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ICDC board report

12th Annual Irrigation Conference held in Moose Jaw

From the ICDC Board of Directors

The 2007 Annual Meeting of the Irrigation Crop Diversification Corporation (ICDC) was held in Moose Jaw on Dec. 4, 2007.

Staff of the Saskatchewan Ministry of Agriculture's Irrigation Development Branch provided reports on all the projects implemented and funded in 2007 by ICDC.

For those unable to attend, a complete ICDC Program Final Report for 2007 is available. For a copy, please call either the Outlook office at (306) 867-5500 or the Swift Current office at (306) 778-5041.

Summaries of all the projects implemented in 2007 are included in this edition of *The Irrigator* (pages six to nine).

ICDC board elections saw Paul Heglund and Randy Bergstrom return for their second three-year terms as directors. Paul represents the South West Development Area and Randy the Lake Diefenbaker Development Area. Our thanks to both these individuals for their continued service to ICDC.

The board received approval from the meeting to allocate funds and pursue projects in various categories for the year 2008/09. This 2008/2009 Workplan Budget is provided in detail on page two.

The board is actively involved in trying to meet the needs of ICDC members, and we seek your input into the development of our program.

If you have any ideas for projects or thoughts about the program, please talk to the Irrigation Development Branch support staff listed in this newsletter or to a Board representative from your area.

– Rick Swenson, Chair, ICDC

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Introducing ICDC's board of directors

ICDC directors are elected at the annual meeting by delegates of the various irrigation districts. Each irrigation district (ID) is entitled to send one ICDC delegate per 5,000 irrigated acres or part thereof. The majority of the board must, by law, be composed of irrigators.

The four ICDC development areas defined by ICDC's bylaws are represented: Lake Diefenbaker Development Area (LDDA), two directors; South West Development Area

(SWDA), two directors; North Development Area (NDA), one director; and South East Development Area (SEDA), one director. Non-district irrigators elect one director. Two directors are appointed by each of the Saskatchewan Irrigation Projects Association (SIPA) and the Saskatchewan Ministry of Agriculture.

The current ICDC board is described in the chart below.

Name and position	Irrigation District and Development Area Represented		Year term concludes and Terms served	
Rick Swenson, Chair	Baildon ID	SEDA	2009	2
Randy Bergstrom, Vice Chair	Luck Lake ID	LDDA	2010	2
Larry Lee, Alt. Vice Chair	Macrorie ID	SIPA rep	Appointed	
Kevin Plummer, Director	Moon Lake ID	NDA	2009	2
Paul Heglund, Director	Vidora ID	SWDA	2010	2
Francis Kinzie, Director	Pike Lake	Non-District	2009	2
Neil Stranden, Director	SSRID #1	LDDA	2008	1
Rob Oldhaver, Director	Miry Creek ID	SWDA	2008	1
Kelvin Bagshaw, Director	Luck Lake ID	SIPA rep	Appointed	
John Babcock, Director	Saskatchewan Ministry of Agriculture		Appointed	
Dr. Abdul Jalil, Director	Saskatchewan Ministry of Agriculture		Appointed	

ICDC Board Report: 2008/2009 Workplan Budget

Research and Demonstration Projects		
Variety Testing	\$ 50,000	
Agronomic Trials	3,000	
Forage Crop Demonstrations	5,000	
Fruit Crop Demonstrations and Industry Development	2,000	
Vegetable Crop Demonstrations and Industry Development	2,000	
Strawberry Crown Project	16,000	
New Crop Demonstrations	3,000	
Bio-Fuel Grains Demonstrations	3,000	
Other	<u>2,000</u>	
		\$86,000
Communications	5,000	
Audit/Insurance	5,000	
Website	<u>3,000</u>	
		<u>13,000</u>
TOTAL		<u>\$99,000</u>

Current industry issues

Fertilizer options: slow release nitrogen

By Kelly Farden, AAg, and Sarah Sommerfeld, AAg

Environmentally Smart Nitrogen (ESN[®], Agrium Inc.) is a slow-release urea fertilizer marketed by Agrium Inc.

According to the ESN[®] reference material, the urea granules are coated with a slightly soluble polymer membrane, which delays the release of urea from the granule into the soil.

As the soil warms, the membrane allows water to diffuse into the fertilizer granule, dissolving the urea but still keeping it encapsulated within the coating. The urea solution is then released through the membrane at a controlled rate throughout the growing season. It is suggested that because of the delayed release of the urea, fertilizer use efficiency will be increased. Less nitrogen (N) will be lost through leaching and denitrification and more N will be made available at times when crop demand is highest. Previous research, in

southern Alberta, has examined the levels at which ESN[®] can be safely seed-placed with winter wheat versus urea. Further research is being carried out to examine safe seed-placed ESN[®] rates with spring wheat, barley and canola.

Unincorporated spring- or fall-broadcast ESN[®] applications may not be effective because the nitrogen release rate is too slow and volatilization losses may occur. The use of ESN[®] with longer season crops, such as potatoes, was initiated in 2007 by Alberta Agriculture and Food to determine if ESN[®] can be utilized in potato production to improve N use efficiency while still maintaining tuber yield and quality. Irrigation Development Branch staff will continue to follow the research being done on ESN[®] fertilizer and keep ICDC members informed as information becomes available.

Irrigation publications for producers

ICDC offers three publications for irrigation producers: the *ICDC Program Final Report 2007*; a budget book entitled *Irrigation Economics and Agronomics*; and *Crop Varieties for Irrigation* provided in partnership with the Canada-Saskatchewan Irrigation Diversification Centre (CSIDC).

ICDC Program Final Report 2007 discusses the demonstration projects led by irrigation agrologists of the Saskatchewan Ministry of Agriculture and funded by ICDC in 2007, and summarizes the technology transfer events hosted at demonstration sites.

ICDC's budget book, *Irrigation Economics and Agronomics*, is produced annually by provincial irrigation agrologists to help irrigation farmers to compare and document their on-farm costs and productivity, in relation to current industry prices, costs and yields. The budget book provides agronomic recommendations with respect to irrigation, fertility and crop management.

Copies of the publications are available from the ICDC offices in Outlook and Swift Current, or from the ICDC website at www.irrigationsaskatchewan.com, under ICDC Publications.

Introducing ICDC's Staff

Support for ICDC is provided through the Irrigation Development Branch of the Saskatchewan Ministry of Agriculture. ICDC staff members are as follows:

John Linsley, PAg
Manager, Irrigation Development, Outlook
(306) 867-5527

Gerry Gross, PAg
Provincial Senior Irrigation Agrologist
Irrigation Development, Outlook
(306) 867-5523
Specialty area: ICDC program and administration.

Janice Bennett
Administrative Assistant, Outlook
(306) 867-5500

Garth Weiterman, PAg
Provincial Senior Irrigation Agrologist
Agro-Environmental Unit, Outlook
(306) 867-5528
Specialty areas: soil evaluations, irrigation scheduling, soil fertility.

Kelly Farden, AAg
Provincial Irrigation Agrologist
Agro-Environmental Unit, Outlook
(306) 867-5507
Specialty areas: soil evaluations, irrigation scheduling, soil fertility.

Korvin Olfert, PAg
Provincial Irrigation Agrologist, Swift Current
(306) 778-5041
Specialty areas: forages, corn.

Lana Shaw, PAg
Provincial Irrigation Agrologist, Outlook
(306) 867-5512
Specialty areas: cereals, pulses, fruit.

Sarah Sommerfeld, AAg
Provincial Irrigation Agrologist, Outlook
(306) 867-5521
Specialty areas: vegetables, oilseeds, forages and grazing.



John Linsley,
PAg



Gerry Gross,
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Janice Bennett



Garth
Weiterman, PAg



Kelly Farden,
AAg



Korvin Olfert,
PAg



Lana Shaw,
PAg



Sarah
Sommerfeld,
AAg

ICDC and SIPA: what's the difference?

By Gerry Gross, PAg

The Irrigation Crop Diversification Corporation (ICDC) and the Saskatchewan Irrigation Projects Association (SIPA) are two separate entities with one important factor in common: irrigation. While both are provincial, farmer-driven organizations involved with irrigation in the province, the two groups serve completely different functions.

SIPA:

Established under *The Non-Profit Corporations Act* on April 1, 2005, SIPA's mandate is to represent the interests of its irrigation membership in Saskatchewan, and to provide a common voice to raise issues of concern to irrigators.



Membership in SIPA is open to all irrigators in the province, either as districts, individuals or entities in the business of serving irrigators. SIPA is the voice of irrigators to governments and the public with regard to policies and programs relevant to irrigators, and promotion and support for Saskatchewan's irrigation industry.

For more information about SIPA, phone Roger Pederson, President, at (306) 867-8460, or Sandra Bathgate, SIPA Secretary, at (306) 796-4420.

SIPA:
*the voice of
irrigators
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and the public.*

ICDC:

Incorporated under *The Irrigation Act, 1996*, ICDC is governed by a board of 11 members: seven are irrigators elected from

their respective areas; two are appointed by SIPA; and two are appointed by the provincial government.

ICDC's focus is on the research and demonstration needs of Saskatchewan's irrigation farmers, and ensuring that these needs are being met. ICDC is not involved with irrigation policy and program issues. All irrigation districts pay an annual fee that provides ICDC with funding to meet the following objectives:

- 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 Minister of Agriculture for Saskatchewan in promoting and developing sustainable irrigation in Saskatchewan.



ICDC:
*research and
demonstration
for Saskatchewan's
irrigation farmers.*

For more information about ICDC, contact any of the board members, or Gerry Gross at (306) 867-5523 in Outlook.

Program review: ICDC

Field crops:

Ethanol wheat demonstrations

By Lana Shaw, PAg

Ethanol wheat demonstrations were initiated at four irrigated sites across Saskatchewan in 2007 due to an increase in demand for ethanol-type wheat. AC Andrew, a low-protein, high-yield variety, was used at each demonstration site.

The purpose was to demonstrate to irrigation farmers and the ethanol industry the potential of ethanol-type wheat under high management irrigation conditions. The project plan was to measure field scale yield and record disease

pressure at each of these sites. Demonstration sites were located on irrigation districts at Disley, Baildon, Birsay and Central Butte. Yields were depressed due to the extreme heat experienced in July 2007. Heat stress damage was reflected in the grain samples.

One of the sites had a significant Fusarium Head Blight (FHB) infection, which also reduced crop yield.

Brief summary of ethanol wheat demonstrations conducted in 2007 on pages 3-5. For a complete program review, see the ICDC Outlook and on the ICDC website.

Forage crops:

Intensive rotational grazing demonstrations

By Sarah Sommerfeld, AAg

Two intensive grazing projects were initiated in co-operation with producers at Outlook and Hanley.

The objective of the Outlook project was to document forage, animal and economic data related to intensive grazing and to provide information and recommendations to producers. Grazing of 170 feeder heifers occurred on an established grass/legume pasture.

ICDC staff collected and summarized data to provide number of grazing days, average daily gain, stocking rate, forage quality, pasture composition and economic analysis.



Intensive rotational grazing demonstration projects on irrigated pastures will determine if the extra work is worth the effort.

The objective of the Hanley project is to document an intensive rotational grazing operation utilizing a newly established irrigated pasture. Based on intensive livestock management practices, this project will assist in determining if the potential higher returns per acre can compensate for additional management required.

ICDC's 2007 projects

Stories of ICDC's demonstration projects in 2007 are provided on pages six to nine. An account of the 2007 ICDC Final Report is available from the offices in Swift Current, Saskatchewan, on the ICDC website.

Corn variety demonstrations on farm and industry sites

By Korvin Olfert, PAg

Four field-scale corn variety demonstrations were initiated with irrigators from across the province. Each site consisted of at least two varieties seeded side by side, and managed identically. Variety demonstrations were located at Dunblane, Estuary, Leader and Baildon.

Two industry sites were evaluated at Outlook and Osler. Each of the varieties was evaluated near tasseling (early August) and after cob formation (early September) for kernel and cob characteristics, disease, maturity and total yield. Early maturing varieties outperformed late varieties due to the cool year. The sites were harvested as silage or grain.

The Osler forage centre: alfalfa and grass

By Korvin Olfert, PAg

In 2003, an alfalfa and grass variety research plot was established at Osler, where harvesting of three cuts of alfalfa per year for the dairy industry is common. However, previous research on variety information was carried out under a one

cut system for dryland or two cuts for irrigation. Many of the new alfalfa varieties available perform better under more aggressive management. The site includes 14 alfalfa varieties, and 14 grass varieties under a randomized, replicated, small-plot design.



**More
projects
on pages
eight
and
nine.**

Left:
Irrigators examine one of the corn variety demonstration sites during a field day in 2007.

ICDC 2007 projects

Water management:

Irrigation scheduling with the Alberta model

By Garth Weiteman, PAg

ICDC continued working with Alberta Agriculture's Irrigation Division staff to field check a decision support system for irrigation scheduling based on climate data.

The system, known as Irrigation Management Climate Information Network (IMCIN), utilizes the nearest meteorological station data to assist with irrigation scheduling. The meteorological (met) data is used in the Alberta Irrigation Management Model (AIMM) and, with input from the producer, helps determine appropriate times for irrigating.

The model requires input on seeding date and beginning soil moisture content. It then tracks moisture use based on the met data. The moisture use curve can be corrected to

measured values throughout the season if desired. AIMM will also predict moisture use for an upcoming period based on the historic record for the selected met site. This allows the producer to forecast an irrigation requirement.

Moisture use within the root zone is modeled based on commonly agreed rooting zone depths.

One of the most useful graphical presentations of the data is to look at the entire root zone, which is expressed in both a volume and percentage basis. Irrigation and rainfall to keep the use curve above the allowable depletion line for the crop should allow for maximum yield.

Irrigation scheduling is vital for successful irrigation. ICDC hopes to continue this initiative in 2008.



Left: An ethanol wheat demonstration site at Belle Plaine. This is one of four irrigated sites established across Saskatchewan in 2007, as a result of an increase in demand for ethanol-type wheat. See ethanol wheat project report on page 6.

ICDC 2007 projects

Alfalfa forage demonstrations

By Korvin Olfert, PAg

A forage demonstration, which included 10 alfalfa varieties, was established in 2006 at Waldeck. A demonstration at Consul was established in 2007 consisting of 18 alfalfa varieties. Each trial is flood irrigated with one border dyke per variety and evaluated for total yield and quality per cut.

Annual cereal forage varieties for irrigation

By Korvin Olfert, PAg

As part of ICDC's variety research at the Canada-Saskatchewan Irrigation Development Centre (CSIDC), barley, oats and triticale are evaluated not only for grain production but also for total biomass production and forage quality for silage. In 2007, a second site was established at the Semi-arid Prairie Agriculture Research Centre (SPARC) in Swift Current to evaluate the irrigated silage potential of 13 barley varieties, five oat varieties and five triticale varieties. The trial was a randomized, replicated small plot design and was established as a second site to increase the number of site years of data collected.

Ultra value crops:

Fruit production and processing initiative

By Lana Shaw, PAg

ICDC initiated a fruit project in 2007 due to actions by fruit organizations to elevate fruit production to a commercial scale. Release of new sour cherry and haskap (blue honeysuckle) varieties from the University of

Saskatchewan's Domestic Fruit Program has prompted rapid expansion into these fruit types. The challenge to the cherry and haskap industries is to increase processing and marketing capacity in concert with the rapid increase in supply foreseen within the next five years. ICDC has identified a role to play in co-ordinating and delivering research and development in pruning and other cultural practices for these new fruit crops, which will assist the industry in a technology transfer capacity.



Haskap or blue honeysuckle.

Strawberry crown commercialization

By Sarah Sommerfeld, AAg

The objective is to assist in developing and advancing commercial strawberry crown production in Saskatchewan. Through the direction of the Strawberry Crown Steering Committee, production and economic data is collected and market contacts are developed. All documented data and established contacts are intended to be shared with interested commercial growers as a support and guidance tool.



Strawberry crowns.

Current industry issues

Clubroot awareness for irrigation farmers

By Sarah Sommerfeld, AAg

Throughout the agriculture sector, significant attention has been given towards educating producers about clubroot. Clubroot is a long lived, soil borne disease which affects cruciferous crops, including canola and mustard. In recent years, reports of clubroot have been confirmed in the Edmonton and Brooks areas of Alberta. At present, there have been no confirmed reports of clubroot in Saskatchewan.

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are released into the soil. These resting spores have a half life of four years but can remain viable for up to 20 years. The disease is easily spread via wind and water erosion, field machinery, livestock manure and soil adhering to seed potatoes and other seed sources. Soils that are acidic (pH less than 6.5), have high soil moisture content, and a soil temperature between 20 to 24 C are at a higher risk for clubroot infection.

Clubroot disease is caused by the organism *Plasmodiophora brassicae*, a protist with fungal properties that requires a living host to grow and multiply. Upon infection, the multiplication and growth of the infecting organism results in the formation of clubroot galls. These galls act as a nutrient sink and inhibit nutrient and water distribution to above ground plant parts. Indications of early infection include wilting, stunting and yellowing of seedlings at the late rosette to early podding stage. Signs of infection during later stages of growth include premature ripening and shriveled seeds.

A clubroot infection can result in up to a 50 per cent yield loss. A general rule of thumb indicates that the yield loss can be about half of the percentage of infected stems.

As infected plant roots decay, resting spores

Irrigated crop production exposes producers to a greater potential risk of introducing clubroot to their farming operations. In 2007, approximately eight per cent of the irrigated acres around Lake Diefenbaker were in potato production. Potato growers need to make a conscious effort to source seed from areas free of clubroot to ensure that clubroot is not introduced to Saskatchewan farms. The higher soil moisture content of irrigated crop land provides a more favorable environment for clubroot development, if the opportunity for infection presents itself.

All producers need to ensure that field equipment and in-field traffic are not infecting fields or transporting contaminated soil to uninfected areas. If equipment or vehicles have been used in areas suspected of, or known to have, clubroot infection,



Clubroot is a long-lived, soil-borne disease, that affects cruciferous crops, including canola and mustard.

then producers should ensure that a thorough cleaning is undertaken to remove all soil from the equipment or vehicles.

It is also important to maintain three- or four-year cropping rotations. This strategy does not eliminate the possibility of introducing clubroot to Saskatchewan fields, but it does

reduce disease severity and proliferation.

Irrigated crop production exposes producers to a greater potential risk of introducing clubroot to their farming operations.

If a clubroot infection is suspected, producers should dig up plants and examine plant roots for gall formation. Producers must be diligent in

attaining the correct diagnosis, as symptoms can be assigned to heat stress, blackleg or fusarium wilt. There are no cost effective

fungicide treatments available for oilseed crops to suppress or control clubroot, and no current seed varieties provide resistance against the disease.

It is important to remember that, to date, no confirmed reports of clubroot infected crops have been made, and due diligence should be undertaken to maintain this status.

Sources

Hartman, Murray. *Agri-Facts: Clubroot Disease of Canola and Mustard*. Alberta Agriculture and Food. May 2007.

Waterer, D., Thomson, J., Achtymichuk, C., and Pearse, P. Personal communication regarding seed potatoes and clubroot of canola. December 2007.

Agriculture and Agri-Food Canada (CSIDC). Drive-by assessment for the Irrigated Crop Survey by Bloomfield Consulting, 2007.

ICDC project ideas for 2008

ICDC staff is making preparations for the 2008 project year and is challenging irrigators to contribute ideas and thoughts for projects they would like pursued.

Irrigation agrologists want to provide information to producers that is pertinent, timely and practical for on-farm application.

If producers have project suggestions or inquiries regarding specific crops, production practices or industry issues, bring them to the attention of ICDC staff and we'll address them in an effective and efficient manner.

As well, ICDC Board members welcome the opportunity to discuss the ICDC program and potential project ideas with irrigation farmers.

For the projects undertaken in 2007, see pages six through nine.

Upcoming Events

June 2008: Trickle Irrigation Workshop

July 2008: CSIDC Field Day, Outlook

December 2008: ICDC Annual Meeting

Phone the Irrigation Development Branch at (306) 867-5500 in May 2008 for details about all upcoming events.



Irrigation producers at CSIDC's Field Day at Outlook.

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