



THE IRRIGATOR

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Eighth Annual Irrigation Conference Dec 1 and 2 in Outlook

ICDC is looking forward to co-hosting the Eight Annual Irrigation Conference in Outlook on Monday and Tuesday, December 1 and 2.

by calling Sandra Bathgate (SIPA sec/ treasurer) at (306) 796-4420.

ICDC Field Days Partner with Industry to

The agenda is printed in this edition of *The Irrigator*. The move to Outlook, after being in Swift Current, reduced attendance from South West Irrigation Districts. ICDC is urging those Districts to send their delegates and participate. PFRA is making a presentation to the Conference: ***“South West Irrigation: What is it? and Where’s it going?”*** to educate the Lake Diefenbaker area irrigators.



We are extremely pleased that the new Director General of PFRA, Carl Neggers, has agreed to attend the Monday evening session which looks at irrigation from the prairie perspective. This is probably a first: a meeting of the three prairie province irrigation associations.

This conference, soon after a provincial election, is a very important one for our irrigation organizations to clearly outline their ***Irrigation 20/20 Vision***.

Please make every effort to attend. Register



Zero-In on the Moneymakers

Corn, beans, timothy and Treasure Valley Market Garden all attracted big crowds to ICDC co-sponsored Field Days. At a time when agriculture is looking for good news stories, each of these crops is showing a significant profit margin and each attracted big crowds this summer. Irrigated forage brought people out for a different reason. ICDC’s Irrigated Forage Centres at Warman, CSIDC and SPARC (Swift Current) generated a lot of interest from cattle producers who were looking ahead to feeding

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ICDC Board Report

(Continued from page 1)

more animals this winter. ICDC's forage centres have demonstrated to local irrigators the agronomy necessary to achieve both high yields and high quality.



ICDC Co-chairs The Irrigation Centre Executive Management Committee (EMC)

ICDC is now the one "veteran" co-chair at The Irrigation Centre. EMC welcomes to its table the new Director General of PFRA, Carl Neggers, as the federal co-chair and Scott Wright, Director of the Crop Development Branch, SAFRR. SIPA's Don Fox is also at the table. We were pleased to be able to meet with National Program Director Steve Morgan Jones and Peter Burnett, Director of the Lethbridge Research Station, at the last meeting.

ICDC, along with SAFRR, very much supports having the provincial irrigation staff co-located at The Centre, and these plans are well underway.



ICDC attracting young people to irrigated agriculture at Swift Current's EnviroForum.

ICDC Supports Sask Agrivision Corp.'s 50 Year Water Development Plan Initiative

ICDC was on the organizing committee and participated last March in the extremely successful Saskatchewan Agrivision Corp. conference "Water: The Economic Driver of the Future." Out of this conference came the consensus that a 50 year water development plan for Saskatchewan was needed. ICDC has, therefore, put some money and in-kind support towards this initiative.

At this time, SAFRR has a number of farmer groups interested in developing new Irrigation Districts from The Qu'Appelle to the South and North Saskatchewan rivers. These prospective irrigators would like their ideas to be part of this 50 year plan.

ICDC Supports Saskatchewan Seed Potato Growers (SSPGA)

SSPGA is one of several partners in The Western Canadian Potato Breeding Consortium, and The Irrigation Centre is one of the Consortium's test sites. ICDC was pleased to be able to help SSPGA by paying their 2003 membership in Consortium "B." The SSPGA's response stated that ICDC's assistance enabled "our continued membership in the Consortium, which will allow Saskatchewan growers the opportunity to remain involved in the potato breeding program in Western Canada."

ICDC "value for money R&D" projects

Please read the articles in this edition of The Irrigator and you will see that our ICDC Agrologists are delivering a quality R&D product to you: the irrigator. The response to our field days indicates that we are hitting on some of the right projects. ICDC is putting your \$0.35/acre to work in partnership with SAFRR, industry, commodity groups and Agriculture and Agri-Food Canada.

ICDC will be calling on Irrigation Districts for their R&D project ideas. This winter the board will be looking ahead to new projects and **ICDC needs your input.**

ICDC/SIPA Web site

www.irrigationsaskatchewan.com

Irrigation Varieties are Special

Clint Ringdal, ICDC Agrolgist

You probably started planning next year's crops this past spring, or maybe even before that when considering your rotations and herbicides. Now that you know what is going on each pivot, you must decide which of the variety options are best for your farm. This is no easy



task with so many new varieties available each year and the varieties you are comfortable with being deregistered. Each company claims to have the next big thing, so who does?

ICDC has been funding CSIDC in Outlook for the past six years to conduct variety trials on commonly grown irrigated crops in Saskatchewan. In that time a lot of data has been collected and is used to make the *Crop Varieties for Irrigation* report that is released annually in early January. This report is a useful tool for irrigators as it compares the varieties, being pushed to their limit, under intensive irrigation management. If a variety has poor lodging or disease resistance it will usually show up in these trials.

When choosing your varieties, availability and price are two obvious factors to consider along with what any comparison chart will show you. Some of the new canola hybrids come with high price tags but can be justified with a good growing season. For every \$1/lb extra seed cost you should expect 1 bu/ac. extra yield to pay for the increase. The weed control options are expanding. There are now Round-up Ready *hybrids* besides the Liberty Link and conventional hybrids to choose from. The speciality canola markets are also interesting to watch. Varieties are improving with increased yield and herbicide options (Round-Up and Clearfield), and there are now speciality hybrids entering the markets. Whether the speciality canola price premiums pay for the expected decrease in yield is an ongoing debate regarding the economics of growing these varieties.

Cereal varieties are also changing quickly. Last year we saw a new market class develop, Hard White Spring Wheat. Although prices have been competitive for this new class, yield has been lower than the new Hard Red Spring varieties. In all market classes the breeders have been doing a good job increasing disease and lodging resistance and pushing yields higher.

Diversification is always a hot topic in the irrigation districts, and each year we see an increase in acres sown to non-traditional crops. Corn received a lot of attention this year as a result of our higher than normal corn heat units. **Yields for silage, grazing and even grain were excellent. The top one acre test strip harvested in the Baildon Irrigation Project yielded 147 bu/ac.** As a result, top hybrid corn seed is expected to be booked up before Christmas. To make sure you get the right corn heat unit



variety for your area with the herbicide package for your crop rotation, start your planning now.

Potatoes also enjoyed the warmer nights and dry conditions of this summer, which helped to deter disease and provide exceptional yields. **This will probably support and push the growing potato industry to higher acreage next year.** Shipping of seed has already begun in the fourth week of October. A small potato variety, Rosara, is on its way to Arizona where potato planting is done in December. Saskatchewan irrigators can deliver special crop varieties with "Northern Vigor."

If you have any questions on these crops or any other cereals, pulses and oilseeds and you cannot wait until the 2004 *Crop Varieties for Irrigation* report is published, call me at 867-5411.

Timothy Economics

**Korvin Olfert PAg, ICDC Agrologist,
Swift Current**



Timothy has been attracting some attention recently as a profitable cash crop.

Timothy is a perennial grass, and as such, once it is established the costs are limited to fertilizer and harvest costs, with perhaps an occasional spray application.

Some timothy fields are as old as ten years, although usually you can expect to take them out of production after five to eight years.

The most common reasons for taking a timothy field out of production is that stand purity has decreased or weeds have started to take over. Perennial weeds such as foxtail, quack grass, dandelion, and some wheat grasses are the most common, with foxtail being the worst because it is easily noticeable in the bale. Some of the weeds such as the wheat grasses cause rejection of the shipment at the receiving port because they are Hessian fly hosts. The rest of the weeds either impair timothy yields or cause feeding disturbances. So weed control is critical before and during establishment.

Since costs vary between farms, you will need to do your own analysis, but here's a general guide.

Establishment Costs	\$/acre
3L Glyphosate + App	36.00
Seed (\$3, 5lb)	15.00
40lb N (\$0.35), 20lb P (\$0.35)	21.00
Fertilizer Application	5.00
Seeding	15.00
Rolling	4.00
Total	96.00



Establishment

In Saskatchewan, fall establishment seems to work the best. So a short season crop (such as oats baled early as greenfeed) and seeding in August or early September is recommended. The main purpose is to get the perennial weeds under control and not have a volunteer problem. The only additional costs may be a few passes of glyphosate in the fall the year before, spring burn-off, and again just before seeding. Other than that, the economics are simply normal costs and income from a greenfeed crop.

Seed costs around \$2.50 per pound, perhaps more if you are looking for a specific new variety, and you'll need 4-5lb/acre. If there are any bare spots the next spring, extra seed can be added then.

Timothy is a small seed so you'll want good seed to soil contact and to direct seed, seed shallow or broadcast and then probably roll afterwards.

You may want to add a little bit of starter fertilizer, but timothy is fairly sensitive to excessive N. Keep the water on often and as long as you can in the fall to ensure a good stand. Band a couple year's worth of phosphorus just before seeding.

Established Stands

Depending on how well you did in controlling weeds during establishment, you may want to do some more spraying during the first few years.

The two most common sprays used are Achieve and Buctril M or MCPA. Achieve works well for controlling some of the common grass weeds, and Buctril M and MCPA for the annual broadleaves. There are other herbicides registered for timothy that may do better with the specific weed problem you might be having.

All grasses need nitrogen, timothy included. For first cut you'll use about 120lb/ac. with an additional 80lb/ac. for second cut. Although leaf burning is not usually a concern, you may want to split up the application and fertigate it on over time.

Best case	Average	Worst case
3.5t of first cut and 0.5t of second cut at #1 export (\$180/t), and 1.0t of second cut at #2 export (\$150/t)	3t of first cut, and 1.5t of second cut all at \$114.74/t	2t of first cut and 1t of second cut at domestic market \$70/t
\$870/acre	\$516/acre	\$210/acre

The phosphorus use will be about 75lb/ac. phosphate per cut.

Since timothy is a high yielding shallow rooted crop, the soil may not have all the potassium available the plant may require. A safe procedure may be to add 50lb/ac. per cut.

Harvesting costs vary quite a bit. There are custom operators in some areas that will do it for you, although timing may be an issue. Their costs run around \$70 per acre, which includes everything from cutting to putting it in the shed. Custom cutting with a haybine is around \$10/acre, and with a discbine around \$13/acre. You should plan on reconditioning or raking everything once (\$5/ac) and about half of it twice. Most processors prefer the big square bales, so custom baling with a big square baler is about \$13.75 per 1500lb bale. Hauling and stacking depends a lot on the distance and if you already own a tractor.

	Complete Package	Job by Job
Established Stands	\$/acre	
Nitrogen (200lb, \$.35)	70.00	70.00
Phosphorus (150lb, \$.35)	52.50	52.50
Potassium (100lb, \$.12)	12.00	12.00
Fertilizer Application	5.00	5.00
Buctril M + App	10.00	10.00
Achieve + App	19.00	19.00
Discbine 2x		26.00
Reconditioning 3x		15.00
Baling (\$13.75, 4b/acre) 2x		110.00
Hauling and Stacking 2x		20.00
Total Package Harvesting 2x	140.00	
Storage	75.00	75.00
Total	383.50	414.50

Storage is required. In a large shed costs run about \$10/t over the lifetime of the shed. Tarping is slightly more expensive although it doesn't require the upfront investment. If you do not

have storage, processors usually will store it for you for around \$15 per ton.

What is not included in these costs is some of the fixed costs like land, irrigation district charges, operating interest, hired labour or any of the costs associated with running the irrigation equipment. I assumed that these costs would be constant with whatever crop you chose to grow. Some of the costs can be reduced by purchasing your own equipment, although if you are planning on seeding several hundred acres you may need two or three sets of harvesting equipment.

Income

Of course yields and prices fluctuate and are not guaranteed, although averages and ballpark figures can be useful.

Yields from first cut are usually between 2 and 3.5 t/acre, with second cut slightly lower at 1-2 t/acre. All together if you get 5t/acre you'll be doing well.

Last year the top quality price was \$200/t. This year it was down to \$180/t mainly due to the strong Canadian dollar. The local hay market prices were around \$70/t this year. So the entire crop should fall between those ranges. This year between 25% and 50% of the first cut was top quality, and between 0% and 25% of second cut. Generally second cut is lower quality than first cut. Alberta Agriculture gives a market price of \$144.75/t which consists of 25% at \$75/t (domestic market), 45% at \$180/t (export #1), and 30% at \$150/t (export #2).

For more information on timothy production contact ICDC Agrologist Korvin Olfert at (306) 778-5041.

The Canadian Hay Association is also a very good source of information on timothy production. They are preparing a timothy manual.

Canadian Hay Association (CHA)
 201, 5403 Crowchild Trail
 Calgary AB
 T3B 4Z1
 Ph: (403) 245-2224

New Bean Variety Highlight of ICDC's Irrigated Dry Bean Field Day

There were ~~many~~ **ICDC Agronomists** ~~and~~ **ICDC Agronomists**



grown commercially in 2003, including one that has never before been grown field-scale in Saskatchewan. Irrigated bean growers in Saskatchewan and Alberta have relied heavily on the same one or two varieties since they started into bean production. Obstacles have been availability of adapted varieties, their acceptance by the higher-end target markets, and effective commercialization of suitable varieties. It is imperative that the quality of new varieties be as good as the standards for the market classes. This is coming together for a number of new varieties, opening the door for more market classes and more choice in variety selection.

AC Redbond is a new variety to come out of Henning Muendel's breeding program in Lethbridge. ICDC's 2003 Irrigated Bean Field Day showcased this new variety to local irrigators and the bean industry. It is more upright than standard wide-row varieties, but is well suited to row-crop production. Redbond filled in the 30" rows in Riverhurst and seems to be quite suitable for either 30" or 22" rows. It has not yet been tried on field-scale as a narrow-row variety for swathing. **The two Riverhurst bean growers who tried AC Redbond this year were very impressed with the variety's yield, structure and quality. The total average yield from one producer's field was 3660lb/ac, an excellent yield by anyone's standards.** AC Redbond's breeder, Henning Muendel with AAFC in Lethbridge, made a special trip

to see these fields and talked to the field day participants about this variety and others that will very soon be commercially available. The local Agricore bean rep, Larry Doherty, was also on hand to talk about this variety that Agricore United has recently licensed for irrigated production in Alberta and Saskatchewan. Both producers who grew this variety were very pleased with its performance in yield, maturity, structure, and quality. For the 2004 season, I expect the Riverhurst irrigators will be eager to try out AC Redbond and other new varieties coming out of Lethbridge. ICDC will be there helping the irrigators to evaluate these varieties as they become available.

Bean producers, breeders, ICDC staff, industry reps, and provincial specialists connected at this informative and interesting field tour. Agricore United's Bean Business Unit sponsored breakfast and most of Riverhurst's irrigators came out. ICDC's Irrigated Bean Field Day featured stops at three bean fields in Riverhurst, where everyone had a look at three interesting new varieties (AC Redbond, Ember, and CDC Pintium). At the CDC Pintium field, the group discussed Dale Ewen's CDC Pintium Pedigreed seed production.

In the afternoon, the field day moved north to the Outlook area for stops at the Canada-Saskatchewan Irrigation Diversification Centre's wide and narrow-row bean variety trials. CSIDC provides the irrigators with local irrigated test results on new varieties, and irrigators can visit the center to have a look at these during the season. Terry Hogg also talked about the bean agronomy trials being conducted at CSIDC. These trials are addressing real concerns of irrigators, and ICDC will keep the irrigators informed of new developments and results of these research projects. **The last stop on the tour was a visit to Keg Agro's seed fields and bean processing facility.** In all, the tour was attended by over 30 participants, over half of whom were current bean producers. It was an excellent opportunity for players in the bean industry to connect, with an emphasis on irrigated bean production, an often neglected portion of Saskatchewan's pulse industry.

**A Banner Year for Dry Bean
Production on Irrigation**



Riverhurst ID Chairman Lorne Jackson, Lethbridge Bean Breeder Henning Mundel, Director Gordon Kent at the ICDC Bean Day

There were few problems with bean production in 2003. A warm growing season with an open fall provided bean producers with high potential for yield and quality. All of the bean acres were combined by early October. CDC Pintium and Winchester varieties were the first varieties to be combined. In the Riverhurst irrigation district, many growers had yields over 3000lb/ac. Typical yields for traditional varieties in wide-row production on these same fields have been 2400 to 2800lb/ac. Quality was generally very good

across the irrigated area, no matter which variety was used.

Disease pressure was down in 2003, as it was for most crops. Most diseases of bean and other crops are favoured by high humidity. Hot, dry weather during flowering and early podding allowed most producers to delay application of Ronilan for control of white mold until after flowering had finished. Single applications were used in areas that have become accustomed to spraying twice. There was little or no white mold development even with delayed control. Apparently this was not the case in Alberta, where delayed white mold control allowed substantial disease development. Saskatchewan's irrigated bean growers took a calculated risk and won this year. Bacterial diseases were also put at a disadvantage by low humidity (even with sufficient irrigation) and warm weather. Little or no copper product (Kocide, Parasol) was applied on commercial acres, though preventative applications were made to pedigreed seed fields. Generally, it was a relatively easy bean year.

www.irrigationsaskatchewan.com

Lana Shaw P Ag, ICDC Agrologist, Outlook

irrigationsaskatchewan.com – your farmer-friendly gateway to irrigation information and contacts on the prairies and around the world is now up and running. If you're not sure how to do it, get your kids to show you how.

The Web site is brought to you by SIPA and ICDC who have a joint committee working on this project.



The Web site is a “work in progress” and it will take another couple

of years to accumulate all the necessary links.

The SIPA/ICDC committee's objective is to have a Web site that is:

- easy to use by rural people
- relevant to Saskatchewan irrigators
- subject driven (for example: the crop section is by crop – beans, durum, alfalfa, etc. – not by organization or institution – CSIDC, SAFRR, AAFC, etc.; and
- doesn't care where or whose information it is so long as it's relevant
- will try to include all irrigation sources in Alberta, Saskatchewan and Manitoba plus North Dakota and Montana
- will get irrigation research “out of the filing cabinets” and into the farmers’ hands

To be effective, SIPA and ICDC need you to “test drive” this site and communicate your opinion and suggestions. The more user feedback we get, the better the site.

For more information, visit us online at www.irrigationsaskatchewan.com

Water: The Next Fifty Years in Saskatchewan

Wayne Clifton, P.Eng.



Excerpts from Saskatchewan Agrivision Corp.'s Conference, "Water: The Economic Driver of the Future," Saskatoon on March 20, 2003.

Obviously, water and management of water, has played a huge role in shaping our past, and presents the opportunity to shape our future.

We are at an economic crossroads. We have the option of staying the present course and accepting a largely vacant province that supports less than a third of the current farm units and continues to produce a very low value of goods and services, or we can plan to change. We have an opportunity to glimpse the future and choose between:

- A sustainable global success based on early adoption of new technologies, careful management practices and serving growing niche markets; or
- A squandered opportunity that leaves the province dependent on large scale subsistence agriculture, brown envelopes from Ottawa, and a portfolio of struggling secondary industry.

A key to that future is how we chose to use our water resources. Construction of the Diefenbaker Dam was supposed to be the start of the new prosperity, but it failed to materialize for a number of reasons. In the intervening four decades, we have achieved less than 10 per cent of the development opportunity that investment, and the majority of that has been in primary agriculture with only limited value-added

activities. Keeping the same pace, and allowing for some cost escalation means we should anticipate meeting 20 per cent of our potential by 2050.

Clearly, a different approach is needed. Water can be a driver, but it is a scarce and valuable resource that must be used carefully to maximize economic return. The major resource pools include:

- Soil moisture, the resource that drives agriculture, forestry and replenishes the groundwater system;
- Surface water in lakes, rivers and reservoirs that varies in quality from very poor in some of the south and central regions to very high in most of the boreal forest region;
- Groundwater, in a complex system of aquifers throughout the province. In general, the better quality water is found in the shallow aquifers; and
- Recycled water, domestic or industrial effluent that has been treated to a level that renders it suitable for re-use.

Future water policies will be driven by products and markets that produce a reasonable economic return, and by environmental and socio-economic criteria that are ever changing as societal values evolve. A long-term flexible and adaptive strategy is needed to address the highest and best use of our water resources, secure and protect the necessary supply, allocate it on an as-required and as-used basis, and align the research and development efforts to coincide with the economic interests of the province.

Water is a renewable resource with a finite, sustainable level of supply. Our challenge is to define the extent of the resource and work with all stakeholders to identify the means to use it as a major economic driver in this new century

This presentation was made at the Saskatchewan Agrivision Corp. conference Water: The Economic Driver of the Future. **The conference proceedings are posted on the SAC Web site www.agrivision.sk.ca**

ICDC helped organize this event and as a

Safe Drinking Water

Excerpts from "Framework for Safe Drinking Water Education Plan: October 1, 2003", published by the Safe Drinking Water Education Committee

Managing water is one of the biggest challenges facing Saskatchewan. We must find ways of ensuring access to significant supplies of potable and affordable water.

Following the tragedy in Walkerton, Ontario, and the outbreak of *Cryptosporidium* in North Battleford, a Long-Term Safe Drinking Water Strategy for Saskatchewan was developed.

The Strategy's principles are:

- human health is our primary concern;
- preventing risks to drinking water;
- openness and clear communication;
- realistic pricing acknowledges the value of safe drinking water; and
- accurate and timely information about water problems is essential.

The Strategy takes a comprehensive, source-to-tap approach, the key features of which include:

- improved source water protection;
- strengthened regulations;

- more public information;
- better training in staff involved in providing drinking water; and
- meeting the technical challenges of providing safe water.

Some key areas of progress include:

- creation of the Saskatchewan Watershed Authority to help better protect water supplies;
- clearer, more effective regulations;
- Communicable Disease Control Manual revised to strengthen water-borne disease procedures;
- improvements in water treatment plant operator training requirements;
- more staff hired to work with communities;
- a new database containing water testing compliance records will be available in April; and
- SaskWater was re-focused to concentrate on helping communities find solutions to water treatment challenges.

These solutions are built on the foundation of a clear and effective regulatory system and a strong education component to help ensure the owners and operators of waterworks and consumers have the information they need about the quality of their drinking water.

2003 Fusarium and Leaf Disease Survey

Clint Ringdal, ICDC Agrologist, Outlook

ICDC Agrologists took part in the SAFRR 2003



disease survey to add a new chapter that would be specifically irrigated cereal results. The Fusarium Head Blight (FHB) survey determined

the prevalence and severity of FHB, monitored its movement in irrigation districts and determined the species responsible. Fifty heads per field in late milk to early dough stage were collected. A Cereal Leaf Disease (CLD) survey also determined prevalence and distribution of CLD, identified the most prominent irrigation CLD pathogens, and may recognize breakdowns in disease resistance in current varieties. Thirty-five flag leaves were collected per field.

Eighteen irrigated fields from several irrigation districts were sampled. Although the final report is not complete it is safe to say that level of disease in all irrigated fields sampled was reduced by favourable growing environmental conditions. The Gardiner Dam Terminal reports that fusarium has not been an issue in any samples they have graded thus far into 2003. ICDC will let irrigators know the results from their fields, as the information becomes available. For more information on this disease survey call 867-5411.

SIPA, ICDC 8th ANNUAL IRRIGATION CONFERENCE

Monday Dec 1 and Tuesday Dec 2, 2003

CIVIC CENTRE, OUTLOOK

AGENDA

Monday, December 1st

5:30 pm

Supper

7:00 pm

IRRIGATION 2020

A Joint Meeting of the Prairie Irrigation Associations, Federal and Provincial
Session Chairman: James Harvey, President, Sask. Irrigation Projects Assoc.

- Irrigation Direction in Alberta
Alberta Irrigation Projects Assoc: Dave Hill, Executive Director
- Irrigation Direction in Manitoba
Assoc. of Irrigators in Manitoba: Doug Berry, President
- Irrigation Direction in Saskatchewan
Sask Irrigation Projects Assoc.: Roger Pederson, Director
- Irrigation in a Pan-Prairie cum Federal Water Strategy
PFRA Director General: Carl Neggers
- Irrigation Strategy in Saskatchewan
SAFRR Crop Development Branch Director: Scott Wright
- General Discussion

9:30 pm

Cash Bar

Tuesday, December 2nd



- 8:00 am Breakfast at the Civic Centre
- 10:00 am Irrigation Crop Diversification Corp. (ICDC) Business Meeting
- 11:00 am Session Chairman Carl Siemens, ICDC Chairman
South West Irrigation: What is it? and Where's it going?
Dan Runcie, District Manager, PFRA Swift Current
- Noon Lunch: **Why in the heck would you move from Alberta to Saskatchewan?**
BJ Boot, Boot Hay Producers
- 1:30 pm Sask. Irrigation Projects Assoc. (SIPA) Business Meeting
- 2:30 pm Session Chairman: James Harvey, SIPA President
Infill and Expansion: What we're doing about it
Riverhurst Irrigation District
- 3:00 pm **West Side Story: The Central Saskatchewan Irrigation Development**
Doug Ball, Chairman of the CSID Steering Committee
- 3:30 pm **Doubling Saskatchewan's Population**
TBA
- 4:15 pm Closing Remarks – James Harvey/Carl Siemens
- 4:30 pm Adjourn

REGISTRATION: PLEASE CALL SANDRA BATHGATE (306) 796-4420



Gaining Ground in the War against Pocket Gophers

Amanda Walker, ICDC Agronomy Assistant, Swift Current



The onset of fall weather marked the beginning of yet another season of baiting pocket gophers on many irrigated alfalfa fields around the province. Beginning in the spring of 2001, ICDC, in conjunction with several irrigated alfalfa producers, began a pocket gopher control program. After three years of running the program, Jerod Yasinowski (Integrated Pest Management Technician, SAFRR) and I were recruited to evaluate the project. Armed with our note pads and road maps, we set out to conduct a survey of some of the alfalfa producers involved in the program in order to gain an overall view of how the program had worked in individual cases, as well as a general feeling of the group as a whole.

Both pocket gophers (moles) and Richardson's Ground Squirrels (gophers) contributed to the rodent problems in forage fields. Most producers reported an overall increase in the pocket gopher population over the past 10 years, and many felt that they had a severe problem (>35% of the field infested) in areas where little or no control measures had been implemented.

Most of the producers felt that an increased

waste of time and energy was one of the biggest problems caused by having pocket gophers in their alfalfa fields. This loss was due to various circumstances such as having to slow down because the field was rough, getting on and off the tractor numerous times to unplug the haybine, or simply an increase in the amount of repairs needed for machinery because of gopher mounds and rough fields. Other types of loss which producers felt were important included increased damage to equipment, loss of crop quality, and loss of crop yield.

Obviously, having identified some of the economic losses caused by pocket gophers, hay growers recognize the importance of implementing a program to control the population. There are numerous methods of doing this (hand baiting, trapping, etc.), however, the biggest factor seems to be the time required to carry these out. Many hay growers found that they simply did not have enough time to get out in the fields to trap or bait when the time was right. Because of these time constraints, producers are learning the value of hiring a Pest Control Officer (PCO) to carry out control operations, which leaves them free to deal with other pressing jobs. **Having a PCO who was able to bait or trap in a timely manner resulted in more effective management and control of pocket gopher populations in many fields.** Producers felt that hiring a PCO was a cost effective venture and worth continuing in the future.

Ultimately, a smooth, bump-free ride across the field is the bottom line when it comes to measuring the success of a pocket gopher control program, and this is what hay growers are looking for more than anything else.

For a copy of the complete evaluation report, contact Amanda Walker (306) 778-5040, Swift Current.

In other news....

The Swift Current ICDC team was also involved in a Pocket Gopher Demo field day in Humboldt on October 6, in cooperation with extension agrologist Don Perrault. This proved to be a very informative and educational experience for all participants, and provided an excellent opportunity to learn more about the characteristics of this pest as well as various

West Nile Virus, Mosquitoes and Irrigation

Scott Hartley, SAFRR Provincial Specialist, Insect/Pest Management

Saskatchewan recorded the highest number of cases of West Nile Virus (WNV) in Canada in 2003. Although there remain a lot of unknown issues surrounding this relatively new disease in North America, a number of factors contributing to the risk of contracting the virus have been identified. The onset of colder weather has finally shut down mosquito activity and associated vectoring capability for this year but there is no doubt that West Nile virus will resurface in 2004.

Disease transmission of WNV is most commonly a result of mosquito's blood feeding and carrying the virus from one animal to another, as with other diseases such as malaria and Western Equine Encephalitis (WEE). In 2002 Eastern Canada was most affected by WNV. The main mosquito in eastern Canada and the United States is *Culex pipiens*. This is considered to be more of an urban species, over-wintering and breeding in storm sewers and catch basins. In Saskatchewan there have been 47 species of mosquitoes recorded, of which *Culex tarsalis* is considered to be the primary vector. It is more of a rural mosquito and has also been a vector of Western Equine Encephalitis. Other species may also play a role as vectors, including *C. restuans* and *Culiseta inornata*. In late September some pools of *Culiseta inornata* tested positive for WNV.

The biology and feeding of each of the species varies to some extent but all have aquatic larval populations and female adults feed most actively between sunset and sunrise. *C. tarsalis* over-winter as adults so do not generally blood feed in the fall. The blood is required for the production of eggs. *C. tarsalis* larvae are usually

found in permanent and semi-permanent ponds, irrigated areas and roadside ditches. However as populations build in the summer season, larvae may be found in temporary water, including artificial containers – e.g. water-filled hoof prints, bird baths, used tires, and heavily polluted water bodies. Even under the dry conditions of 2003, *C. tarsalis* was quite successful in finding the necessary breeding sites required for multiple generations. It appears logical that irrigation can have a close association with mosquito population by providing breeding sites for the aquatic larvae.



Some preliminary observations regarding irrigation and mosquitoes are outlined here and may provide some suggestions for improved management of irrigation with respect to mosquito abatement.

Note that with such sparse, widespread, rural populations on the prairies it is not practical to attempt management of all the potential breeding sites and personal protection (e.g. proper clothing and the use of mosquito repellents containing DEET) will be key in disease prevention for producers, urban populations, golfers or anyone venturing

outside for long exposures.

- Flood systems appear to be worse than pivot irrigation
- Inadequately maintained drains and poorly drained areas become breeding sites
- Continuous and high levels of water application in times of drought
- Lush plant growth (e.g. alfalfa) provides excellent resting sites for adult mosquitoes
- There is a high association with irrigation overflow areas and livestock watering areas.

The images herein show typical *C. tarsalis* breeding sites. They look very familiar as they occur frequently across the prairies. This highlights the fact that it will be impractical to manage all potential breeding sites.

For more information on West Nile Virus visit the Saskatchewan Health Web site at www.health.sk.ca.

King Corn Loved Irrigation in 2003

Les Bohrson, ICDC Senior Agrologist



Great crops are built one day at a time. Saskatchewan's irrigated corn is a 120 plus day marathon from emergence to harvest. The first 70 days develop the factory. The warm environment plus the irrigator's precision planting, fertility placement, weed control and moisture management make every day count. From "Silk Stage" the last 50 days deliver, through reproduction, the quality and quantity of grain energy. Much of the plant's nutritional requirement is still being imported during August and September. Over two tons of dry matter or six tons per acre of corn silage yield is added in a frost-free month of September.

ICDC's corn demonstration included 44 fields with 18 varieties ranging from early 2000 corn heat unit (CHU) to late 2750 CHU varieties. The real difference in this choice is the certainty of maturing 90 bushels per acre with the early one, while getting less than "Vegas odds" of producing 180 bushels per acre from the late one. The good news was apparent by the first of August with one third of our fields at silk stage and standing a full eight feet tall which was a foot taller than 2002's corn. In due course Saskatchewan's 2003 irrigated corn averaged over nine feet tall by September with 31,000 plants per acre. The grain development bushel weight averaged 58 pounds per bushel

with 460 kernels per cob. The best 10 side-by-side cob field samples averaged over 600 kernels per cob from every seedling. That is a 1:600 seed increase.

The corn silage harvest moisture averaged 68 per cent. Half of the silage samples delivered over 71 per cent total digestible nutrients (TDN). That is up from 68% TDN in 2002. Yield reports indicated silage dry matter production from five to seven tons with the top wet weights from 18 to 25 tons per acre. I believe that the 2003 average will exceed the big 2001 silage crop that averaged 16 tons per acre.

For the first time the Alberta Corn Committee (ACC) tested both grain and silage corn varieties at CSIDC in Outlook (2300 CHU).

This irrigated testing had previously been located at Bow Island (2400 CHU), Vauxhall (2300 CHU), Brooks (2250 CHU) and Lethbridge (2100 CHU). Six of the nine major Canadian corn companies paid \$120.00 each for 26 entries. Sponsors include: Advanta Seeds (Garst hybrids), Hyland Seed, Maizex Seeds, Monsanto Canada (Dekalb hybrids), PIONEER HI-BRED, and Syngenta Seeds Canada (NK and Funks hybrids). Silage entries were harvested for whole plant yield and moisture content. Grain varieties were harvested for grain yield, moisture content and test weight. In both cases, great cob development is required to deliver top results. The corn heat unit rating of the 26 entries was from 2000 to 2600 CHU. This range brackets the coolest to warmest summers experienced at Outlook in the last 40 years. Brian Beres heads the Agronomy Unit, Lethbridge Research Centre, and is the Corn Hybrid Trial Coordinator for the Alberta Corn Committee, and Terry Hogg supervised the corn at CSIDC in Outlook.

CSIDC topped all the ACC corn test sites in 2003 and was a great starting point for the September 11 Saskatchewan Corn Field Day. The plots averaged over 22 tonnes per acre with the strength of the late, higher CHU varieties leading the way. The ACC has a brand new Web site at www.albertacorn.com that displays the detailed corn variety comparisons. **For a copy of the 2003 ICDC Corn Demonstration Report call 778-5043.**

Grass Needs Phosphorus

Les Henry

(reprinted from Grainnews, Volume 28, Number 10, May 2002)



In this column I've often taken a run at fertilizer on forages and usually left you with the message:

- 1) N,
- 2) N, and
- 3) N.

Most times we've looked at grass and pointed out that nitrogen and grass go hand in hand and that almost all old grass stands are short of N, need some N and could be reclaimed with a good dose of N. Phosphorus can improve yields after we've pushed the yield up with a high rate of N.

But, in old flood-irrigated plots in southwest Saskatchewan, P has become the limiting factor. A few weeks ago Les Bohrsen sent me some data he and Don Arendt have gathered on the Arendt Farms at Eastend. Les is senior Agrologist with the Irrigation Development Branch of Saskatchewan Agriculture, Food and Rural Revitalization at Swift Current and is the type of guy who makes a difference wherever he goes. Les hails from Hanley and was ag rep at Outlook when this scribe was speaking at town halls. Any town hall we went to with Les in charge was a well run affair and well worth our time. He always made sure we sent farmers home with something to think about.

Back to forage crops, particularly alfalfa. In southwest Saskatchewan there are many small irrigation projects where several farmers have a few small plots that get irrigation water so they have a stable supply of feed for livestock. Many of these plots have received N fertilizer but little or no P over the years. Fifty years of constant

drain on P in the soil has exhausted the supply.

On the Arendt farm at Eastend a tired dandelion-infested irrigated alfalfa field was broken up in 1994. It was border dike irrigation so Don used the individual border strips as plots for an experiment with P fertilizer. He banded 75lb/ac. of P_2O_5 before three years of annual cereal forage.

In 1998 an extra 150lb/ac. P_2O_5 was banded before he seeded alfalfa. By the end of 2001 the total alfalfa yield had more than doubled from 5.1 T/ac. with no phosphorus fertilizer to 11.3 T/ac. with the banded phosphorus – 75lb/ac. P_2O_5 in 1995 and 150lb/ac. in 1998.

Les Bohrsen took the alfalfa yields and converted them on paper to milk and beef. The three year result was an extra 15,000lb of milk or 900lb of beef per acre. Dairy and beef people can figure out what that means in \$\$\$\$\$.

The big bang came from the fact that the phosphorus fertilizer was in the soil ready to go to work as soon as the young and tender alfalfa seedlings needed it. If we establish an alfalfa stand and then try to throw some P fertilizer on top, it's sort of like trying to push a rope. The P fertilizer doesn't move easily into the soil where it's needed.

The bottom line is:

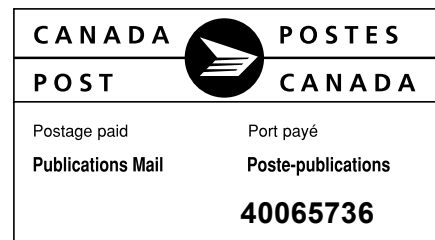
If you're establishing an alfalfa stand on soil that's low in P, think hard about banding about 150lb/ac. of P_2O_5 (300lb/ac. of 12-51-0) before seeding the alfalfa.

Les Henry is a former professor and extension specialist at the University of Saskatchewan. He's now retired, farms, travels and consults.

For more information on this project call Les Bohrsen at (306) 778-5043.

Note: This project was evaluated as part of the PAWBED Final Evaluation done in 2000. The PAWBED Irrigation R&D projects returned over \$4 for every dollar spent. The "agronomic practices" portion of the PAWBED Irrigation R&D, which included this forage fertilization project, returned over \$11 for every PAWBED dollar spent. Good job Bohrsen!

For a copy of the recently published "Henry's Handbook of Soil and Water" write: Henry



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