

## Research Director's Corner

**Garry Hnatowich, Research Director**  
**Irrigation Crop Diversification Corporation**

As we prepare for another field season I take this opportunity to dwell on the past season and update you the membership, on the upcoming season and issues we face as an organization.

We're all aware the 2016 cropping season was one of challenges. In many parts of the province well above rainfall occurred such that for many irrigators pivots remained stationary. Lentil which traditionally accounts for about 1% of the irrigated crop acreage soared to 15 – 20% displacing dry bean as the pulse crop of choice in irrigation country. Likely little irrigation was required for any lentil production. Fusarium Head Blight was endemic and devastating on cereal quality. If anyone has any decent CDC Desire durum available please let me know – we are in need of about 700 kg. 2016 was for many a year of quantity but for very few one of quality. I however, offer the opinion that the 2016 ICDC field program combined both quantity and quality.

A total of 66 research and demonstration trials were conducted at CSIDC and with producer co-operators—in excess of 5,000 plots were established. Varietal evaluation of field crops has continued to be of primary importance and maintains much of our focus. Last season we evaluated approximately 132 cereal varieties (spring & winter wheat, durum, barley, oat, fall rye and corn), 100 oilseed varieties (canola, flax), 100 pulse varieties (pea, dry bean, soybean, faba bean), 36 creamer potato varieties, numerous forage legume & grass varieties, and a number of potential field crops were assessed (Quinoa, Niger, Borage, Marrowfat pea and Japanese bean).



Approximately 30 agronomy research projects were conducted. Broadly these trials included and evaluated such agronomic aspects as crop establishment, soil fertility and fertilizers, seed treatments and inoculants, fungicides, precision farming and new technologies. Numerous of these studies were conducted in

collaboration with such organizations as Agriculture & Agri-Food Canada (AAFC), Prairie Agriculture Machinery Institute (PAMI), University of Saskatchewan (U of S), other Agri-ARM affiliates and private industry. Check out the ICDC Website and our publications at <http://irrigationsaskatchewan.com> for an insight on the breadth and depth of the agronomy program.

Building on our success in 2015, ICDC renewed our interest and focus in horticulture. In association with the Saskatchewan Vegetable Growers Association (SVGA), and overseen by Saskatchewan Ministry of Agriculture's (SMA) staff Connie Achtymichuk, Provincial Vegetable Specialist; Forrest Scharf, Provincial Fruit Specialist and Joel Peru, Irrigation Agrologist an ambitious horticulture demonstration program was conducted. Through financial grants provided by the SMA Agriculture Demonstration of Practices and Technologies (ADOPT) we were able to recruit Ken Achtymichuk as a Seasonal Horticulture Technician and a summer student to assist in the program. Horticultural production of fingerling potatoes, lettuce, Spanish and bunching onions, tomato, cucumber, sweet potato, chili and green pepper were demonstrated. Forrest Scharf continued his efforts to rejuvenating the fruit orchard at CSIDC and the first data collection on Saskatoon berry, dwarf sour cherry, and haskap will begin in 2017. Raspberry and strawberry nurseries were both established in 2016.

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### March 2017

Published by the Irrigation Crop  
Diversification Corporation (ICDC) and the  
Saskatchewan Ministry of Agriculture.  
Available online: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com)



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### Save the Date!

#### CSIDC Field Day

July 13 at CSIDC in Outlook

#### Watch for Upcoming Events

Trickle Irrigation Workshop

ICDC Field Day

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## Research Directors Corner

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Demonstrations of broccoli, cauliflower, Napa cabbage, Bok Choy, late blight resistant tomatoes, shelling peas and sweet red peppers are planned for 2017. The fruit orchard restoration and assessment will also continue. We recognize that these programs are limited in acreage potential, but their high value and reliance on irrigation make them important to ICDC.

During 2016 we sadly expressed goodbye to our first Executive Administrator, Desseri Ackerman, who for family reasons relocated to Edmonton. Desseri was instrumental to ICDC in the smooth transitioning from SMA to ICDC in the roles and responsibilities of administration. I would like to thank Desseri on behalf of the Board of Directors, past and present, and myself for her dedication and service to ICDC. We would not presently be where we are as an organization without her efforts.

Thankfully we were able to fill the Executive Administrator position with a very capable and talented individual, Brenda Joyes. Brenda is native to the Outlook area and comes to ICDC with a varied and extensive background in administration. Brenda and Desseri have worked closely the last few months facilitating the transfer of the position. We have been fortunate in having two gifted and capable individuals guide us through all aspects involved and required of a growing organization. Brenda was hired in a part-time capacity however I suspect this will evolve into a full-time position quicker than anticipated.

A year ago we also were able to recruit and hire, on a full-time basis, Damian Lee as ICDC's Field Crop Technician. Damian is also local, having been born and raised on his family's farm at Macrorie, and until joining ICDC worked with the South Saskatchewan River Irrigation District (SSRID). Damian has successfully concluded his first year with ICDC and is ready and capable of overseeing much of the day to day activities involved in field research activities. This will allow me to spend more time on other activities demanding attention.

ICDC continued to add infrastructure to the corporation. We purchased a used, but in very good condition, truck last spring. After due consideration and investigation it was deemed more cost effective to make this purchase as opposed to a leasing option as we had pursued the previous year. The truck is sufficiently large enough to transport the majority of our in-season staff and tow equipment to off-station locations.

We also entered into a lease position on approximately 15 acres of prime research land adjacent to CSIDC and owned by the Town of Outlook. Access to the field was made possible from the present CSIDC land by the removal of a few trees separating the two properties. The Board of Directors approved, by tender, the purchase and installation of a linear irrigation system that was erected last fall. The cost of water supply to the system was assisted, in part, by a \$20,000 grant from the SMA. The linear system and land will be in operation and use in 2017.

Unfortunately, this additional land will not alleviate a critical land crisis we have at CSIDC. Presently AAFC owns approximately 266 acres of irrigated land at CSIDC, however, it's estimated that only 98.4 acres are suitable for research purposes. Between the partners that make up CSIDC (AAFC, SMA, U of S, SIPA and ICDC) our present research programs require approximately 35-40 acres. A typical required rotation for trialing purposes on any given piece of ground is once every four years. Therefore to accommodate the present sized programs we collectively require a minimum of approximately 140 to 160 acres to maintain a proper rotation. We obviously don't have this land base and it's been presenting difficulties for all concerned. We are literally starting to step on one another in terms of land allocation, our present rotations are at best a 1 in 3 and often we find having to cope with one filler year between trials (i.e. plots – filler – plots). This is neither scientifically sound nor sustainable in term of soil quality and health. For example, short term pulse rotations imposed by necessity have unfortunately resulted in land unable to produce a crop due to root disease pressure. We fear previous years treatments may start influencing results obtained in the present year trials. Call it a treatment hangover! I need to stress these acreage numbers are based on existing sizes of programs. I estimate ICDC's program is approximately 20 acres in size as of 2016 hence we need a total of 80 acres in-total to be self-sustaining at present. Land limitations have recently required me to decline research grant and cooperative research opportunities, to ICDC's detriment! Water will become increasingly important, on a variety of fronts in Saskatchewan, and I envision additional growth and leadership to be looked upon, and developed, from ICDC in future years. Returning to the pre-2011 years of a 5 acre program is, in my opinion, neither desired nor feasible.

To address this concern the Executive Management Committee

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## Research Directors Corner

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(EMC) of CSIDC is exploring all available solutions. The EMC is comprised of two voting representatives from each of the five partners previously mentioned, I attend as a non-voting observer. The EMC is approaching this issue as a collective concern. Ideally we envision requiring up to an additional 160 acres of irrigation land somewhere within the SSRID. How this land can be acquired, and who or how it will be paid for, is being reviewed. This is expected to be a somewhat lengthy process so in the immediate future we will explore a possible 1 – 4 year lease agreement on suitable rental irrigated land within a reasonable distance of travel from CSIDC. Land allocation and cost will likely be assigned to groups on the basis of land usage. This

land issue is a major concern and unless addressed and corrected could have an impact on the nature and viability of CSIDC as it presently exists.

Ending on a positive note we extend an invitation to all our members to attend the CSIDC/ICDC Annual Field Day to be held on July 13. Once again the day will be hosted by SIPA and keep your eyes peeled for additional ICDC field days likely to be occurring in August.

Wishing you all an ideal growing season in 2017.

Garry Hnatowich, ICDC Research Director

## 2017 Trickle Irrigation Workshop

**Joel Peru, PAg, Provincial Irrigation Agrologist, Outlook  
Saskatchewan Ministry of Agriculture  
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The Irrigation Crop Diversification Corporation (ICDC) will continue its horticulture research and demonstration program in 2017. The program will continue to provide Saskatchewan fruit and veggie growers information on variety and agronomic practises for different horticultural crops. Fruit and vegetable growers are currently showing great innovation and success although there is room to grow this industry in Saskatchewan. Growing these crops requires specialized equipment, agronomic expertise and marketing skills that many conventional farmers may not be aware or knowledgeable about. In 2017 ICDC will be hosting a trickle irrigation workshop to help demonstrate some aspects of horticulture to producers that are interested.



This workshop will be a hands-on session that will take place at the Canada-Saskatchewan Irrigation Diversification Centre

(CSIDC) and will be open to anyone wanting to learn about horticulture. The purpose of this workshop is to give producers some general information on practises to help educate them on growing high value fruit and vegetable crops. Industry and government experts will be there to network with producers and provide insight to what might be the best fit for their operation. Producers will also have the opportunity to view the 2017 ICDC horticulture program and interact with the staff that manages it. For the list of horticulture demonstrations that will be present at CSIDC this year see Table 1. The main focus will be on the use of trickle irrigation for horticulture crops which is a technology

**Table 1. 2017 ICDC Horticulture R&D Projects**

Demonstration of Bok Choy for season long supply
Demonstration of Sweet LaRouge Type Red Peppers
Demonstration of Broccoli for season long supply
Demonstration of shelling peas for mechanical harvest
Demonstration of Late Blight Resistant Tomatoes
Demonstration of Sui Choy (Napa Cabbage) for season long supply
Demonstration of Cauliflower for season long supply
Strawberry and Raspberry water and fertilizer management demonstration
Use of photoselective netting to improve productivity of dwarf sour cherry, haskap, and saskatoon berry

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## Fall Rye under Irrigation

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Currently growing winter annuals for grain production under irrigation is not commonly practised in Saskatchewan. The development of hybrid fall rye varieties with high yield potential and improved grain quality may change irrigator's perception of this crop. These hybrids boast many benefits compared to their open pollinated counterparts including reduced height, higher yield potential and better quality allowing access to more markets. Hybrid varieties such as Brassetto, Bono and Guttino are available in Saskatchewan many have proven to be high performing in local field trials.

**Figure 1: Fall Rye Trial at CSIDC**



There are many reasons why a producer would consider planting fall rye under irrigation in Saskatchewan. Including a fall-seeded crop in a crop rotation plan can help producers with time management due to the different seeding date and earlier harvest than spring-seeded crops. Irrigators who have had a potato crop may want to consider planting fall rye to help prevent erosion due to its extensive rooting system. Fall rye is a very competitive crop which reduces weed pressure and herbicide costs. Since it is a winter annual, fall rye can also be useful for breaking disease cycles and adding diversity to a crop rotation. Hybrid varieties produce grain with a high falling number which allows it to enter the bread making market.

Hybrid varieties do come at a large cost (\$50/acre for seed) and have slightly less winter hardiness than open pollinated rye. This is a high input crop should also be treated like high yielding winter wheat and grown on productive land. Producers should not use seed from previous hybrid rye crops due to a reduction of

vigour resulting in a large yield decrease. Fall rye is susceptible to ergot which will downgrade the quality of the crop, making it unsuitable for human consumption.

The Irrigation Crop Diversification Corporation conducted variety trials of fall rye in 2016 at the Canada-Saskatchewan Irrigation Diversification Centre in Outlook (Figure 1). This trial was intended to add to the limited agronomic knowledge for this crop under irrigation. Conventional and hybrid varieties were evaluated and a side-by-side comparison between dryland and irrigated production was available for producers to view. This demonstration showed the increase in performance of a hybrid rye compared to conventional rye varieties when water and nutrients are not limiting factors. The yield results for this project are illustrated in Table 1 and 2. As expected the three hybrid varieties (Brassetto, Guttino and Bono) outperformed the open pollinated. Yields of 140-160 bu/acre were harvested of the hybrids under irrigation and the highest performing open pollinated variety, Hazlet yielded 120 bu/acre. The hybrids also responded well to irrigation and a 25-30 bu/acre yield advantage was achieved.

**Table 1: Irrigated Fall Rye Trial yield Results**

Brassetto	159.6
Guttino	144.6
Bono	140.3
Prima	89.3
AC Rifle	107.0
Danko	117.0
Hazlet	120.4

**Table 2: Dryland Fall Rye Trial yield Results**

Brassetto	129.7
Guttino	118.3
Bono	114.3
Prima	90.0
AC Rifle	102.3
Danko	105.3
Hazlet	106.7

It is important to note that the critical value for the dryland portion of this trial was 19.1 therefore the results were not significant. The full demonstration report is published in the 2016 ICDC Research and Demonstration Report which is available on ICDC's website or in the regional office in Outlook.

## Irrigated Crop Production Surveys

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**Saskatchewan Ministry of Agriculture**  
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Starting in 2016 the Irrigation Crop Diversification Corporation (ICDC) decided to introduce an irrigated crop production survey for lentils. The idea came from several inquiries around production of lentils under irrigation for the 2016 growing season. With limited resources from past years research, it was decided to turn it back to a group of producers willing to participate in a short three part survey to evaluate production decisions throughout the growing season. The hope was that the results would point out production trends that were positive and negative to direct producers and formulate research and demonstration in the future.

The 2016 irrigation lentil survey took into account production from 11 different producers including 5 from the South Saskatchewan Irrigation District (SSRID), 3 from the Riverhurst Irrigation District (RID), and 3 non district irrigated producers. The survey accounted for 1,853 of the 12,756 irrigated lentil acres surrounding Lake Diefenbaker or 7%.

A summary of the spring results from the irrigation lentil survey are as follows: 5 out of the 11 fields were seeded on sclerotinia susceptible stubble such as canola, and all of the fields have had sclerotinia susceptible crops grown on them in the last two years. 2 of the 11 fields had lentils included in the 4 year rotation. All fields were planted with zero or minimum tillage, but it was noted that 4 out of the 11 fields had a crop like dry beans or potato in the rotation that required tillage. Granular Edge® herbicide was applied to 8 of the 11 fields with 7 of them having Edge® applied in fall and 1 in the spring. All the fields surveyed had pre-seed glyphosate applied and were all planted to CDC Maxim small red lentils. 10 out of the 11 fields received seed treatment. Seeding dates ranged from April 29<sup>th</sup> to May 21<sup>st</sup> with an average of May 8<sup>th</sup> planting. Seeding rates ranged from 43 lbs./ac to 67 lbs./ac with an average of 54.4 lbs./ac and seeding depth from 1 to 2 inches with an average of 1.25 inches. 10 out of the 11 fields received fertilizer application. Nitrogen application ranged from 0 to 6 lbs./ac and phosphate ranged from 0-25 lbs./ac. Average nitrogen application was 4.4 lbs./ac and average phosphate was 18.9 lbs./ac. Potassium fertilizer was applied on 2 out of the 11 fields at an average rate of 16 lbs./ac. Micronutrients were applied on 2 out of the 11 fields. All the fields received

inoculant and were land rolled following seeding.

A summary of the summer results from the irrigation lentil survey are as follows: All the fields received a group 2 in-crop herbicide application. 5 out of the 11 fields received a foliar micronutrient application. 4 out of the 11 fields received an insecticide application to control aphids or grasshoppers. All 11 fields received a fungicide application, with 8 fields receiving a 2<sup>nd</sup> application and 1 field receiving a 3<sup>rd</sup> application. 5 out of the 11 fields received irrigation, with 1 field receiving 2 applications of irrigation, and 1 field receiving 3 applications of irrigation. Total irrigation amounts ranged from 0.35 inches to 1 inch, and application per/irrigation ranged from 0.3 inches to 0.6 inches.

A summary of the fall results from the irrigation lentil survey are as follows: All the fields received a pre-harvest herbicide, with 3 out of the 11 receiving glyphosate plus Heat®, and 8 of the 11 receiving glyphosate alone. All the fields were direct harvested with a straight cut header between the dates of August 16<sup>th</sup> and September 26<sup>th</sup> with an average harvest date of August 29<sup>th</sup>. Yields ranged from 10 to 40 bu/ac, with an average yield of 23.1 bu/ac. 4 out of the 11 fields graded a #2 or better, 5 out of the 11 were an extra 3, and 2 out of the 11 were graded #3. Total rainfall throughout the growing season ranged from 16 to 22 inches, with an average of 17.5 inches of rain.

Overall a lot was learned from a relatively small sample size. It is with great thanks to the producer's willingness to share their production information that could make this survey successful. Looking into the next growing season ICDC has decided to extend this survey to cover a different crop in 2017.

If you are interested in more information about the past years irrigation lentil survey results, suggestions for the 2017 crop that should be surveyed, or contributing your production information in 2017, please contact Jeff Ewen - Irrigation Agrologist - Saskatchewan Ministry of Agriculture - Phone: (306) 867-5512 or Email: [jeff.ewen@gov.sk.ca](mailto:jeff.ewen@gov.sk.ca)

Check the website at:  
<http://saskatchewanirrigation.com> to stay current on our publications and newsletters.  
Watch for news and upcoming field days and events.

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## Summary of First Year of Forage Fertilization Project: Lodge Creek

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Saskatchewan Ministry of Agriculture**  
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Irrigated forage producers in southwest Saskatchewan question the value of fertilization for their long term forage stands because they believe the yield response is not sufficient to warrant the fertilizer application. Does the increased production cost of the fertilizer application pay dividends with an increase in forage production?

A producer at Lodge Creek Irrigation District noticed a production difference between two sides of his hay field. Soil samples were collected from both sides of the field to investigate differences in the soil fertility assuming that the cause for the difference in growth was soil quality due to land leveling and burial of topsoil when the border dykes were constructed. The differences in soil analysis, shown in Table 1, include the following:

- 1) Lower organic matter for the "poorer" soil
- 2) Higher pH at depth perhaps due to sodium in the profile for the "poorer" soil.
- 3) Lower potassium availability for the "poorer" soil.

Although the likelihood of these observations being correct is strong, subsequent field evaluation identified the main difference between the two areas was not soil fertility but the species of grass. One side was smooth brome grass and the other side was meadow brome grass. The perception was due to the excellent regrowth potential of meadow brome grass compared to smooth brome grass. (See Table 1)

A two year ADOPT project (Agricultural Demonstration of Agricultural Practices) was initiated at Field 17, SE12-2-30-W3 near Govenlock in the fall of 2015 based on the soil analysis. The stand selected for this project south of Consul had never been fertilized prior to the project being conducted. The treatments were kept simple to demonstrate potential strategies for forage fertilization on Southwest irrigated soils. The treatments are listed in Table 2.

A long term forage stand needs to be defined for southwest conditions. Some forage producers keep their forage stands in production for many years before reseeding the stands. The rationale for this management style is based on risk avoidance.

The region experiences occasional extended periods of drought without much warning. The soils on the irrigated sites are usually heavy textured and easily crust increasing the risk for establishment failure even with gravity irrigation. Some fields contain significant portions of sodium affected areas which reduce water infiltration and the effective rooting depth of the forage. Making the decision to rejuvenate a forage stand, especially without availability of low disturbance seeding implements and capability for sprinkler irrigation assumes considerable risk for a shortage of feed supply if re-establishment efforts fail due to lack of rainfall or crusting of the soil surface. Because the stand receives no fertilizer input and experiences constant nutrient withdrawal through forage harvesting, the proportion of alfalfa within the stand declines steadily as the stand ages. Depending on the producer's objectives and tolerance for risk, the loss of alfalfa from the stand can be sufficient to justify re-establishment, but some growers prefer to have some hay as opposed to no hay.

The yield results for the 2016 project are summarized in Table 3. As indicated, the first year forage yield response was not large from the nutrient applications and indicates one reason why producers are reluctant to invest in fertilizer application at this site. The prominence of grass in the stand and presence of meadow brome grass as the main species were both unexpected observations. The fertilizer treatments selected for this demonstration assumed a high proportion of alfalfa in the stand. Given that the stands are predominantly grass, nitrogen would likely have provided a larger yield response, but was omitted from the treatment list because of anticipated N fixation of alfalfa. From the fertilizer programs implemented at the site, the largest and most economical nutrient response occurred surprisingly with potassium fertilizer. The presence of nitrogen in the phosphorus fertilizer also contributed to the yield response, but this nitrogen was not added at a high enough rate to provide a strong nutrient response. In the same way, sulphur in the zinc fertilizer likely had the largest impact on the yield response observed with

**Table 1: Soil analysis of two areas with differential productivity at Lodge Creek Irrigation District.**

		pH	OM	N	P	K	S	Cu	Fe	Mn	Zn	B
Site	Depth		(%)	----- ppm -----								
Poor	0-6	7.5	3.1	1	2	217	11	1.3	16	4.9	0.6	1.1
Poor	6-12	8.3		1			24					
Better	0-6	7.4	4.3	6	3	300+	8	1.1	13	5.0	0.6	1.7
Better	6-12	8.0		1			11					

**Table 2: Fertilizer applications to Field 17, Lodge Creek Irrigation District (see Figure 1)**

Treatment	Fertilizer Applied	Rate of Blend (lb/ac)
Control	None	None
Phosphorus	50 lb P <sub>2</sub> O <sub>5</sub>	115 lb 11-51-0 /ac
Potassium	80 lb K <sub>2</sub> O	128 lb 0-0-60 / ac
Phosphorus/ Potassium	50 lb P <sub>2</sub> O <sub>5</sub> + 80 lb K <sub>2</sub> O	243 lb 5-22-35-0 /ac
Phosphorus/ Potassium/Zinc/ Sulphur	50 lb P <sub>2</sub> O <sub>5</sub> + 80 lb K <sub>2</sub> O + 4 lb Zn + 4 lb S	243 lb 5-22-35-0 /ac + 16 lb Zn product / ac

the zinc sulphate. Further selective tissue testing in 2017 will provide better answers to the question of which nutrients were most beneficial and what nutrients were neglected in the fertility program. The project will continue for one more year without additional nutrient application to monitor the residual value of the fertility treatments.

Because of the modest yield response observed for the project, a suggested nutrient treatment for a forage stand with at least 30% alfalfa is 20-50-50-10 (9-23-23-10 applied at 220 lb/ac). The cost for this treatment is \$50/ac, but the yield response is anticipated to be about 0.66 t/ac. Any comments on your personal experience with fertilization of forage stands are appreciated.

**Table 3: Forage response from fertilization at Field 17, Lodge Creek Irrigation District**

Treatment	Hay Yield (t/ac)	Increase in Yield Above Control (t/ac)	Fertilizer cost/ ac	Cost/ton forage increase	Amortization
Control	1.94		Nil	Nil	None
Phosphorus (+N)	2.06	0.12	18.24	152.01	3 yr
Potassium (+N)	2.17	0.23	12.94	56.25	3 yr
P+K(+N)	2.19	0.25	31.18	124.71	3 yr
P+K+Zn(+S)	2.39	0.45	41.79	92.86	3 yr PK, 10 yr Zn

**Figure 1: Project layout at Field 17, Lodge Creek Irrigation District**

It should be noted that the rainfall patterns at the site were above average for 2016. The thirty year average for the South-west corner of Saskatchewan is 240 mm compared to 287 mm for 2016.

**Acknowledgements:** Mike Leismeister for hosting the demonstration. Randy Stokke for providing emergency boosting service to staff stranded at the site.

## 2017 Trickle Irrigation Workshop

widely used in major producing locations such as California.

Trickle irrigation is a very efficient and cost effective way to apply water to a crop. Its major drawback is its labour requirement making it mostly suited for high value crops such as fruits and vegetables. Trickle irrigation applies water directly to the soils through emitters connected to a hose or drip tape. The water “trickles” from the emitter directly in the soils which allows the plant canopy to stay dry, reducing disease pressure.

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Often a plastic mulch is rolled over the drip tape and the crop is seeded through the plastic to prevent weed competition and water from evaporating. Specialized machinery including a plastic mulch roller and a water wheel planter will be some of the equipment demonstrated at this workshop. Watch for a detailed agenda on ICDC’s website and twitter feed for more information on this upcoming workshop.



# Soybean Seeding Date and Seed Treatment Study

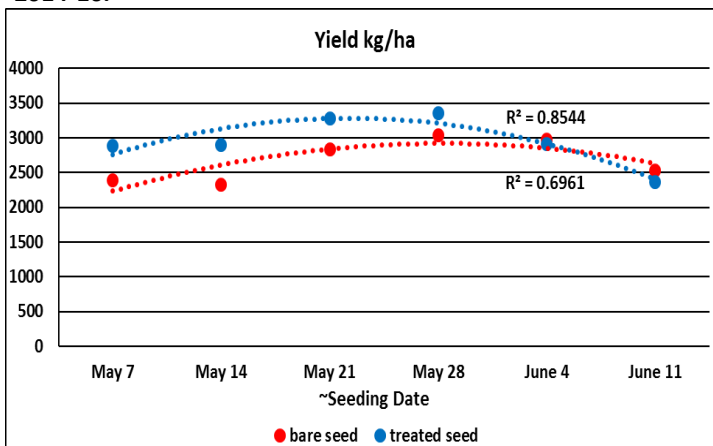
**Garry Hnatowich, Research Director**  
**Irrigation Crop Diversification Corporation**

A three year study has concluded evaluating the impact of seeding dates and seed treatments on the yield of irrigated soybean. ICDC gratefully acknowledges the financial support for this project provided by the Saskatchewan Ministry of Agriculture, the Western Grains Research Foundation and the Canada-Saskatchewan Growing Forward 2 bi-lateral agreement. Soybean, variety 23-10RY, was seeded at 7 day intervals beginning on May 7 and concluding on June 11 (approximate dates for all 3 years of the study). At each seeding date untreated or bare seed was planted and compared to seed planted with a dual fungicide/insecticide treatment.

Optimal seeding date occurred between May 21 and May 28 (Figure 1). Earlier seeding dates resulted in fewer plants/ha, fewer pods/ha and a greater number of pods with insufficient positional height on plants to prevent harvest losses and therefore lower yielding. In general, seeding beyond May 28 resulted in fewer pods/ha, lower yields and greater risk to maturity to fall killing frost. Application of a chemical fungicide/insecticide seed treatment was highly beneficial, particularly for May planting

dates. Average yield benefit to a seed treatment for May planting dates was 17.4%, average benefit for June plantings was -4.1%.

**Figure 1. Soybean Yield vs Seeding Date and Seed Treatment, 2014-16.**



For details on this project, refer to ICDCs 2014, 2015 and 2016 Research and Demonstration Reports. A final report will be available soon on the ICDC website (see ICDC Publications) located at <http://irrigationsaskatchewan.com> or contact Garry Hnatowich.

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South Sask River Irrigation Dist  
 Non-District  
 Grainland  
 Riverhurst  
 Miry Creek  
 Consul-Nashlyn  
 Moonlake

### Development Area

LDDA  
 LDDA  
 SEDA  
 SWDA  
 SWDA  
 NDA

### Term Ends

2017  
 2018  
 2017  
 2017  
 2017  
 2017

### Appointed Board Members

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 Kelly Farden  
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### Organization

Saskatchewan Irrigation Projects Association  
 Saskatchewan Irrigation Projects Association  
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 Saskatchewan Ministry of Agriculture

### Term Ends

December 2017  
 December 2017  
 December 2017  
 December 2017