



Government of
Saskatchewan

Annual Report 2002 - 2003

Agriculture, Food and Rural Revitalization

Saskatchewan
Irrigation Crop
Diversification Corporation

Saskatchewan
Our Future is Wide Open

Annual Report

2002 - 2003

Irrigation Crop Diversification Corporation

Annual Report for the twelve months
ending March 31, 2003



Irrigation Crop Diversification Corporation

Delivering “value for money” R&D to Saskatchewan irrigators

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Letters of Transmittal

Regina, Saskatchewan
July 29, 2003

To Her Honour
The Honourable Lynda Haverstock
Lieutenant Governor of the Province of Saskatchewan



Your Honour:

I have the honour to submit the annual report of the Saskatchewan irrigation Crop Diversification Corporation for the twelve months ending March 31, 2003.

Respectfully submitted,

A handwritten signature in cursive script that reads "Clay Serby".

Deputy Premier
Minister of Agriculture, Food and Rural Revitalization

Outlook, Saskatchewan
July 21, 2003

The Honourable Clay Serby
Deputy Premier
Minister of Agriculture, Food and Rural Revitalization

Sir:

I have the honour to submit herewith the 2002-2003 Annual Report of ICDC (Irrigation Crop Diversification Corporation), including the financial statement audited by Lois A. Johnson CMA, all in accordance with *The Irrigation Act, 1996*.

Respectfully submitted,

A handwritten signature in cursive script that reads "Carl Siemens".

Carl Siemens
Chairman, ICDC

Objectives and Purposes of the Irrigation Crop Diversification Corporation (ICDC)

The objects and purposes of the ICDC are as follows:

- to research and demonstrate to producers and irrigation districts profitable agronomic practices for irrigated crops;
- to develop or assist in developing varieties of crops suitable for irrigated conditions;
- to provide land, facilities and technical support to researchers to conduct research into irrigation technology, cropping systems, and soil and water conservation measures under irrigation, and to provide information respecting that research to district consumers, irrigation districts and the public; and
- to co-operate with the Saskatchewan Irrigation Producer's Association (SIPA) and the Minister of Saskatchewan Agriculture, Food and Rural Revitalization in promoting and developing sustainable irrigation in Saskatchewan.

Board of Directors

Directors of ICDC in 2002-03 were as follows:

(# of terms)	Irrigation	Development		Election year
		District (ID)	Area (DA)	
Carl Siemens	Chair	Rush Lake ID	SWDA	2002 (1)
Gordon Kent	Vice Chair	Riverhurst ID	SIPA	Appointed
Ken Plummer	Alternate Vice Chair	Moon Lake ID	NDA	2003 (2)
Darryl McGregor	Director	Consul-Nashlyn ID	SWDA	2004 (2)
John Könst	Director	SSRID	LDDA	2002 (1)
Dale Ewen	Director	Riverhurst ID	LDDA	2004 (2)
Don Fox	Director	Baildon ID	SEDA/SIPA	2003 (2)
John Linsley	Government of Saskatchewan Representative (SAFRR)			Appointed
Vacant	Non District Irrigator Rep.			(0)

Abbreviations:

LDDA	Lake Diefenbaker Development Area
NDA	Northern Development Area
SAFRR	Sasaktchewan Agriculture, Food and Rural Revitalization
SEDA	South Eastern Development Area
SIPA	Saskatchewan Irrigation Projects Association
SWDA	South Western Development Area

The four irrigation development areas are: Northern (NDA), South Western (SWDA), South Eastern (SEDA) and Lake Diefenbaker (LDDA), as defined in ICDC's bylaws.

ICDC directors are elected by district delegates to the annual meeting. Each Irrigation District is entitled to send one ICDC delegate per 5,000 irrigated acres or part thereof. Two directors are elected from LDDA, two from SWDA, and one each from NDA and SEDA. The Saskatchewan Irrigation Projects Association (SIPA) and Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR) are allowed two directors each on the ICDC board. The ICDC board must, by law, have irrigators in the majority.

Staff 2002

By agreement, agrologist and administrative services are seconded to ICDC by SAFRR.

Les Bohrson PAg.	ICDC senior agrologist	Swift Current
Korvin Olfert PAg.	ICDC agrologist	Swift Current
Lana Shaw AAg.	ICDC agrologist	Outlook
Bloomfield Consulting,	Debbie Oram	Central Butte
Amanda Wilson	ICDC agronomy assistant	Swift Current
Marlene Knopp	ICDC administration	Outlook

2002 ICDC Highlights

Except where indicated, all dates refer the 2002 calendar year.

Annual Irrigation Conference 2002 in Outlook

ICDC co-hosts the conference with SIPA. Delegates voted to move the 2002 conference from Swift Current to Outlook. The bearpit session, moderated by Kevin Hursh, was "Infrastructure – Saskatchewan's Hot Potato!"

Irrigation portfolio transferred to Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR)

Both ICDC and SIPA recommended that responsibility for irrigation be transferred to Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR) as it became clear that Sask Water's priorities lay elsewhere. This recommendation was accepted and the transfer to SAFRR was announced October 1.

The push for provincial irrigation policy continues

ICDC has again been actively pursuing irrigation policy development. ICDC has made two formal irrigation funding requests to both federal and provincial governments in March 1997 and again in April 2000. Both have been unsuccessful to this point. Meanwhile, the existing Partnership Agreement on Water-Based Economic Development (PAWBED) ended as did irrigation program funding. ICDC has operated on its members' levy money (\$0.35/acre) ever since.

The entire board met with the Minister Responsible for Sask Water in the Legislative Building on January 9, 2002. This meeting was followed by a joint ICDC/SIPA presentation to the Minister of Agriculture, Food and Rural Revitalization on January 31. The presentation was reprinted in the

February 2002 issue of *The Irrigator*. The ICDC board also met with the Acting Director General of the Prairie Farm Rehabilitation Administration (PFRA), Bob Wettlaufer, in Regina on April 12, 2002.

Although the ICDC Board has put much effort into irrigation policy on the behalf of irrigators, the only results to date are the transfer of irrigation to SAFRR.

ICDC's Irrigation Education Initiative

The ICDC Board has been an advocate for improved irrigation education opportunities in Saskatchewan. The July 2002 issue of *The Irrigator* documented the existing options for irrigation education and training. These included:

- School system
- Project WET, Ag in the Classroom
- SIAST Moose Jaw
- Irrigation course
- Green Certificate Farm Training Program
- Irrigated Crop Production Technician
- ICDC and The Irrigation Centre
- Extension, field days, Web site, newsletters, .
- University of Saskatchewan
- Work experience, some irrigation course content.

ICDC has been active in the development of Ag in the Classroom irrigation material. ICDC is working through The Irrigation Centre to promote the Green Certificate Program.

As the industry partner at The Irrigation Centre, ICDC participated in meetings with Dr. Ernie Barber, Dean of Agriculture at the University of Saskatchewan; with the head of Agricultural and Bio-Resource Engineering, Dr. Charles Maulé, and Dr. Jim Kells of Civil Engineering. As a result of these meetings, the university provided information regarding the irrigation and water content of its

agriculture classes and offered suggestions as to how irrigation's influence could be increased. For example, during the past four years, ICDC has mentored six co-op students from the College of Agriculture, who were working on irrigation R&D projects.

Since ICDC's establishment, it has conducted more than 200 farm-scale demonstrations, hosted more than 25 field days and winter meetings, and published numerous publications. For example, more than 600 people have attended ICDC's pocket gopher control field days over four years.

ICDC together with SIPA continue to develop the Web site, which can be found at www.irrigationsaskatchewan.com, as part of a continued effort to provide irrigators with additional information and knowledge.

Irrigation Research and Development (R&D) Projects

ICDC runs an effective R&D program using levy money raised from irrigators. The projects were selected from a long list supplied by all Irrigation Districts in 1999 and published by ICDC. Each year, irrigation district delegates are asked to approve the R&D program and the use of their funds. In 2002, the following projects were conducted by the ICDC staff seconded from SAFRR.

ICDC Irrigated Forage Centres

1) Blair Backman, Cypress Lake Irrigation Efficiency Demo.

On April 12, 2002, the ICDC Board terminated this demonstration site, with only two of three years completed, due to low water levels in Cypress Lake.

On July 5, 2002, Doug Friebel (Dr. Surya Acharya's senior technician) of the Lethbridge Research Station selected perennial cereal rye plants with Consul irrigation adaptation and spring vigour from the fall 1999 and spring

2000 seeded crowns for the next generation of rye breeding. These crowns have been transplanted to pots in the greenhouse.

2) Friesen's, Marksvew Farms at Warman, Dairy Quality Forage Centre.

This Saskatchewan Forage Council variety selection trial for 14 legumes and 14 grasses was seeded in 2001. The total plot size was doubled with a June 13, 2002, seeding. The 2001 seeded plots were first cut and second cut harvested on June 20 and July 29, 2002, with very high quality, but had quite variable yield results.

SeCan Cereal selection and silage quality trial was seeded May 14, 2002, and was reported in detail in the July issue of *The Irrigator*.

The ICDC Forage Centre Field Day, on July 29, 2002, was well attended by both dairy and beef producers. A fall ICDC irrigated-corn field day was held, and about 50 producers attended.

3) Don Arendt, Eastend Irrigation Project, Phosphate Management Demo

Project results and recommendations were given to more than 50 forage producers at Val Marie and Eastend on Jan. 16 and 17. High extension value has been achieved with this project. The ICDC final report and PowerPoint presentation are available.

The SAFRR forage management tour featured this site in July. The ICDC project and ICDC Senior Agrologist, Les Bohrsen, were featured in Les Henry's article in *Grainews*, May 2002, forage edition column (reprinted in *The Irrigator*, November 2002).

4) Semiarid Prairie Agriculture Research Centre (SPARC), Forage and Cereal Crop Scientists, Swift Current

SPARC operated 300 acres of unrestricted irrigation in 2002. ICDC relocated the SeCan Cereal selection and silage demo from the Cypress Lake site to SPARC and included green feed, yellow feed and silage comparisons of yield and quality.

Dr. Paul Jefferson, Dr. John Clarke, Dr. Grant McLeod, SeCan and the Canadian Wheat Board assisted in the delivery of ICDC's public irrigation tour at SPARC on July 31. The irrigated SeCan plot of new silage annuals/cereals, seeded on May 30, was featured. On June 25, the cereal forage site was featured at the South West Forage Association/SPARC Forage Day. This event was attended by more than 100 beef producers and irrigation clients.

ICDC maintains a solid working relationship with SPARC, and will work to increase the productive linkages with SPARC.

5) Canada Saskatchewan Irrigation Diversification Centre (CSIDC) Forage Centre at Outlook

ICDC contracted the Saskatchewan Forage Council to establish four replications of 14 alfalfa and 14 grass selections. Hay, grazing and export opportunity varieties are being demonstrated and may be directly compared to the Warman dairy quality forage centre.

On May 27, 2002, seeding took place adjacent to the Saskatoon Research Station's forage test plots to expand the forage demonstration value of CSIDC in the next four years.

Pocket Gopher Control

1) Saskatchewan Burrowing Rodent Conference, April 3 and 4, 2002.

ICDC's senior agrologist, Les Bohrsen, assisted with the organization of this conference, and presented the ICDC experience entitled, *Irrigate or Eradicate Pocket Gophers in Premium Forages*.

2) Irrigation Project Cost Sharing.

ICDC contracted with Grainland ID for 590 acres of spring baiting and 550 acres of fall baiting, and with Greg Sommerfeld at Broderick for 526 acres of both spring and fall baiting. Also, 420 irrigated alfalfa acres have been contracted for fall baiting at Elbow with Murray Foulston and Harvey Joel. Clint Bjolverud's labor rate changed to an acreage rate of \$3.50 per acre per baiting season. A detailed report of the spring baiting was featured in the July issue of *The Irrigator*. Negotiations between ICDC, Grainland ID and the two Elbow area irrigators facilitated a significant spring 2003 baiting opportunity and base for evaluation of this program.

3) Pocket Gopher Extension

ICDC's Les Bohrsen was a guest speaker at the Saskatchewan Pest Control Officers Association (SPCOA) convention at Moose Jaw on June 18, 2002. Many of the Pest Control Officers were very impressed with ICDC's efforts to create awareness of pocket gopher control, the educational program and the on-farm demonstrations for Saskatchewan farmers.

Also, on June 4, the ICDC Pocket Gopher Control experience was presented to the monthly manager's dinner meeting of 22 South West Hutterite Colonies at Swift Current, sponsored by Monsanto and Legault Holdings. The extension value of this ICDC project has received significant interest from SAFRR's Extension Service Branch. A report is available and a Power Point presentation

was prepared.

ICDC agrologist, Korvin Olfert, organized ICDC's pest control field days in October. They were delivered at St. Louis, Blaine Lake, Macrorie, Elbow, Arcola and Oxbow with over 150 people attending. The ICDC mailing list for Pocket Gopher Control is over 600 farmers.

Irrigated Grain Corn/Silage

1) Corn Industry Partners

ICDC senior agrologist, Les Bohrson, provided two, three-hour lectures/training sessions on basic corn production in Saskatchewan for new Monsanto/DEKALB corn reps. on Jan. 18 and Feb. 5.

Bohrson was invited by Pioneer Hi-Bred Limited representatives, Jim Tanner and Ray Lepp, to speak about corn and ICDC at producer meetings at Warman and Regina in February.

Monsanto and Pioneer Hi-Bred have a variety selection demonstration at Baildon ID on Rick Swenson's and at Osler on Philip Enns' farm in common demonstration sites with ICDC. Monsanto requested that ICDC independently advise irrigators on their eight variety corn trial and Roundup Ready corn silage demonstration.

2) Irrigated Corn Grower Database.

2002 was ICDC's third year of physical and chemical measurement to corn adaptation, maturity and management in Saskatchewan. The database, developed by ICDC senior agrologist Les Bohrson, includes 1,800 acres and 48 irrigated corn tests at Osler, Leader, Baildon, Riverhurst and Broderick.

ICDC delivered corn field days at Leader, Osler and Baildon, with silage harvesting and grazing opportunities featured. Provincial coverage on CTV's Farm Gate, with Bob

Simpson, and print media coverage in *The Western Producer*, by Karen Briere, and in the *Moose Jaw Times Herald* was excellent.

3) Silage Publication

A set of answers to frequently asked questions about *bale silage* was drafted from an initial exchange of topics with Gordon Hutton and Allan Macaulay of Alberta Agriculture, Food and Rural Development (AAFRD). ICDC co-operated with Michel Tremblay, SAFRR Forage Specialist, on upgrading three chapters of the silage manual into new silage facts sheets. *Silage Storage Techniques* was published in August. *Corn Selection and Management* is the next chapter to be completed.

ICDC is preparing a 2002 review of its silage yield and quality results.

Forage Agronomics

HayWatch Saskatchewan

1) Canadian Hay Association (CHA)

National Conference

ICDC agrologist, Korvin Olfert, having returned to ICDC from educational leave, presented a paper on timothy establishment and fertilizer practices in Calgary at the CHA's national conference on Nov. 21.

2) Feedlot opportunities

ICDC provided some local irrigation contacts and options for the relocation of the University of Saskatchewan's Beef Research Unit. ICDC facilitated a feedlot meeting between Agribuild Systems Ltd. and community feedlot groups around Lake Diefenbaker on February 6.

ICDC's publication, *Irrigation Economics and Agronomics 2002*, rates export timothy, corn and barley silage, and alfalfa hay as profitable as cash crops, like dry beans. Opportunities exist for forages to compete and move on to some of our best irrigated land.

3) Forage Experience

ICDC agrologists regularly exchanged information with the Canadian Hay Association, Saskatchewan Forage Council, Saskatchewan Alfalfa Seed Producers, Saskatchewan Forage Crop Advisory, Ducks Unlimited and Sask Watershed Authority, among others. Our ICDC Forage Manager display has been well received at meetings like the *Foraging into the Future* conference in Swift Current on January 30 & 31.

Other ICDC Water Use Efficiency Services

1) South Saskatchewan Water Supply System (SWSS), a PFRA project technology upgrade

The July 16 and 17 irrigation tour for Ethiopians featured trickle irrigation at Treasure Valley Markets and Butte Hutterite Colony where ICDC provide season-long irrigation scheduling demo equipment.

ICDC and SAFRR staff met with Dr. David Dent from Australia regarding irrigation, salinity management and new deep mapping technology.

ICDC participated in the trade show at CSIDC on Thursday, July 11.

2) Irrigated Market Garden and Fruit Crop Field Day (ultimate \$/water unit)

On Tuesday evening, July 9, Treasure Valley Markets attracted over 60 enthusiastic visitors but under rather soggy conditions. Linda and Maurice Metke's commercial food crops are a perfect example of the value and management of scarce water in the dry, brown soil zone.

Provincial horticulturists from the University of Saskatchewan and SAFRR provided excellent instruction to new and experienced growers.

The impact of drought on the 2002 provincial fruit crop increased the awareness of optimal water management.

3) Irrigation Water/Effluent Quality

ICDC agrologists address ongoing irrigation agronomics and environmental challenges for irrigators using effluent from Moose Jaw, Swift Current, Lloydminster, the Qu'Appelle River and smaller effluent lagoons.

Internal drainage, salinity, crop choices and sustainability management recommendations are common.

ICDC agrologists assist with the monitoring of irrigation reservoirs and water sources as they impact irrigation project and watershed operations.

They also assist the Swift Current Creek Watershed Stewardship group with articles on irrigated forage production, water quality, effluent irrigation and irrigation sustainability.

Irrigated Bean Seed Demonstrations and Bean Seed Research

In 2001, ICDC formed a bean seed sub-committee to foster the development of a bean seed industry in Saskatchewan. The initiative involves a three-pronged approach:

- 1) Field demonstrations to demonstrate that "dryland" bean varieties can be profitably produced for high quality seed under irrigation.
- 2) Research to identify useful bean seed quality tests.
- 3) The establishment of

Managing Seed-borne Disease in Bean Seed Fields

ICDC Agrologists Deb Oram and Lana Shaw tested the efficacy of Kocide for the suppression of bacterial blight in irrigated bean seed fields.

The fields were sprayed with multiple applications of Kocide. Three of these fields were CDC Pintium grown for seed. Fields were scouted by CFIA. Saskatchewan bean seed will be in demand for 2003.

Cooperators:
Grant Carlson, Outlook: wide row, undercut and combined, CDC Pintium certified seed.

Merle Larson, Outlook: narrow row, swathed and combined, CDC Pintium certified seed.

Dale Ewen, Riverhurst: narrow row, swathed and combined, CDC Pintium certified seed.

Kevin Langer, Riverhurst: wide row, undercut, Othello, commercial.

Evaluating Seed Health Tests

Three seed tests for bacterial blight were evaluated. Thirty seed lots were tested with three seed health tests and also planted at CSIDC.

Optimum Irrigated Rye Grass Forage Production

ICDC agrologists, Deb Oram and Lana Shaw, helped co-operators manage their mixed annual and Italian rye grass fields for maximum profit and optimum yield. ICDC also compared the costs and returns for grazing, silage and baling of rye grass.

Cooperators:
Gerald Follick, Broderick: combination hay and graze

Dan Willms, Dundurn: (1) hay, (2) silage, (3) graze

A. Siemens and L. Hamilton, Lucky Lake: combination hay and graze

Doug Jones, Lucky Lake: (1) hay, (2) silage and (3) graze

Bob Sawatsky, Riverhurst: (1) silage bales (2) graze

(1) First Cut (2) Second Cut (3) Third Cut

Timothy Production for Export Markets

A timothy cutting date research trial was conducted by ICDC agronomists, Deb Oram and Lana Shaw, with two co-operators: B.J. Boot and Jerry Eliason and fieldman Jody Rysavy. The two co-operators also demonstrated the effect of P fertilization on yield and quality of timothy hay. Three other timothy fields were also monitored over the season. These demonstration and research projects will help timothy producers to keep pace with market requirements and potentially increase yield and quality.

Cooperators:

Greg Sommerfeld, ELCAN
Forage Inc, Broderick
Jerry Eliason, Glenside
B.J. Boot, Outlook
Dan Willms, Dundurn
Kelvin Bagshaw, Birsay

Hog Manure Management under Irrigation

The ICDC Manure Management Project involved consultation and data collection with the co-operators but not weekly field inspections. Soil testing by SAFRR's Agro Environmental Unit was resumed in the fall. ICDC wishes to acknowledge the support of Enviro Test Laboratories in this and other ICDC R&D projects. ICDC promotes environmentally responsible and profitable use of the nutrients in swine effluent by irrigated crops.

Cooperators:

Michael Millar, Birsay
Bob Tullis, Birsay
Jim Couch, Saskatoon
Mervin Murdoch, Birsay

Fusarium Prevention, Management and Awareness in Irrigated Durum

Four co-operator's fields were sprayed with Folicur. Folicur was supplied by Bayer, Gardiner Dam Terminal, and Midwest Agro. Midwest Agro did the application with (specially purchased) twin-jet nozzles that improved application of Folicur. The consistent yield response to Folicur from the four fields would just cover the cost of the product and application.

Durum is very susceptible to Fusarium; hard wheat and barley have some resistance. Irrigators need to know that their irrigated land is at risk for developing this disease.

Cooperators:

Randy Bergstrom, Birsay
Roy King, Birsay
Bob Tullis, Tullis
Michael Millar, Birsay

Web site: www.irrigationsaskatchewan.com

(a joint ICDC/SIPA Project)

This farmer-friendly gateway to irrigation information and contacts on the prairies and around the world is being updated and gradually upgraded. The Web site is subject-driven, following ICDC's and SIPA's philosophy that the Web site will guide the visitor to relevant information, wherever it is. This Web site is a work in progress as more relevant irrigation links as sources are discovered.

Canada-Saskatchewan Irrigation Diversification Centre (CSIDC) Program Support

ICDC, Industry Co-Chair of The Irrigation Centre, Outlook

ICDC's Chair sits on the Executive Management Committee of The Irrigation Centre as the industry co-chair.

Initiatives pursued by this group include the possibility for co-locating provincial irrigation staff at the centre for improved client service; promoting irrigation education opportunities; integrating the Green Certificate requirements into summer student activities; the development of detailed capital and R&D work plans, including ICDC's R&D priorities and the establishment of an irrigation publications review team.

Potato Variety Development

ICDC is one industry partner in this Matching Investments Initiative project with Dermot Lynch, AAFC Lethbridge, John Könst, SSRID and Pak-Wel, Lucky Lake.

This project involves an early generation trial with 11 clones and a main crop trial with 24 clones planted.

The results will be reported by the Western Seed Potato Consortium in the CSIDC Annual Review.

CSIDC Field Day

ICDC assisted in the organization of the July 11 annual field day and joined with the Canadian Hay Association (CHA) for a forage field tour in the afternoon. Also toured were an annual rye grass field, the ELCAN Forage Inc. timothy compressor, and a field demonstration of timothy reconditioning.

ICDC/CSIDC Crop Varieties/Durum Varieties

ICDC continues to be a major source of program funds for The Irrigation Centre in the annual production of *Crop Varieties for Irrigation*. Many sources of data are used to give irrigators a guide to how certain crop varieties perform under irrigation.

ICDC's R&D program stretches its limited resources in partnership with Saskatchewan Agriculture, Food and Rural Revitalization to offer irrigators "value for money" R&D.

ICDC wishes to thank Saskatchewan Agriculture, Food and Rural Revitalization for its continued support; the co-operators, who commit themselves to extra work and effort to get results; and all the partners, who provide product and services to make ICDC's R&D program successful.