



# **Irrigation Research and Demonstration Projects 2008**

**Sarah Sommerfeld, PAg.  
Irrigation Agrologist  
ICDC/SIPA Annual Conference  
December 8 & 9, 2008**



Saskatchewan  
Ministry of  
Agriculture

# Outline

- 💧 **Alfalfa Management Trial**
- 💧 **Canola Fertility Management**
- 💧 **Irrigation Scheduling and Crop Development**
- 💧 **Strawberry Crown Commercialization**
- 💧 **Potential projects for 2009**



# Alfalfa Management Trial

**Objective: To compare the yield performance of seven alfalfa varieties under intensive management**

💧 **Field scale plot design at CSIDC (15' x 375'/plot)**

💧 **Three cut system**

💧 **Measure:**

- Yield
- Persistence
- Quality



# Alfalfa Management Trial

- **75 lb./acre P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O annually**
- **Seeded June 4<sup>th</sup> @ 12.5 lb./acre**

## • **Varieties**

- **Equinox**
- **53Q30**
- **Stealth SF**
- **Hybriforce 400**
- **2065 MF**
- **AC Longview**
- **AC Blue J**

# Canola Fertility Management

**Objective: To document the management practices, crop inputs and development of an irrigated canola crop with a comparison to a high nitrogen fertility area.**

**Producer Co-operators: Roger Pederson, Outlook, SK  
Kelvin & Barb Bagshaw, Birsay, SK**



# Canola Fertility Management

- 💧 Achieve 210 lb./acre total soil N (high N area)
- 💧 Install scheduling equipment
- 💧 Monitor crop development, inputs, disease and insects, irrigation and rainfall
- 💧 Compare high nitrogen area and field
  - Yield
  - Economics

# Canola Fertility Management

## Pederson site

- 💧 Pioneer variety 45H21
- 💧 Seeded May 21<sup>st</sup> @ 4.25 lb./acre
- 💧 Roundup Weathermax 0.5L/acre
- 💧 No fungicide application
- 💧 2007 crop - potato



# Canola Fertility Management

Pederson site

Nutrient	Residual 60 cm (24") lb/acre actual	Spring Applied	
		Field	Test Area
NO <sub>3</sub> -N	117	0	92
P	52	10	10
K	1380	10	10
SO <sub>4</sub> -S	163	0	0

# Canola Fertility Management

## Bagshaw site

- Pioneer variety 45H26
- Seeded May 3<sup>rd</sup> @ 4.9 lb./acre
- Two applications Roundup Weathermax @ 0.33 L/acre
- Hail damage June 26th
- Aerial application Proline fungicide
- 2007 crop - peas



# Canola Fertility Management

## Bagshaw site

Nutrient	Residual 30 cm (12")	Spring Applied		
		Seeding	Broadcast	
	Field		Test Area	
lb./acre actual				
NO <sub>3</sub> -N	49	10	130	180
P	43	25	10	10
K	>1080	0	0	0
SO <sub>4</sub> -S	>86	5	0	0

# Canola Fertility Management

## Pederson site

<b>Treatment</b>	<b>Area Acres</b>	<b>Weight Pounds</b>	<b>Yield bu./acre</b>
High Nitrogen Area	0.370	932	50.4
Field	0.629	1395	44.3

## Bagshaw site

<b>Treatment</b>	<b>Area Acres</b>	<b>Weight Pounds</b>	<b>Yield bu./acre</b>
High Nitrogen Area	0.718	1934	53.9
Field	0.718	1830	50.9

# Canola Fertility Management

<b>Site</b>	<b>N Difference Pounds</b>	<b>N cost* \$</b>	<b>Yield gain bu./acre</b>	<b>Yield gain** \$/acre</b>	<b>Net \$** \$/acre</b>
Pederson	92	51.52	6.1	73.20	21.68
Bagshaw	50	28.00	3.0	36.00	8.00

\*Based on nitrogen price of \$.56/lb. (ICDC Irrigation Economics and Agronomics, January 2008)

\*\*Based on canola market price of \$12.00 (ICDC Irrigation Economics and Agronomics, January 2008)

# Canola Fertility Management

Pederson site – Fall soil sampling

<b>Nutrient</b>	<b>Soil Nutrient Levels - Field Check</b>			
	lb./acre			
<b>Depth</b>	<b>NO<sub>3</sub>-N</b>	<b>P</b>	<b>K</b>	<b>SO<sub>4</sub>-S</b>
0-30 cm	5	9	434	>82
30-60cm	3	3	364	67
60-90 cm	6			
90-120 cm	6			

<b>Nutrient</b>	<b>Soil Nutrient Levels - High Nitrogen Area</b>			
	lb./acre			
<b>Depth</b>	<b>NO<sub>3</sub>-N</b>	<b>P</b>	<b>K</b>	<b>SO<sub>4</sub>-S</b>
0-30 cm	16	9	535	>82
30-60cm	3	6	448	>82
60-90 cm	6			
90-120 cm	5			

# Canola Fertility Management

## Bagshaw site – Fall soil sampling

Nutrient	Soil Nutrient Levels - Field Check			
	lb./acre			
Depth	NO <sub>3</sub> -N	P	K	SO <sub>4</sub> -S
0-30 cm	38	24	814	>86
30-60cm	21	9	539	>86
60-90 cm	8			
90-120 cm	11			

Nutrient	Soil Nutrient Levels - High Nitrogen Area			
	lb./acre			
Depth	NO <sub>3</sub> -N	P	K	SO <sub>4</sub> -S
0-30 cm	33	9	575	>86
30-60cm	22	6	447	>86
60-90 cm	21			
90-120 cm	17			

# Canola Fertility Management

💧 Why a marginal response?

## Bagshaw site

- High nitrogen site
- Variable crop establishment
- Hail damage and blackleg

## Pederson site

- ?????

💧 Where did the nitrogen go?

- High nitrogen biomass??



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*Irrigation Crop Diversification Corporation*

# Irrigated Canola Field Day

Thursday, July 10, 2008

12:30 p.m.

Meet at 12:30 p.m. at the Irrigation Development Branch office,  
410 Saskatchewan Avenue West, Outlook. The group will then travel to the  
Irrigation Crop Diversification Corporation (ICDC) demonstration site where the field day will be held.

Please pre-register by calling 867-5500.

There is no registration fee.

## Speakers and topics

*Sarah Sommerfeld, PAg — Irrigation scheduling*  
Irrigation Specialist,  
Saskatchewan Ministry of Agriculture

*Terry Hogg — Variety trials*  
*at the Canada-Saskatchewan Irrigation*  
*Diversification Centre (CSIDC)*  
Agronomist, CSIDC

*Faye Dokken, PAg — Canola disease and*  
*management*  
Provincial Plant Disease Specialist  
Saskatchewan Ministry of Agriculture

*Scott Hartley, PAg — Canola Insect/Pest*  
*Management*  
Provincial Insect/Pest Specialist  
Saskatchewan Ministry of Agriculture

**For more information, contact Sarah  
Sommerfeld in Outlook:  
phone 306-867-5521**

or

**e-mail [sarah.sommerfeld@gov.sk.ca](mailto:sarah.sommerfeld@gov.sk.ca).**



# Irrigation Scheduling and Crop Development

**Objective: Monitor soil water conditions, crop water use and crop development to assist producers to schedule irrigation operations. To utilize the Alberta Irrigation Management Model to forecast an irrigation requirement.**

**Producer Co-operators: Scott Anderson, True North Seed Potato Co., Outlook, SK**

**Barry and Elayna Vestre, Outlook, SK**

# Irrigation Scheduling and Crop Development



# Irrigation Scheduling and Crop Development

- Install moisture monitoring equipment
- Weekly site visits
- Scheduling report to co-operator
- Cross reference report with AIMM



# Strawberry Crowns

- Final year of three year project
- Supply high quality crowns to commercial producers in Florida
  - White tag and Registered plants



# Strawberry Crowns

## What has been learned?

- 💧 Crowns can be successfully grown in SK
  - 2008 production:
  - 14 to 39 total crowns per plant
  - 10 to 20 marketable crowns per plant
  - Target premium price - \$140/1000 crowns
- 💧 Gross return/acre = \$14,000/acre
- 💧 High labor requirement



# Strawberry Crowns

- 💧 Florida market opportunities established
- 💧 Disease and pests are a threat
  - 2008 trial infected with Anthracnose (Colletotrichum spp.)
  - 2008 trial destroyed to ensure no export of infected crowns
  - Closed system is required

# Potential 2009 Projects

- 💧 Sclerotinia resistant canola variety comparison
- 💧 Canola fertility
  - N timing, P
- 💧 Pasture mixes
- 💧 Soybean varieties
- 💧 Grazing corn
- 💧 Scheduling, Scheduling, Scheduling

# Acknowledgements

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- 💧 IDB colleagues

**Thank You!!**

