge Presentations

2 Concurrent Sessions:
Direct Seeding & Student Education Continued

Alberta Building
Session #3 "Agronomics of Direct Seeding"

Session Chair: Paul Carles, SSCA SE Director, Radville, Sask.

3:20 p.m. "Changes in Weed Communities Under Direct Seeding" Doug Derksen, Agriculture Canada, Exp. Farm, Indian Head, Sask.

3:40 p.m. "Zero Incorporation of Herbicides" Ken Kirkland, Agriculture Canada, Exp. Farm, Scott, Sask.

4:00 p.m. "Fertility Changes Under Direct Seeding" John Harapiak, Westco Fertilizers, Calgary, Alberta

4:20 p.m. "Crop Emergence Under Direct Seeding" Guy Lafond, Agriculture Canada, Exp. Farm, Indian Head, Sask.

4:40 p.m. "Practical Farm Experiences with Direct Seeding" Terry Pearse, Tisdale, Sask.

5:00 p.m. Questions for Speakers

5:30 p.m. Refreshments, Cocktails & Trade Show

6:00 p.m. Workshop Banquet (Alberta Building)

Chairman: Mel McCrea, Chairman District #35 ADD Board

6:45 p.m. Soil Conservation Awards
7:00 p.m. Student Challenge Awards
7:15 p.m. SSCA Photo Contest Awards
8:00 p.m. Evening Bear Pit Sessions

#1 "Role of Livestock in Soil Conservation Systems" (Saskatchewan Building)

Chair: Howie Bjorge *chaff collection, forages, pasture management

#2 "Crop Rotations" (Dick Jones Pavilion)
Chair: Blair McClinton *managing diseases and pest in grain, oilseed & specialty crops

#3 "Fertility and Weed Control" (Lounge & Rest Area)
Chair: Garth Patterson *seed placed fertilizer, banding and weed control problems & options

#4 "Modifying Equipment for Direct Seeding" (Alberta Building)
Chair: Garry Meier *successful approaches and experiences with modifications

#5 "Direct Seeding Products and Equipment Forum" (Saskatchewan Building)
Chair: John Kiss *Bourgault, Concord, Flexi-coil, Monsanto, Morris and Sask. Wheat Pool discuss their products, equipment and/or services for soil conservation.

Tuesday, February 15

7:00 a.m. Early Bird Breakfast

Chair: Dean Smith SSCA President-Elect, Success, Sask.
Guests: Alberta and Saskatchewan Provincial Ministers of Agriculture

7:45 a.m. Saskatchewan Soil Conservation Association Annual Business Meeting
Chair: Gerry Willerth, SSCA President, Indian Head, Sask.

2 Concurrent Sessions: Equipment & Teachers' Conservation Education Workshop

Alberta Building
Session #4 "Equipment For Direct Seeding"
Session Chair: Terry Pearse, SSCA NE Director, Tisdale, Sask.

8:45 a.m. "Opener and Packer Design" Gord Hultgreen, PAMI, Humboldt, Sask.

9:05 a.m. "Producer Experience With Equipment Modification"

Norman Maze, Wilkie, Sask. JD Air Seeder
Ron Grosenick, Moose Jaw, Sask. Morris Seedrite
Germain Dauk, Naicam, Sask. IH 7200 Press Drill

9:35 a.m. Questions for Speakers

9:45 - 10:15 Refreshments in Trade Show Area
Sponsored by: **HARMON INDUSTRIES LTD.**

Lounge & Rest Area

Session #5 "Conservation Education Workshop"
Session Chair: Yvette Crane, SSCA Soil Conservation Educator, Regina, Sask.

8:45 a.m. Teachers' Project Soils Workshop
9:45 a.m. Refreshment Break

2 Concurrent Sessions: Forages & Diversification

Dick Jones Pavilion
Session #6 "Forages and Pasture Management"
Session Chair: Dave Bueckert, SSCA Past-President, Tugaske, Sask.

10:15 a.m. "Pasture Management" Mona Lee Kirkland, Sask. Stock Growers Assoc., Unity, Sask.

10:35 a.m. "Rejuvenation of Pasture" Bjorne Berg, Alberta Ag., Vermilion, Alta.

10:55 a.m. "Managing Mixed Forages in a Rotation" Garry Meier, Tisdale, Saskatchewan

11:15 a.m. "Farmer Perspective of Forages" Phyllis Olynck, Canora, Sask.

11:35 a.m. Questions for Speakers

Alberta Building
Session #7 "Diversifying into Specialty Crops & Trees"
Session Chair: Lorne Crosson, SSCA SW Director, Limerick, Sask.

10:15 a.m. "Direct Seeding Lentils & Other Specialty Crops" Gary Schweitzer, Eston, Sask.

10:35 a.m. "Direct Seeding Canola and Peas" Leo Blais, Delmas, Sask.

10:55 a.m."Microclimate Benefits of Shelterbelts" John Kort, PFRA, Indian Head, Sask.

11:15 a.m."Potential for Agroforestry" Howard Fox, PFRA, Melfort, Sask.

11:35 a.m. Questions for Speakers

11:45 a.m. - 1:15 p.m. Lunch in Trade Show Area.

1 Session: Direct Seeding

Alberta Building
Session #8 "Planning Your Direct Seeding System"
Session Chair: Dave Thompson, SSCA EC Director, Kelliher, Sask.

1:15 p.m. "Economics of Direct Seeding" Tom Thorson, Penzance, Sask.

1:30 p.m."Financial Planning for Direct Seeding" Darryl Reynolds, Royal Bank, Saskatoon, Sask.

1:45 p.m."Managing Herbicide Resistance" Mark Goodwin, Manitoba Agriculture, Carman, Manitoba

2:00 p.m."Designing a Direct Seeding System" Lorne Ferguson, Paynton, Sask.

2:15 p.m. Questions for Speakers

2:25 p.m. Special Conference Speaker:
Jim McCutcheon, Homewood, Manitoba
"Conservation Tillage: Another Dimension"

2:45 p.m. Draws for Conference Prizes:

You Must Be There To Win !!!!
Draw Chair: Gerry Willerth & Dean Smith

DRAW PRIZES*:
Fly In Fishing Trip
House Boat Holiday on Lake Diefenbaker
Binoculars (To watch your neighbour cultivate)

* All winners must accept the draw prizes within the limits set by the SSCA. All prizes are non-transferable and have no cash value.

Meeting Accommodations in Lloydminster*

Motel / Hotel Name	# of Rooms Available		Cost**
1)Imperial 400 Phone: 306-825-4400	75	D-	$47
2)West Harvest Inn Phone: 306-875-6113	75	D-	$54.95
3)Tropical Inn Phone: 403-875-7000	75	D-	$54
4)Wayside Inn Phone: 403-875-4404	75	D-	$50

*note "Soil Conservation Meeting" when making a booking. All bookings must made by the registrants and should be made before February 1, 1994.
**plus applicable taxes.
For additional accommodations contact the Lloydminster Tourist Bureau at 306-825-6180 or fax 306-825-7170

For further information on the workshop or the trade show contact:

John Kiss	306-787-0558
Garth Patterson	306-933-5287
Blair McClinton (Trade Show Coordination)	306-446-7650
Yvette Crane (Education Workshops)	306-787-0558
Howie Bjorge	306-825-6470
Marv Fenrich	306-843-2083
Ken Sapsford	306-237-4402

Conservation Education Program

Conference registrants are welcome to attend the education program sessions. Please contact Yvette Crane in Regina at 306-787-0555 (fax: 306-787-0551) if you intend to participate in Tuesday's Project Soils Workshop.

Special Notice for Conservation Groups

If you are planning on attending the conference as a group or are organizing a bus tour, phone Blair McClinton at 306-446-7650. Blair can help you with local organization and pre-registration.

Workshop Registration Fees

Pre-Registration Before February 1, 1994
Single $60
includes: All meals & conference proceedings.
Husband & Wife* $90
includes: All meals & 1 copy of conference proceedings.
*must register together

After February 1, 1994
Single $85
includes: All meals & conference proceedings.
Husband & Wife* $100
includes: All meals & 1 copy of conference proceedings
*must register together

Daily Registration Fees

Day 1 February 14, 1994 $25
*does not include banquet or conference proceedings.

Day 2 February 15, 1994 $30
*includes: Breakfast & lunch only.

Extra banquet tickets $15
Extra copies of Conference Proceedings $15

◆ *AVOID DISAPPOINTMENT* ◆ *REGISTER NOW!* ◆ *LIMITED SEATING!* ◆

Registration Form included on back page of this Prairie Steward