



*Irrigation Crop Diversification Corporation*

**Irrigation Economics and Agronomics  
Saskatchewan  
2009**

# IRRIGATION ECONOMICS AND AGRONOMICS SASKATCHEWAN 2009

*These budgets are to be used as guidelines only.*

*The actual farm-to-farm variation can be significant.*

<b>- CONTENTS -</b>		<b>PAGE</b>
<b>ASSUMPTIONS</b>		<b>1</b>
<b>CEREALS</b>	<b>HARD WHEAT</b>	<b>3</b>
	<b>DURUM</b>	<b>4</b>
	<b>CPS WHEAT</b>	<b>5</b>
	<b>SOFT WHEAT</b>	<b>6</b>
	<b>MALT BARLEY</b>	<b>7</b>
	<b>FEED BARLEY</b>	<b>8</b>
<b>OILSEEDS</b>	<b>CANOLA</b>	<b>9</b>
	<b>BROWN/ORIENTAL MUSTARD</b>	<b>10</b>
	<b>YELLOW MUSTARD</b>	<b>11</b>
	<b>FLAX</b>	<b>12</b>
<b>PULSES</b>	<b>PEA</b>	<b>13</b>
	<b>FABABEAN</b>	<b>14</b>
	<b>RED LENTIL</b>	<b>15</b>
	<b>DRY BEAN</b>	<b>16</b>
<b>FORAGES</b>	<b>GRAIN CORN</b>	<b>17</b>
	<b>CORN GRAZING</b>	<b>18</b>
	<b>CORN SILAGE</b>	<b>19</b>
	<b>BARLEY SILAGE</b>	<b>20</b>
	<b>ALFALFA seedling</b>	<b>21</b>
	<b>established 2 cut</b>	<b>22</b>
	<b>established 3 cut</b>	<b>23</b>
	<b>TIMOTHY</b>	<b>24</b>
	<b>ANNUAL RYEGRASS</b>	<b>25</b>
	<b>PASTURE seedling</b>	<b>26</b>
	<b>established</b>	<b>27</b>
<b>POTATOES</b>	<b>SEED POTATO</b>	<b>28</b>
	<b>TABLE POTATO</b>	<b>29</b>
<b>APPENDIX A</b>		<b>30</b>

## **For more information:**

Irrigation in Saskatchewan website:

[www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com)

Saskatchewan Ministry of Agriculture - Irrigation Branch - Outlook  
(306) 867-5500

## Irrigation Crop Budget Assumptions

- Projected crop prices and fertilizer prices in 2009 are estimated for the purposes of budgeting based on February 1 price indications. Use the latest available fertilizer costs and crop prices to calculate returns.
- Saskatchewan Crop Insurance Corporation rates are for 70% coverage.
- Seed costs are taken from the Saskatchewan Ministry of Agriculture Crop Planning Guides 2009 where applicable and also from industry. Refer to Appendix A for more details.
- Seed treatment/inoculation information from dealers and Saskatchewan Ministry of Agriculture 2009 Guide to Crop Protection. Cereals are treated with Dividend at high rate. Canola is treated with Helix. Flax is treated with Vitaflo.
- Fertilizer price from industry February 1, 2009;
  - o Nitrogen based on 46-0-0 at \$550/tonne (\$0.54/lb)
  - o Phosphorus based on 12-51-0 at \$750/tonne (\$0.59/lb)
  - o Potassium based on 0-0-62 at \$1000/tonne (\$0.73/lb)
- Herbicide, insecticide, and fungicide costs are based on dealer information. Refer to Appendix A for more details on herbicides.
- Equipment fuel and repair based on Saskatchewan Ministry of Agriculture Crop Planning Guides 2009 numbers for conventionally-tilled grain crops where applicable. Equipment fuel and repair for other crops estimated based on producer experience.
- Custom work and hired labour based on industry information (\$15/hour). Refer to Appendix A for more details on custom work.
- Irrigation application rates used for calculation of pumping costs and water service costs are based on stored soil moisture and precipitation of 8.5 inches for normal season crops (cereals, oilseeds, pulses, potatoes) and 9.5 inches for perennial and long-season crops (perennial forages, corn), which is the long-term average for the Outlook area.
- Irrigation pumping costs/power based on 40 hp pump on a 7 tower low pressure pivot with an annual cost of about \$1860 for 133 acres.
- Irrigation repair based on 1.5% of \$90,000 (pivot cost) over 130 acres.
- Irrigation service charge based on projected 2009 rate for SSRID (base \$19.40, with a water usage adjustment; \$3.50 for 12 inches).
- Crop insurance based on 2008 rates at 70% for soil class F in Risk Area 12. See Generic Insurance Cost Calculator at [www.saskcropinsurance.com](http://www.saskcropinsurance.com) for 2009 rates released in March.
- Hail insurance is based on \$150.00/ac coverage at 5.2% premium for crops insured at the basic rate.
- Other is a catch-call category for expenses not covered above. Refer to Appendix A for more details.
- Farm overhead includes property tax, auto expenses, building repairs and insurance, small tools.
- Operating interest is 4.1% for 6 months (consistent with Saskatchewan Ministry of Agriculture Crop Planning Guides).

- Farm equipment and buildings is an expense based on the payment equivalent of each piece's current value at 5.5% interest for the given life of the item.
- Irrigation system cost is equal to a payment at 5.5% interest based on a system value of \$45,000 (50% of new cost \$90,000) over 25 years and 133 acres.
- Special Crop Equipment
  - o Row crop equipment used in dry bean and corn budgets (planter, cultivator, etc.) had 600 acres use annually for 10 years.
  - o Grain corn header used on 300 acres for 10 years.
  - o Side knife (canola, mustards and fababeans) used on 600 acres annually for 10 years.
  - o Pulse equipment (flex header, roller) used on 600 acres annually for 10 years.
  - o Hay equipment: baler and swath inverter are used on 500 ac annually for 10 years; shed, mower and bale mover used on 500 ac annually for 15 years.
  - o Cross fencing (10 year life); permanent fencing (15 year life); water supply for grazing corn and perennial pasture (15 year life).
  - o Potato field equipment (10 year life), storage / handling equipment (10 year life), and storage facility (15 year life) are used on 500 acres.
- Land investment cost based on a return of 4.5% of a quarter of land valued at \$70,000 over 160 acres.
- High, medium and low yields are based on producer experience – they represent good management with fluctuation in environmental conditions and soil productivity.
- Freight and marketing costs have not been included in these budgets. These costs are area and situation specific.

## ECONOMICS

**CROP: HARD WHEAT**

Item	Unit	My Farm	
		\$/ac	\$/ac
Seed			\$17.16
Seed treatment			\$5.50
Fertilizer:	N 110 lb		\$59.67
	P 40 lb		\$23.57
	K 10 lb		\$7.32
Herbicide			\$25.00
Insecticide *			\$0.00
Fungicide **			\$0.00
Equipment fuel			\$12.58
Equipment repair			\$6.18
Custom work			\$5.00
Irrigation power	10 inches		\$14.00
Irrigation repair			\$10.15
Irrigation service/water charge			\$22.32
Crop insurance †	46 bu/ac		\$4.78
Hail insurance			\$7.80
Hired labour	0 hr/ac		\$0.00
Other			\$0.00
Farm overhead			\$9.20
Operating interest	4.1 %		\$4.72
<b>Total Cash Costs</b>			<b>\$234.95</b>
Farm Equipment & Buildings			\$23.45
Irrigation System			\$25.22
Specialized Equipment			\$0.00
Land			\$19.68
<b>Total Non Cash Costs</b>			<b>\$68.36</b>
<b>Total Costs</b>			<b>\$303.31</b>
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>
Yield bu/ac	50	65	80
Price \$/bu		\$6.50	
<b>Gross Return</b>	<b>\$325</b>	<b>\$423</b>	<b>\$520</b>
<b>Net Return</b>	<b>\$22</b>	<b>\$119</b>	<b>\$217</b>
Specialized Equipment			\$/ac/yr
<b>TOTAL</b>			<b>\$0.00</b>

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

### Variety Selection:

5602HR combines high yield with reduced fusarium head blight damage. Superb is high yielding. Snowstar is the highest-yielding hard white wheat. Select an irrigated variety on the basis of high yield, lodging resistance and disease resistance. See 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed before May 15th.

Plant population	220 to 270	plants/sq m.
TKW	42.0	grams
Seeding Rate	110.0	lb/ac

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total seasonal crop water use: 460 mm

Emergence to Tillering: 1.0 to 4.5 mm/day

Stem Extension to Heading: 3.5 increasing to 6.5 mm/day

Flowering to Late Milk: 5.5 to 7.5 mm/day

Early Dough to Maturity: 6.5 decreasing to 2.0 mm/day

Critical stages for moisture are tillering and flowering. Maintain soil at >50% available moisture. Use a soil probe to check moisture status. Allow the canopy to dry between irrigations to minimize disease pressure and lodging.

### Harvest:

Swath at a kernel moisture content of 30-40%. The kernel will dent with pressure. In some years the straw may still be green. Decide on the basis of grain firmness and colour.

### Handling, Storage and Grading:

Tough 14.6%; damp 17.0%

### Rotations and Crop Protection:

Fungicide seed treatment recommended. Wheat on wheat stubble will yield at least 15% less than wheat on broadleaf stubble due to disease build-up. Break from cereals for one year. Fusarium head blight is a concern on irrigation. Hard wheat is less susceptible than durum. Fungicide application may be necessary.

\* Wheat midge may require control.

\*\* Leaf Diseases and/or fusarium head blight may require control with fungicide.

† Crop Insurance rates currently under review.

## ECONOMICS

**CROP: DURUM**

Item	UNIT			\$/ac	My Farm \$/ac
Seed				\$21.00	
Seed treatment				\$5.50	
Fertilizer:	N	130	lb	\$70.52	
	P	40	lb	\$23.57	
	K	10	lb	\$7.32	
Herbicide				\$24.00	
Insecticide *				\$0.00	
Fungicide **				\$24.00	
Equipment fuel				\$12.58	
Equipment repair				\$6.18	
Custom work				\$5.00	
Irrigation power	10	inches		\$14.00	
Irrigation repair				\$10.15	
Irrigation service/water charge				\$22.32	
Crop insurance †	54	bu/ac		\$9.61	
Hail insurance				\$7.80	
Hired labour	0	hr/ac		\$0.00	
Other				\$0.00	
Farm overhead				\$9.20	
Operating interest	4.1	%		\$5.59	
<b>Total Cash Costs</b>				<b>\$278.34</b>	
Farm Equipment & Buildings				\$23.45	
Irrigation System				\$25.22	
Specialized Equipment				\$0.00	
Land				\$19.68	
<b>Total Non Cash Costs</b>				<b>\$68.36</b>	
<b>Total Costs</b>				<b>\$346.70</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>		
Yield bu/ac	55	70	85		
Price \$/bu (#2 11.5%)		\$7.50			
<b>Gross Return</b>	<b>\$413</b>	<b>\$525</b>	<b>\$638</b>		
<b>Net Return</b>	<b>\$66</b>	<b>\$178</b>	<b>\$291</b>		
Specialized Equipment				\$/ac/yr	
<b>TOTAL</b>				<b>\$0.00</b>	

### More Information:

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## AGRONOMICS

### Variety Selection:

Napoleon, Strongfield, AC Avonlea. Select an irrigated variety on the basis of high yield, lodging resistance and disease resistance. See 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed before May 15th.

Plant population	220 to 270	plants/sq m.
TKW	45.0	grams
Seeding Rate	120.0	lb/ac

### Fertilization:

Durum can be downgraded due to piebald kernels. Sufficient N reduces the problem. Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total seasonal crop water use: 460 mm  
 Emergence to Tillering: 1.0 to 4.5 mm/day  
 Stem Extension to Heading: 3.5 increasing to 6.5 mm/day  
 Flowering to Late Milk: 5.5 to 7.5 mm/day  
 Early Dough to Maturity: 6.5 decreasing to 2.0 mm/day  
 Critical stages for moisture are tillering and flowering. Maintain soil at >50% available moisture. Use a soil probe to check moisture status. Allow the canopy to dry between irrigations to minimize disease pressure and lodging.

### Harvest:

Swath at a kernel moisture content of 30-40%. The kernel will dent with pressure. In some years the straw may still be green. Decide on the basis of grain firmness and colour. Durum is more susceptible to weathering and sprouting than hard wheat.

### Handling, Storage and Grading:

Tough 14.6%; damp 17.0%

### Rotations and Crop Protection:

Fungicide seed treatment recommended. Durum is more susceptible to fusarium head blight than other wheat classes. Four year break between durum crops reduces risk and build-up of disease. Avoid planting durum on or near corn stubble. Wheat on wheat stubble will yield at least 15% less than wheat on broadleaf stubble due to disease build-up. Break from cereals for one year.

\* Wheat midge may require control.

\*\* Fusarium head blight usually requires control.

† Crop Insurance rates currently under review.

## ECONOMICS

**CROP: CPS WHEAT**

ITEM	UNIT	My Farm	
		\$/ac	\$/ac
Seed			\$16.06
Seed treatment			\$5.50
Fertilizer:	N 110 lb		\$59.67
	P 40 lb		\$23.57
	K 10 lb		\$7.32
Herbicide			\$25.00
Insecticide *			\$0.00
Fungicide **			\$0.00
Equipment fuel			\$12.58
Equipment repair			\$6.18
Custom work			\$5.00
Irrigation power	10 inches		\$14.00
Irrigation repair			\$10.15
Irrigation service/water charge			\$22.32
Crop insurance †	52 bu/ac		\$6.67
Hail insurance			\$7.80
Hired labour	0 hr/ac		\$0.00
Other			\$0.00
Farm overhead			\$9.20
Operating int	4.1 %		\$4.74
<b>Total Cash Costs</b>			<b>\$235.76</b>
Farm Equipment & Buildings			\$23.45
Irrigation System			\$25.22
Specialized Equipment			\$0.00
Land			\$19.68
<b>Total Non Cash Costs</b>			<b>\$68.36</b>
<b>Total Costs</b>			<b>\$304.11</b>
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>
Yield bu/ac	65	80	95
Price \$/bu		\$5.10	
<b>Gross</b>	<b>\$332</b>	<b>\$408</b>	<b>\$485</b>
<b>Net Return</b>	<b>\$27</b>	<b>\$104</b>	<b>\$180</b>
Specialized Equipment			\$/ac/yr
<b>TOTAL</b>			<b>\$0.00</b>

### More Information:

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## AGRONOMICS

### Variety Selection:

Red: AC Crystal, 5702PR have high yield and good lodging ratings. Select an irrigated variety on the basis of high yield, lodging resistance and disease resistance. See 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed before May 15th.

Plant population	220 to 270	plants/sq m.
TKW	42.0	grams
Seeding Rate	110.0	lb/ac

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total seasonal crop water use - 460 mm

Emergence to Tillering: 1.0 to 4.5 mm/day

Stem Extension to Heading: 3.5 increasing to 6.5 mm/day

Flowering to Late Milk: 5.5 to 7.5 mm/day

Early Dough to Maturity: 6.5 decreasing to 2.0 mm/day

Critical stages for moisture are tillering and flowering. Maintain soil at >50% available moisture. Use a soil probe to check moisture status. Allow the canopy to dry between irrigations to minimize disease pressure and lodging.

### Harvest:

Swath at a kernel moisture content of 30-40%. The kernel will dent with pressure. In some years the straw may still be green. Decide on the basis of grain firmness and colour. CPS is more susceptible to weathering and sprouting than hard wheat.

### Handling, Storage and Grading:

Tough 14.6%; damp 17.0%

### Rotations and Crop Protection:

Fungicide seed treatment recommended. Wheat on wheat stubble will yield at least 15% less than wheat on broadleaf stubble due to disease build-up. Break from cereals for one year. CPS is less susceptible to fusarium head blight than durum.

\* Wheat midge may require control.

\*\* Leaf Diseases and/or fusarium head blight may require control.

† Crop Insurance rates currently under review.

## ECONOMICS

**CROP: SOFT WHEAT**

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$16.06	
Seed treatment			\$5.50	
Fertilizer:	N 110	lb	\$59.67	
	P 40	lb	\$23.57	
	K 10	lb	\$7.32	
Herbicide			\$25.00	
Insecticide *			\$0.00	
Fungicide **			\$24.00	
Equipment fuel			\$12.58	
Equipment repair			\$6.18	
Custom work			\$5.00	
Irrigation power	11	inches	\$14.70	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.46	
Crop insurance †	52	bu/ac	\$6.67	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating Interest	4.1	%	\$5.25	
<b>Total Cash Costs</b>			<b>\$261.11</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.36</b>	
<b>Total Costs</b>			<b>\$329.47</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	75	85	100	
Price \$/bu		\$4.40		
<b>Gross</b>	<b>\$330</b>	<b>\$374</b>	<b>\$440</b>	
<b>Net Return</b>	<b>\$1</b>	<b>\$45</b>	<b>\$111</b>	
Specialized Equipment			\$/ac/yr	
<b>TOTAL</b>			<b>\$0.00</b>	

### More Information:

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## AGRONOMICS

### Variety Selection:

AC Andrew Is high yielding. Seed of Sadash will not be available in 2009. Select an irrigated variety on the basis of high yield, lodging resistance and disease resistance. See 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed before May 15th.

Plant population	220 to 270	plants/sq m.
TKW	39.0	grams
Seeding Rate	110.0	lb/ac

### Fertilization:

Low protein soft wheat production requires a balance between water and nitrogen. Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total seasonal crop water use: 480 mm  
 Emergence to Tillering: 1.0 to 4.5 mm/day  
 Stem Extension to Heading: 3.5 increasing to 6.5 mm/day  
 Flowering to Late Milk: 5.5 to 7.5 mm/day  
 Early Dough to Maturity: 6.5 decreasing to 2.0 mm/day  
 Critical stages for moisture are at tillering at flowering. Maintain soil at >50% available moisture. Allow the canopy to dry between irrigations to minimize disease pressure and lodging. Use a soil probe to check moisture status.

### Harvest:

Swath at a kernel moisture content of 30-40%. The kernel will dent with pressure. In some years the straw may still be green. Decide on the basis of grain firmness & colour. Soft wheat is more susceptible to weathering and sprouting than hard wheat.

### Handling, Storage and Grading:

Tough 14.6%; damp 17.0%

### Rotations and Crop Protection:

Fungicide seed treatment recommended. Wheat on wheat stubble will yield at least 15% less than wheat on broadleaf stubble due to disease build-up. Break from cereals for one year. Soft wheat is more susceptible to fusarium head blight than hard wheat, but less susceptible than durum. Avoid planting soft wheat on or near corn stubble.

\* Wheat midge may require control.

\*\* Leaf Diseases and/or fusarium head blight usually require control.

† Crop Insurance rates currently under review.

## ECONOMICS

### CROP: MALT BARLEY

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$15.95	
Seed treatment			\$4.00	
Fertilizer:	N	110	lb	\$59.67
	P	40	lb	\$23.57
	K	10	lb	\$7.32
Herbicide			\$24.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.58	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	9	inches	\$12.60	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.03	
Crop insurance †	61	bu/ac	\$6.77	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$5.50	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.66	
<b>Total Cash Costs</b>				<b>\$231.98</b>
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
<b>Total Non Cash Costs</b>				<b>\$68.36</b>
<b>Total Costs</b>				<b>\$300.33</b>
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	70	90	110	
Price \$/bu		\$5.30		
<b>Gross</b>	<b>\$371</b>	<b>\$477</b>	<b>\$583</b>	
<b>Net Return</b>	<b>\$71</b>	<b>\$177</b>	<b>\$283</b>	
Specialized Equipment			\$/ac/yr	
<b>TOTAL</b>			\$0.00	

#### More Information:

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## AGRONOMICS

#### Variety Selection:

CDC Copeland and Newdale are 2-row varieties with good lodging resistance and high yield. Six-row varieties Legacy and Tradition are approved malting varieties with good lodging ratings and high yield. See 'Crop Varieties for Irrigation' publication.

#### Seeding: Seed before May 15th.

Plant population	250 to 280	plants/sq m.
TKW	41.0	grams
Seeding Rate	110.0	lb/ac

#### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

#### Crop Water Use and Irrigation:

Total seasonal moisture use: 430 mm

Tillering: 1 to 3 mm/day

Flag Leaf to Flowering: 7 to 8 mm/day

Critical stages for moisture are at tillering and at flowering. Maintain soil at >50% available moisture from tillering through to flowering. Use a soil probe to check moisture status. **Irrigated barley is often rejected for malting due to staining of the sample.** Build up soil moisture prior to grain filling and draw down reserve through maturation to reduce both staining and lodging.

#### Harvest:

Swath at maturity to avoid green kernels in the sample. Barley is more susceptible to weathering and sprouting than hard wheat.

#### Handling, Storage and Grading:

Tough 14.9%; damp 17.0%

#### Rotations and Crop Protection:

Barley is generally less susceptible to fusarium head blight than wheat and durum. However, varieties differ in susceptibility. Net blotch is an important disease of barley, reducing yield and causing downgrading (black point). Reduce net blotch severity with variety selection, burying residue, leaving two years between barley crops. Fungicide application may be economical on susceptible varieties.

† Crop Insurance rates currently under review.

## ECONOMICS

### CROP: FEED BARLEY

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$16.25	
Seed treatment			\$4.00	
Fertilizer: N	120	lb	\$65.10	
	P	40 lb	\$23.57	
	K	10 lb	\$7.32	
Herbicide			\$24.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.58	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	9	inches	\$12.60	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.03	
Crop insurance †	61	bu/ac	\$6.77	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$5.50	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.78	
<b>Total Cash Costs</b>			<b>\$237.82</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.36</b>	
<b>Total Costs</b>			<b>\$306.18</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	80	100	120	
Price \$/bu		\$2.50		
<b>Gross</b>	<b>\$200</b>	<b>\$250</b>	<b>\$300</b>	
<b>Net Return</b>	<b>-\$106</b>	<b>-\$56</b>	<b>-\$6</b>	
Specialized Equipment			\$/ac/yr	
<b>TOTAL</b>			<b>\$0.00</b>	

**More Information:**

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

**Variety Selection:**

AC Rosser, Sundre, CDC Trey, CDC Bold, CDC Coalition have good lodging resistance and high yield. Choose a variety on the basis of yield, lodging and resistance to relevant diseases. See 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed before May 15th.

Plant population	320.0	plants/sq m.
TKW	41.0	grams
Seeding Rate	130.0	lb/ac

**Fertilization:**

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

**Crop Water Use and Irrigation:**

Total seasonal moisture use: 430 mm

Tillering: 3 to 6 mm/day

Flag Leaf to Milk: 5.5 to 7.5 mm/day

Critical stages for moisture are at tillering and at flowering. Allow the canopy to dry between irrigations to minimize disease pressure and lodging. Maintain soil at >50% available moisture for tillering through flowering. Use a soil probe to check moisture status. Irrigation applications should end at the soft dough stage.

**Harvest:**

Swath feed barley at kernel moisture content of 30 - 40%. The kernel will dent with pressure. Barley is more susceptible to weathering and sprouting than hard wheat.

**Handling, Storage and Grading:**

Tough 14.9%; damp 17.0%

**Rotations and Crop Protection:**

Barley is generally less susceptible to fusarium head blight than most other cereal types. However, varieties differ in susceptibility. Net blotch is an important disease of barley, reducing yield and causing downgrading (black point). Reduce net blotch severity with variety selection, burying residue, leaving two years between barley crops. Fungicide application may be economical on susceptible varieties.

† Crop Insurance rates currently under review.

## ECONOMICS

**CROP: CANOLA**

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$45.75	
Seed treatment			\$9.12	
Fertilizer:	N	150	lb	\$81.37
	P	40	lb	\$23.57
	K	15	lb	\$10.98
Herbicide			\$9.00	
Insecticide			\$0.00	
Fungicide			\$24.00	
Equipment fuel			\$13.32	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	11	inches	\$15.40	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.61	
Crop insurance †	37	bu/ac	\$8.94	
Hail insurance	6.3%		\$13.65	
Hired labour	0	hr/ac	\$0.00	
Pod Sealant			\$18.00	
Farm overhead			\$9.20	
Operating int	4.1	%	\$6.59	
<b>Total Cash Costs</b>			<b>\$327.83</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.52</b>	
<b>Total Costs</b>			<b>\$396.35</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	40	50	60	
Price \$/bu		\$9.00		
<b>Gross</b>	<b>\$360</b>	<b>\$450</b>	<b>\$540</b>	
<b>Net Return</b>	<b>-\$36</b>	<b>\$54</b>	<b>\$144</b>	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
<b>TOTAL</b>			<b>\$0.17</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com). Use the 'Canola Growers Manual' from the Canola Council of Canada.

## AGRONOMICS

### Variety Selection:

Most hybrids have significantly out-produced open-pollinated canola varieties. Consider which herbicide tolerance technology best fits your farm. Select a canola variety that is resistant or moderately resistant to blackleg and resistant to lodging. Other factors to consider are oil content, delivery options and cash flow needs and cost of the seed. Consult with a crop input retailer for variety availability. Refer to the publication "Crop Varieties for Irrigation" for production data specific to irrigation in Saskatchewan.

**Seeding:** Seed before May 15th.

Plant population		105.0	plants/sq m.
TKW	OP Canola	4.5	grams
	Hybrid Canola	5.0	grams
Seeding Rate		5.0	lb/ac

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

The active root zone of canola is 1.0 metre. Maintain the soil water content at or above 50% field capacity. The average total seasonal crop water requirement is 480 mm (19 inches). Critical irrigation period extends from late vegetation/spiking through flowering to initial seed ripening.

### Daily crop water use:

Vegetative: 1.5-3.0 mm/day

30 day average peak use: 6.0-6.5 mm/day

Flowering: 7.5 mm/day maximum

### Harvest:

Swath when 60% of seeds in pods on the main stem have changed colour. Green seed is caused by early swathing or extreme heat or cold while the crop is in the swath. Irrigated canola can be a challenge to swath; start early. If using pod sealant products, direct combining is possible.

### Handling, Storage and Grading:

Tough 10.1%; Damp 12.5%

### Rotations and Crop Protection:

Maintain at least a four year rotation between canola or other oilseed crops. A fungicide application may be required for Sclerotinia control. Recommended application timing is dependent upon product used, but should occur at 20-50% bloom (prior to petal drop). An insecticide application may be required for Bertha Armyworm or Diamondback Moth control. Scout fields weekly during growing season and daily if insect infestations approach the economic threshold or environmental conditions favor rapid development.

† Crop Insurance rates currently under review.

## ECONOMICS

### CROP: BROWN/ORIENTAL MUSTARD

ITEM	UNIT		\$/ac	My Farm \$/ac
Seed			\$0.00	
Seed treatment			\$0.00	
Fertilizer:	N	120	lb	\$65.10
	P	40	lb	\$23.57
	K	15	lb	\$10.98
Herbicide			\$8.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$13.32	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.32	
Crop insurance *	24	bu	\$8.89	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.25	
<b>Total Cash Costs</b>			<b>\$211.56</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.52</b>	
<b>Total Costs</b>			<b>\$280.08</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	35	40	45	
Price \$/bu		\$17.50		
<b>Gross</b>	<b>\$613</b>	<b>\$700</b>	<b>\$788</b>	
<b>Net Return</b>	<b>\$332</b>	<b>\$420</b>	<b>\$507</b>	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
0			\$0.00	
0			\$0.00	
0			\$0.00	
0			\$0.00	
<b>TOTAL</b>			<b>\$0.17</b>	

#### More Information:

Call an Irrigation Agriologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

### Variety Selection:

Brown: Duchess, Centennial Brown. Oriental: Cutlass, Forge, AC Vulcan.

### Seeding:

Plant population	120.0	plants/sq m.
TKW	3.0	grams
Seeding Rate	4.0	lb/ac

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total average seasonal moisture requirement: 480 mm. Maintain soil at or above 50% moisture capacity. Use a soil probe to check moisture status. Mustard is sensitive to over irrigation.

### Harvest:

Swath when seed moisture content is 25% & the seeds are firm. Brown; 60% of seeds are reddish brown. Oriental; 75% of seeds are yellow. Immature, green seeds will not turn colour in the swath.

### Handling, Storage and Grading:

Tough 9.6%; damp 12.5%

### Rotations and Crop Protection:

Four years between mustard & mustard or canola. Check recropping restrictions on Group 2 herbicides.

\* Crop Insurance rates currently under review.

## ECONOMICS

**CROP: YELLOW MUSTARD**

My Farm

ITEM	UNIT		\$/ac	\$/ac
Seed			\$20.34	
Seed treatment			\$0.00	
Fertilizer:	N	100	lb	\$54.25
	P	40	lb	\$23.57
	K	15	lb	\$10.98
Herbicide			\$8.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$13.32	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.32	
Crop insurance *	18	bu	\$11.54	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.50	
<b>Total Cash Costs</b>			<b>\$223.94</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.52</b>	
<b>Total Costs</b>			<b>\$292.47</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	25	30	35	
Price \$/bu		\$20.70		
<b>Gross</b>	<b>\$518</b>	<b>\$621</b>	<b>\$725</b>	
<b>Net Return</b>	<b>\$225</b>	<b>\$329</b>	<b>\$432</b>	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
0			\$0.00	
0			\$0.00	
0			\$0.00	
0			\$0.00	
<b>TOTAL</b>			<b>\$0.17</b>	

### More Information:

Call an Irrigation Agrolgist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

### Variety Selection:

Andante, Ace, AC Pennant, AC Base.

### Seeding:

Plant population	150.0	plants/sq m.
TKW	6.0	grams
Seeding Rate	9.0	lb/ac

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total average seasonal moisture requirement: 480 mm. Maintain soil at or above 50% moisture capacity. Use a soil probe to check moisture status. Mustard is sensitive to over irrigation.

### Harvest:

Straight cut when 100% of seeds are yellow. Moisture content should be below 13%. Watch for seed cracking.

### Handling, Storage and Grading:

Tough 9.6%; damp 12.5%

### Rotations and Crop Protection:

4 years between mustard & mustard, canola, pulses or sunflower. Check recropping restrictions on Group 2 herbicides.

\* Crop Insurance rates currently under review.

## ECONOMICS

## AGRONOMICS

**CROP: FLAX**

My Farm

ITEM	UNIT		\$/ac	\$/ac
Seed			\$10.80	
Seed treatment			\$0.00	
Fertilizer:	N	100	lb	\$54.25
	P	40	lb	\$23.57
	K	0	lb	\$0.00
Herbicide			\$19.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$14.06	
Equipment repair			\$8.24	
Custom work			\$0.00	
Irrigation power	8	inches	\$11.20	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$21.73	
Crop insurance *	26	bu/ac	\$8.06	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.06	
<b>Total Cash Costs</b>			<b>\$202.13</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.36</b>	
<b>Total Costs</b>			<b>\$270.48</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	30	40	45	
Price \$/bu		\$11.00		
<b>Gross</b>	<b>\$330</b>	<b>\$440</b>	<b>\$495</b>	
<b>Net Return</b>	<b>\$60</b>	<b>\$170</b>	<b>\$225</b>	
Specialized Equipment			\$/ac/yr	
<b>TOTAL</b>			<b>\$0.00</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

### Variety Selection:

Prairie Thunder, CDC Bethune, Prairie Blue. Refer to "Crop Varieties for Irrigation" publication (CSIDC) for assistance.

### Seeding:

Plant population	500.0	plants/sq m.
TKW	5.0	grams
Seeding Rate	40.0	lb/ac

Early May seeding produces highest yield. If seedbed is dry, irrigate prior to seeding rather than after seeding.

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

The active root zone of flax is 1.0 metres. Maintain the soil water content at or above 50% field capacity. The average seasonal crop water use is 410 mm (16 inches). The critical irrigation period extends from flowering through to the initiation of seed ripening. The scheduling goal of flax is to maintain adequate soil moisture to extend flowering and ensure that all flowers develop seed. Irrigation operations must end by the second week of August to reach maturity.

### Daily Crop Water Use:

Seedling: 1-3 mm/day

Flowering: peak use of 7 mm/day

### Harvest:

Swath or desiccate when 75% of bolls have turned brown.

Immature seed will blacken from a -3 to -5 °C frost. Early swathing will reduce seed size, but will not cause blackening.

### Handling, Storage and Grading:

Tough 10.1%; damp 13.5%

### Rotations and Crop Protection:

Three or more years between flax crops is recommended to control soil- and stubble-borne disease such as Fusarium Wilt and rust. Registered flax varieties are resistant to rust and moderately resistant to Fusarium Wilt. Seeding flax on cereal, corn or legume stubble is the best rotation choice. Flax on canola or potato stubble does not yield as high. It is important to note that a flax crop seeded on legume or potato stubble is more susceptible to seedling blight (Rhizoctonia diseases). Flax is not susceptible to Sclerotinia stem rot.

\* Crop Insurance rates currently under review.

## ECONOMICS

**CROP: PEA**

ITEM	UNIT			My Farm \$/ac
Seed				\$19.80
Seed treatment / inoculant				\$4.26
Fertilizer: N	8	lb		\$4.34
P	40	lb		\$23.57
K	15	lb		\$10.98
Herbicide				\$23.75
Insecticide				\$0.00
Fungicide				\$16.50
Equipment fuel				\$16.28
Equipment repair				\$10.04
Custom work				\$0.00
Irrigation power	8	inches		\$11.20
Irrigation repair				\$10.15
Irrigation service/water charge				\$21.73
Crop insurance*	33	bu/ac		\$4.62
Hail insurance	7.2%			\$15.60
Hired labour	0	hr/ac		\$0.00
Other				\$0.00
Farm overhead				\$9.20
Operating int	4.1	%		\$4.14
<b>Total Cash Costs</b>				<b>\$206.16</b>
Farm Equipment & Buildings				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$8.56
Land				\$19.68
<b>Total Non Cash Costs</b>				<b>\$76.91</b>
<b>Total Costs</b>				<b>\$283.08</b>
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	55	65	75	
Price \$/bu (#2 yellow)				\$5.20
<b>Gross</b>	<b>\$286</b>	<b>\$338</b>	<b>\$390</b>	
<b>Net Return</b>	<b>\$3</b>	<b>\$55</b>	<b>\$107</b>	
Specialized Equipment				\$/ac/yr
Flex Header				\$5.01
Land Roller				\$3.54
<b>TOTAL</b>				<b>\$8.56</b>

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

### Variety Selection:

Yellow: Thunderbird, CDC Meadow, Tudor. Green: Cooper. High-yielding, lodging resistant varieties are recommended for irrigation. See 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed in late Apr/early May. Roll after seeding.

Plant population	75.0	plants/sq m.
TKW	240.0	grams
Seeding Rate	180.0	lb/ac

TKW is variety specific; adjust seeding rate accordingly. Test seed for disease.

### Fertilization:

Inoculate with a pea inoculant. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Vegetative Stage: 3 to 5 mm/day

Flowering to Pod Formation Stages: 5 to 6 mm/day

Total average seasonal moisture requirement: 400 mm. Allow the canopy to dry between irrigation to reduce disease pressure and lodging. Use a soil probe to check moisture.

### Harvest:

Swath directly ahead of the combine or straight cut when the peas are mature to avoid wind damage. Use a flex header, pick-up reel and vine lifters. Combine at 16-18% moisture and aerate, to prevent seed damage.

### Handling, Storage and Grading:

Tough 16.1%; damp 18.0%

### Rotations and Crop Protection:

Four years between pea crops. Check recropping restrictions on Group 2 (Ally, Everest, Sundance) and Group 4 herbicides.

\* Crop Insurance rates currently under review.

## ECONOMICS

## AGRONOMICS

**CROP: FABABEAN**

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Seed			\$50.40	
Seed treatment / inoculant			\$3.26	
Fertilizer:	N	11 lb	\$5.97	
	P	50 lb	\$29.47	
	K	15 lb	\$10.98	
Herbicide			\$45.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$16.28	
Equipment repair			\$8.24	
Custom work			\$0.00	
Irrigation power	16	inches	\$22.40	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$24.07	
Crop insurance *	2132	lb/ac	\$9.21	
Hail insurance			\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$5.33	
<b>Total Cash Costs</b>			<b>\$265.55</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.52</b>	
<b>Total Costs</b>			<b>\$334.07</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield lb/ac	2500	3000	3500	
Price \$/lb		\$0.10		
<b>Gross</b>	<b>\$250</b>	<b>\$300</b>	<b>\$350</b>	
<b>Net Return</b>	<b>-\$84</b>	<b>-\$34</b>	<b>\$16</b>	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
<b>TOTAL</b>			<b>\$0.17</b>	

### More Information:

Call an Irrigation Agriologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com). Use The Pulse Production Manual from The Sask Pulse Growers Assoc.

### Variety Selection:

CDC Fatima has earlier maturity, shorter height and high yield potential and is suitable for food markets. Snowbird is a small-seeded zero tannin variety suitable for feed markets and also silage harvest. See 'Crop Varieties for Irrigation' publication.

### Seeding:

Plant population	40.0	plants/sq m.
TKW	440.0	grams
Seeding Rate	180.0	lb/ac

Fababean is late maturing, and should be sown early for best results.

### Fertilization:

Fababean fixes a large amount of nitrogen. Inoculate with a fababean inoculant. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Vegetative Stage: 2.5 to 6 mm/day

Flowering to Pod Filling Stages: 6 to 8 mm/day

Ripening Stage: <6 mm/day

Total average seasonal moisture requirement: 610 mm.

Maintain good soil moisture through the growing season.

Allow the canopy to dry between irrigations to minimize disease pressure and lodging. Use a soil probe to check moisture status.

### Harvest:

Swath when 25% of plants have lower pods turning black, or September 7 whichever occurs first. Lay down a light swath as swaths take a long time to dry. Combine at 16-18% moisture and aerate to prevent seed damage. Early swathing will reduce seed size but not quality. Frost on immature seed will reduce quality.

### Handling, Storage and Grading:

Tough 16.1%; damp 18.0%

### Rotations and Crop Protection:

Two years between Fababean and another pulse crop. Check recropping restrictions on Group 2 (Ally, Everest, Sundance) and Group 4 herbicides. Fababean is a good "break crop" as it is less susceptible to disease than other pulses. Chocolate spot can be a problem.

## ECONOMICS

**CROP: RED LENTIL**

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$24.75	
Seed treatment / inoculant			\$1.42	
Fertilizer:	N	8	lb	\$4.34
	P	40	lb	\$23.57
	K	15	lb	\$10.98
Herbicide			\$39.00	
Insecticide			\$0.00	
Fungicide			\$16.50	
Equipment fuel			\$16.28	
Equipment repair			\$8.96	
Custom work			\$0.00	
Irrigation power	6	inches	\$8.40	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$21.15	
Crop insurance *	1199	lb/ac	\$11.73	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.55	
<b>Total Cash Costs</b>			<b>\$226.58</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$8.56	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$76.91</b>	
<b>Total Costs</b>			<b>\$303.49</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield lb/ac	1400	1800	2200	
Price \$/lb		\$0.22		
<b>Gross</b>	<b>\$308</b>	<b>\$396</b>	<b>\$484</b>	
<b>Net Return</b>	<b>\$5</b>	<b>\$93</b>	<b>\$181</b>	
Specialized Equipment			\$/ac/yr	
Flex Header			\$5.01	
Land Roller			\$3.54	
<b>TOTAL</b>			<b>\$8.56</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com). Use The Pulse Production Manual from The Sask Pulse Growers Assoc.

## AGRONOMICS

### Variety Selection:

Lentil varieties have not been evaluated under irrigation. Note recropping restrictions following Clearfield lentils.

### Seeding:

Plant population	115.0	plants/sq m.
TKW	40.0	grams
Seeding Rate	45.0	lb/ac

Test seed for disease. Seed in late April to early May. Roll after seeding.

### Fertilization:

Inoculate with a lentil inoculant. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Total seasonal average moisture requirement: 330 mm. Allow the canopy to dry between irrigations to minimize disease pressure and lodging. Lentils are sensitive to waterlogging; excessive water application reduces lentil yields. Use a soil probe to check moisture status.

### Harvest:

Desiccate when lower pods are tan and seeds rattle. Combine at 18% moisture and aerate to prevent seed damage. Straight cut with a flex header.

### Handling, Storage and Grading:

Tough 14.1%; damp 16.0%

### Rotations and Crop Protection:

Four years between lentil crops. Check recropping restrictions on Group 2 (Ally, Everest, Sundance) and Group 4 herbicides. Control the spread of disease by fungicide application.

\* Crop Insurance rates currently under review.

## ECONOMICS

## AGRONOMICS

**CROP: DRY BEAN**

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Seed			\$63.75	
Seed treatment / inoculant			\$10.00	
Fertilizer:	N	45 lb	\$24.41	
	P	40 lb	\$23.57	
	K	15 lb	\$10.98	
Herbicide			\$40.00	
Insecticide			\$0.00	
Fungicide			\$45.00	
Equipment fuel			\$19.54	
Equipment repair			\$10.04	
Custom work			\$0.00	
Irrigation power	7	inches	\$9.80	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$21.44	
Crop insurance *	1700	lb/ac	\$13.06	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$6.69	
<b>Total Cash Costs</b>			<b>\$333.23</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$17.89	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$86.24</b>	
<b>Total Costs</b>			<b>\$419.47</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield lb/ac	2000	2500	3000	
Price \$/lb		\$0.31		
<b>Gross</b>	<b>\$620</b>	<b>\$775</b>	<b>\$930</b>	
<b>Net Return</b>	<b>\$201</b>	<b>\$356</b>	<b>\$511</b>	
Specialized Equipment			\$/ac/yr	
Planter			\$5.01	
Row Crop Cultivator			\$1.34	
Band Sprayer			\$1.50	
Undercutter/windrower			\$5.01	
Tractor accessories - 3Pt hitch			\$3.34	
10" tube belt conveyor			\$1.67	
<b>TOTAL</b>			<b>\$17.89</b>	

### More Information:

Call an Irrigation Agrolgist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com). Use The Pulse Production Manual from The Sask Pulse Growers Assoc.

### Variety Selection:

Winchester, AC Redbond, Resolute have improved plant structure and days to maturity. 'White Mountain' type pinto beans receive a quality premium. Island is a new high-yielding Pinto variety. Refer to CSIDC's 'Crop Varieties for Irrigation' publication.

**Seeding:** Seed after the danger of frost: May 20-25th.

Plant population	25.0	plants/sq m.
TKW	345.0	grams
Seeding Rate	75.0	lb/ac

Seed weights vary with each market class and seed lot. See 'Crop Varieties for Irrigation' for averages. Row crop equipment is required.

### Fertilization:

Inoculate with a dry bean inoculant. Dry beans have a total soil and fertilizer N requirement of 80 to 90 lb/ac. A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs. Many bean producers apply zinc at 5lb/ac at a cost of \$15/ac.

### Crop Water Use and Irrigation:

Total average seasonal moisture requirement: 370 mm.

Vegetative Stage: 2 to 3.5 mm/day

Flowering Stage: 3.5 to 5 mm/day

Pod Formation Stage: 5 to 6.5 mm/day

Ripening Stage: < 5 mm/day

Allow the canopy to dry between irrigations to minimize disease pressure and lodging. Use a soil probe to check moisture status.

### Harvest:

Undercut when 40% of pods are buckskin colour and leaves are still attached. Combine at 14-16% moisture to avoid seed damage. Handle beans gently, use conveyors and bean ladders.

### Handling, Storage and Grading:

Tough 15.5%; damp 18.0%

### Rotations and Crop Protection:

Check recropping restrictions on Group 2 (Ally, Everest, Sundance) and Group 4 herbicides. Reduce White Mould (sclerotinia) incidence by with crop rotation to non-host crops like cereals and flax, choosing a less susceptible variety like Winchester, and treating at the appropriate stage with Lance. Bacterial blight may require control with a copper-based foliar product. Using a band sprayer can reduce the cost of pesticide application by 50%.

\* Crop Insurance rates currently under review.

## ECONOMICS

## AGRONOMICS

**CROP: GRAIN CORN**

My Farm

ITEM	UNIT		\$/ac	\$/ac
Seed			\$71.68	
Seed treatment			\$8.00	
Fertilizer:	N	120 lb	\$65.10	
	P	45 lb	\$26.52	
	K	10 lb	\$7.32	
Herbicide			\$9.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.58	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	12 inches		\$16.10	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.75	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0 hr/ac		\$0.00	
Grain Drying			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1 %		\$5.42	
<b>Total Cash Costs</b>			<b>\$270.00</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$8.36	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$76.71</b>	
<b>Drying Costs</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Custom Drying \$/ac	9	13	16	
<b>Total Costs</b>	<b>\$355</b>	<b>\$359</b>	<b>\$363</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield bu/ac	70	100	130	
Price \$/bu		\$3.80		
<b>Gross</b>	<b>\$266</b>	<b>\$380</b>	<b>\$494</b>	
<b>Net Return</b>	<b>-\$97</b>	<b>\$17</b>	<b>\$131</b>	
Specialized Equipment			\$/ac/yr	
Planter			\$5.01	
Corn Header			\$3.34	
<b>TOTAL</b>			<b>\$8.36</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

### Variety Selection:

Refer to the Alberta Corn Committee site at CSIDC and your local dealer. RR and Liberty Link varieties are now available with reduced CHU requirements. Plant a variety suitable to the CHUs received at your location and your risk tolerance.

### Seeding:

Plant population	6.5	plants/sq m.
TKW	variable	grams
Seeding Rate	32,000	seeds/ac

### Fertilization:

Side band up to 75 lb/ac actual N, 2" to the side & 1" below. Fertigate the balance before corn tassels. Nitrogen: 100-180 lb/ac. Phosphate: 20-50 lb/ac. Potassium: sideband if required.

### Crop Water Use and Irrigation:

Total seasonal moisture use - 520 mm  
Tasseling Stage: 5 mm/day  
Silking Stage: 6 mm/day  
Kernel Formation: 5 mm/day  
Maintain good soil moisture throughout the growing season. Use a soil probe to check moisture status.

### Harvest:

Can combine <30% moisture with more cracking, but aim for <20%. Safe storage is 14-15%.

### Handling, Storage and Grading:

Drying costs are based on \$0.125/bushel. Expect to dry corn in most years.

### Rotations and Crop Protection:

Specialized equipment is required for seeding, but can be hired custom. Group 3 residues can stunt corn.

## ECONOMICS

## AGRONOMICS

### CROP: CORN GRAZING

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Pasture acres		65		
# of cattle		200		
Consumption/day		20 lbs dry matter		
Dry matter (DM)		30%	per ton	
Seed				\$71.68
Seed treatment				\$8.00
Fertilizer:	N	120	lb	\$65.10
	P	45	lb	\$26.52
	K	10	lb	\$7.32
Herbicide				\$9.00
Insecticide				\$0.00
Fungicide				\$0.00
Equipment fuel				\$6.00
Equipment repair				\$4.00
Custom work				\$0.00
Irrigation power	11	inches		\$14.70
Irrigation repair				\$10.15
Irrigation service/water charge				\$22.46
Crop insurance				\$0.00
Hail insurance				\$0.00
Hired labour	0	hr/ac		\$0.00
Other				\$0.00
Farm overhead				\$9.20
Operating interest	4.1	%		\$5.21
<b>Total Cash Costs</b>				<b>\$259.34</b>
Farm Equipment & Buildings				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$13.54
Land				\$19.68
<b>Total Non Cash Costs</b>				<b>\$81.89</b>
<b>Total Costs</b>				<b>\$341.23</b>
		<b>Low</b>	<b>Average</b>	<b>High</b>
DM in lbs *		5760	7680	9600
Cow days/ac		288	384	480
Cost \$/ac			\$341	
<b>Cost/Hd/day</b>		<b>\$1.18</b>	<b>\$0.89</b>	<b>\$0.71</b>
Specialized Equipment				\$/ac/yr
Planter				\$5.01
Cross Fencing				\$1.16
Perimeter Fencing				\$4.27
Water Supply				\$3.09
<b>TOTAL</b>				<b>\$13.54</b>

### Variety Selection:

Refer to the Alberta Corn Committee site at CSIDC and your local dealer. RR and Liberty Link varieties are now available with reduced CHU requirements. Plant a variety suitable to the CHUs received at your location and your risk tolerance.

### Seeding:

Plant population	7.0	plants/sq m.
TKW	variable	grams
Seeding Rate	32,000	seeds/ac

### Fertilization:

Side band up to 75 lb/ac actual N, 2" to the side & 1" below. Fertigate the balance before corn tassels. Nitrogen: 100-180 lb/ac. Phosphate: 20-50 lb/ac. Potassium: sideband if required.

### Crop Water Use and Irrigation:

Total seasonal moisture use - 520 mm  
Tasseling Stage: 5 mm/day  
Silking Stage: 6 mm/day  
Kernel Formation: 5 mm/day  
Maintain good soil moisture throughout the growing season. Use a soil probe to check moisture status.

### Rotations and Crop Protection:

Specialized equipment is required for seeding, but can be hired custom. Group 3 residues can stunt corn.

### Grazing Management

With grazing corn, pregnant beef cows receive an adequately maintained diet and, with good management, gain body condition throughout December and January. First, the cows will immediately take all the cobs off the corn stalks. The cob material averages 80 per cent TDN and 10.5% CP. What remains are stalks and stover - average 54% TDN, <7% crude protein. Modern electric fence systems favour smaller paddocks that can be grazed in two or three days. **Conventional herd wintering costs (drylotting) average \$2 per cow day.**

\* Based on 80% utilization.

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## ECONOMICS

## AGRONOMICS

**CROP: CORN SILAGE**

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$71.68	
Seed treatment			\$8.00	
Fertilizer:	N	120	lb	\$65.10
	P	45	lb	\$26.52
	K	10	lb	\$7.32
Herbicide			\$9.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$6.00	
Equipment repair			\$4.00	
Custom work			\$0.00	
Irrigation power	10	inches	\$13.30	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.17	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating int	4.1	%	\$5.17	
<b>Total Cash Costs</b>			<b>\$257.61</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$5.01	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$73.37</b>	
<b>Harvest Costs</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Custom Silage \$/ac	132	176	220	
<b>Total Costs</b>	<b>\$463</b>	<b>\$507</b>	<b>\$551</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield t/ac	12	16	20	
Price \$/t *		\$33		
<b>Gross Return</b>	<b>\$396</b>	<b>\$528</b>	<b>\$660</b>	
<b>Net Return</b>	<b>-\$67</b>	<b>\$21</b>	<b>\$109</b>	
Specialized Equipment			\$/ac/yr	
Planter			\$5.01	
<b>TOTAL</b>			<b>\$5.01</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

### Variety Selection:

Refer to the Alberta Corn Committee site at CSIDC and your local dealer. RR and Liberty Link varieties are now available with reduced CHU requirements. Plant a variety suitable to the CHUs received at your location and your risk tolerance.

### Seeding:

Plant population	7.0	plants/sq m.
TKW	variable	grams
Seeding Rate	32,000	seeds/ac

### Fertilization:

Side band up to 75 lb/ac actual N, 2" to the side & 1" below. Fertigate the balance before corn tassels. Nitrogen: 100-180 lb/ac. Phosphate: 20-50 lb/ac. Potassium: sideband if required.

### Crop Water Use and Irrigation:

Total seasonal moisture use - 470 mm

Tasseling Stage: 5 mm/day

Silking Stage: 6 mm/day

Kernel Formation: 5 mm/day

Maintain good soil moisture throughout the growing season. Use a soil probe to check moisture status.

### Harvest:

Cut at about 3/4 milk line. Moisture content will be about 65 - 70%. Corn silage price is for silage already in the pit. Price (adjusted to 65% moisture) based on the barley price times 11. Custom silage harvest - \$11/t for under 3.5 mile haul.

\* Value very dependent on location and market need.

### Handling, Storage and Grading:

Call an Irrigation Agrologist at 778-5041 or 867-5500 to get current information on silage.

### Rotations and Crop Protection:

Specialized equipment is required for seeding, but can be hired custom. Group 3 residues can stunt corn.

## ECONOMICS

**CROP: BARLEY SILAGE**

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$18.85	
Seed treatment			\$0.00	
Fertilizer:	N	100	lb	\$54.25
	P	40	lb	\$23.57
	K	10	lb	\$7.32
Herbicide			\$24.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$5.03	
Equipment repair			\$4.00	
Custom work			\$0.00	
Irrigation power	7	inches	\$19.40	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$21.44	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.04	
<b>Total Cash Costs</b>			<b>\$201.26</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.36</b>	
<b>Harvest Costs</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Custom Silage \$/ac	110	132	154	
<b>Total Costs</b>	<b>\$380</b>	<b>\$402</b>	<b>\$424</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield t/ac	10	12	14	
Price \$/t *		\$30		
<b>Gross Return</b>	<b>\$300</b>	<b>\$360</b>	<b>\$420</b>	
<b>Net Return</b>	<b>-\$80</b>	<b>-\$42</b>	<b>-\$4</b>	
Specialized Equipment			\$/ac/yr	
<b>TOTAL</b>			<b>\$0.00</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

### Variety Selection:

Choose variety based on dry matter yield and resistance to disease and lodging. A six-row barley with smooth awns is recommended. Barley, CPS wheat & Triticale are all commonly used in cereal silage. Refer to CSIDC's 'Crop Varieties for Irrigation' publication.

### Seeding:

Plant population	270 to 300	plants/sq m.
TKW	41.0	grams
Seeding Rate	130.0	lb/ac

### Fertilization:

Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs.

### Crop Water Use and Irrigation:

Tillering: 1 to 3 mm/day

Flag Leaf to Flowering: 7 to 8 mm/day

Critical stages for moisture are at tillering and at flowering. Maintain soil at >50% available moisture. Use a soil probe to check moisture status. Allow the canopy to dry between irrigations to minimize disease pressure and lodging.

### Harvest:

Cut barley and CPS at soft dough stage. Moisture content 65 - 70%. Barley silage is priced in the pit at 65% moisture at the feed barley price x 10. Custom silage harvest - \$11/t for under 3.5 mile haul.

\* Value very dependent on location and market need.

### Handling, Storage and Grading:

Call an Irrigation Agrologist at 778-5041 or 867-5500 to get current information on silage.

### Rotations and Crop Protection:

Fungicide seed treatment recommended. Cereal on cereal will yield at least 15% less than cereal on broadleaf stubble, including silaged cereals. Break from cereal for one year to get higher yields and reduce disease build-up. Spot & net blotch can be severe in irrigated barley.

## ECONOMICS

**CROP: SEEDLING ALFALFA  
(NO COVER CROP)**

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed (c/w inoculant)			\$37.50	
Seed treatment			\$0.00	
Fertilizer: N	11	lb	\$5.97	
	P	50 lb	\$29.47	
	K	15 lb	\$10.98	
Herbicide			\$4.50	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$11.32	
Equipment repair			\$5.00	
Custom work			\$0.00	
Irrigation power	6	inches	\$8.40	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$21.15	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$3.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$3.21	
<b>Total Cash Costs</b>			<b>\$159.84</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$13.35	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$81.70</b>	
<b>Total Costs</b>			<b>\$241.55</b>	
<b>Returns</b>				
	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield t/ac	1.5	2.5	3.0	
Price \$/t		\$75		
<b>Gross Return</b>	<b>\$113</b>	<b>\$188</b>	<b>\$225</b>	
<b>Net Return</b>	<b>-\$129</b>	<b>-\$54</b>	<b>-\$17</b>	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.15	
Round Baler			\$6.60	
Bale Mover			\$2.60	
			\$0.00	
			\$0.00	
<b>TOTAL</b>			<b>\$13.35</b>	

**More Information:**

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

**Variety Selection:**

Refer to the 'Crop Varieties for Irrigation' publication produced by CSIDC.

**Seeding:**

Plant population	450	plants/sq m.
TKW	200,000	seeds/lb
Seeding Rate	10	lb/ac

**Fertilization:**

Nitrogen: inoculate with the correct strain of Rhizobium. Refer to the Saskatchewan Forage Crop Production Guide for more details. P rate: 20 - 50 lb/ac.

**Crop Water Use and Irrigation:**

Maintain good soil moisture throughout the growing season. Early moisture use is low, but ensure the small seedlings do not dry out. Once the crop is 6" tall, moisture use increases rapidly. Use a soil probe to check moisture status. Irrigate after cutting for fall regrowth.

**Harvest:**

Cut at 25% bloom, mid to late July for a single cut of hay in establishment year.

**Handling, Storage and Grading:**

% Moisture limits to prevent spoilage: small square bale - 18%; round soft core - 17%; round hard core - 16%

**Rotations and Crop Protection:**

Do not seed the year after treatment with Lontrel or other Group 4 residual broadleaf herbicides.

## ECONOMICS

**CROP: ESTABLISHED ALFALFA**  
2-Cut Harvest

ITEM	UNIT			My Farm	
				\$/ac	\$/ac
Seed				\$0.00	
Seed treatment/inoc				\$0.00	
Fertilizer:	N	11	lb	\$5.97	
	P	50	lb	\$29.47	
	K	15	lb	\$10.98	
Herbicide				\$0.00	
Insecticide				\$0.00	
Fungicide				\$0.00	
Equipment fuel				\$9.44	
Equipment repair				\$6.18	
Custom work				\$0.00	
Irrigation power	15	inches		\$21.00	
Irrigation repair				\$10.15	
Irrigation service/water charge				\$23.78	
Crop insurance				\$0.00	
Hail insurance				\$0.00	
Hired labour	1	hr/ac		\$15.00	
Other				\$5.00	
Farm overhead				\$9.20	
Operating int	4.1	%		\$3.00	
<b>TOTAL CASH COSTS</b>				<b>\$149.15</b>	
Farm Equipment & Buildings				\$23.45	
Irrigation System				\$25.22	
Specialized Equipment				\$13.35	
Land				\$19.68	
<b>Total Non Cash Costs</b>				<b>\$81.70</b>	
<b>Total Costs</b>				<b>\$230.85</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>		
Yield t/ac*	3.0	4.0	5.0		
Price \$/t		\$85			
<b>Gross Return</b>	<b>\$255</b>	<b>\$340</b>	<b>\$425</b>		
<b>Net Return</b>	<b>\$24</b>	<b>\$109</b>	<b>\$194</b>		
Specialized Equipment				\$/ac/yr	
Mower/condition				\$4.15	
Round Baler				\$6.60	
Bale Mover				\$2.60	
<b>TOTAL</b>				<b>\$13.35</b>	

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

Establishment year losses (p. 21) over 5 years of production are not included in budget.

### Fertilization:

N rate: none if properly inoculated. P rate: Broadcast a minimum of 50 lb/ac annually, in April or right after the bales are hauled from any cut.

### Crop Water Use and Irrigation:

Total average seasonal moisture requirement: 680 mm

Peak moisture use (before cutting): 7.5 mm/day

Maintain good soil moisture throughout the growing season.

Use a soil probe to check moisture status. Irrigate immediately after removing bales from any cut; irrigate after final cut to encourage regrowth before freeze up.

### Harvest:

For good quality alfalfa, cut at 10% flower. First cut late June or early July; second cut completed by Aug 15. Delaying a cut will set back the dates of subsequent cuts & increase the chance of winter injury. Alfalfa hay should have >18% protein.

### Handling, Storage and Grading:

Hay moisture limits to prevent spoilage: small square bale - 18%; round soft core - 17%; round hard core - 16%. Storing for quality is just as important as harvesting for quality.

### Rotations and Crop Protection:

Aim for at least 6" regrowth before freeze-up.

\* Total yield per year

## ECONOMICS

## AGRONOMICS

**CROP: ESTABLISHED ALFALFA**  
**3-Cut Harvest**

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$0.00	
Seed treatment/inoc			\$0.00	
Fertilizer: N	11	lb	\$5.97	
P	50	lb	\$29.47	
K	15	lb	\$10.98	
Herbicide			\$0.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$14.15	
Equipment repair			\$9.27	
Custom work			\$0.00	
Irrigation power	14	inches	\$19.60	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$23.48	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	1	hr/ac	\$15.00	
Other			\$10.50	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$3.23	
<b>Total Cash Costs</b>			<b>\$161.00</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$22.22	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$90.57</b>	
<b>Total Cost</b>			<b>\$251.57</b>	
<b>Returns</b>				
	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield t/ac *	3.5	4.5	5.5	
Price \$/t		\$95		
<b>Gross Return</b>	<b>\$333</b>	<b>\$428</b>	<b>\$523</b>	
<b>Net Return</b>	<b>\$81</b>	<b>\$176</b>	<b>\$271</b>	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$6.91	
Round Baler			\$10.99	
Bale Mover			\$4.32	
<b>TOTAL</b>			<b>\$22.22</b>	

Establishment year losses (p. 21) over 4 years of production are not included in budget.

**Fertilization:**

N rate: none if properly inoculated. Apply 50 lb/ac P annually either broadcast or fertigated.

**Crop Water Use and Irrigation:**

Total average seasonal moisture requirement: 680 mm  
 Peak moisture use (before cutting): 7.5 mm/day  
 Maintain good soil moisture throughout the growing season. Use a soil probe to check moisture status. Irrigate immediately after removing bales from any cut; irrigate after final cut to encourage regrowth before freeze up.

**Harvest:**

For very good quality, high protein dairy alfalfa, cut at first flower. First cut should be completed by 3rd week in June. Delaying a cut will set back the dates of subsequent cuts and increase the chance of winter injury. Alfalfa hay should have >18% protein.

**Handling, Storage and Grading:**

Hay moisture limits to prevent spoilage: small square bale - 18%; round soft core - 17%; round hard core - 16%. Storing for quality is just as important as harvesting for quality.

**Rotations and Crop Protection:**

Aim for at least 6" regrowth before freeze-up.

\* Total yield per year

**More Information:**

Call an Irrigation Agrolgist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## ECONOMICS

## AGRONOMICS

**CROP: TIMOTHY**

**My Farm**

ITEM	#	UNIT	\$/ac	\$/ac
Fertilizer:	N	170	lb	\$92.22
	P	60	lb	\$35.36
	K	50	lb	\$36.59
Herbicide				\$14.00
Insecticide				\$0.00
Fungicide				\$0.00
Equipment fuel				\$15.10
Equipment repair				\$9.27
Custom work				\$0.00
Irrigation power	15	inches		\$21.00
Irrigation repair				\$10.15
Irrigation service/water charge				\$23.78
Crop insurance				\$0.00
Hail insurance				\$0.00
Hired labour	3	hr/ac		\$45.00
Other				\$6.00
Farm overhead				\$9.20
Operating interest	4.1	%		\$6.51
<b>Total Cash Costs</b>				<b>\$324.18</b>
Farm Equipment & Buildings				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$56.25
Land				\$19.68
<b>Total Non Cash Costs</b>				<b>\$124.60</b>
<b>Total Cost</b>				<b>\$448.78</b>
<b>Return</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield t/ac	2.5	3.5	4.5	
Price \$/t		\$125		
<b>Gross Return</b>	<b>\$313</b>	<b>\$438</b>	<b>\$563</b>	
<b>Net Return</b>	<b>-\$136</b>	<b>-\$11</b>	<b>\$114</b>	
Specialized Equipment				\$/ac/yr
Mower/condition				\$4.15
Big square baler				\$30.09
Bale Mover				\$2.60
Swath inverter				\$2.01
Storage shed				\$17.41
<b>TOTAL</b>				<b>\$56.25</b>

### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

### Variety Selection:

Discuss with your local dealer and other producers. Refer to CSIDC's 'Crop Varieties for Irrigation' publication.

### Seeding:

Plant population	200	plants/sq m.
TKW	1,232,000	seeds/lb
Seeding Rate	10	lb/ac
Seeding Cost	\$17.00	\$/ac

Seed in the fall (late Aug-early Sept) after a burn off with Glyphosate. Plan ahead to be able to seed late August. Perennial weed control is critical. Seed into a firm seedbed with on-row packing or seed directly into stubble. Irrigate to ensure good stand establishment.

### Fertilization:

Every tonne of timothy uses 35lb N; 10lb P; 40lb K. Max of 15lb/ac phosphate with the seed in good moisture conditions. Apply 50-100lb/ac phosphate prior to seeding. Apply at least 50lb/ac N per cut.

### Crop Water Use and Irrigation:

Total average seasonal moisture use: 590 mm/day

Peak moisture use (mid-July): 7 mm/day

Maintain good soil moisture throughout the growing season.

Use a soil probe to check moisture status. Irrigate immediately after hauling bales from any cut.

### Harvest:

Cut when the timothy has reached its full height with long, coarse stems and heads. Second cut late Aug will have smaller heads and finer stems. Cut the outside rounds separately and cut out weedy areas first. Avoid any contamination with straw residue and dirt. Cut with a haybine or discbine, crimp and turn for rapid swath drying. Grazing can damage the stand, and can become an export problem if manure is found in the bales.

### Handling, Storage and Grading:

Bale at less than 12% moisture for large square bales. Storing for quality is just as important as harvesting for quality.

### Rotations and Crop Protection:

Achieve, MCPA, Lontrel and Banvel may be used. Check recropping intervals following residual herbicides in Groups 2, 3 and 4.

## ECONOMICS

### CROP: ANNUAL RYEGRASS

Partial Budget				My Farm
ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$16.25	
Seed treatment			\$0.00	
Fertilizer:	N	130	lb	\$70.52
	P	40	lb	\$23.57
	K	15	lb	\$10.98
Herbicide			\$8.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$15.10	
Equipment repair			\$9.27	
Custom work			\$0.00	
Irrigation power	12	inches	\$16.80	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.90	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	1	hr/ac	\$15.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating int	4.1	%	\$4.67	
<b>Total Cash Costs</b>			<b>\$232.41</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$68.36</b>	
<b>Total Costs</b>			<b>\$300.76</b>	
<b>Return</b>				
Returns dependent upon method of utilization.				
Specialized Equipment			\$/ac/yr	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
<b>TOTAL</b>			<b>\$0.00</b>	

#### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

#### Variety Selection:

Italian ryegrasses are leafy throughout the growing season and develop few seed heads. Westerwolds ryegrass grows taller than Italian varieties and produces seed in the crop year. Westerwold varieties are better suited for silage or hay production but yield lower than annual cereal forages. A mixture of Italian and Westerwold varieties can be formulated to suit an irrigator's needs. Consult a retailer for variety availability.

#### Seeding:

Seed in mid- to late May and 3/4 to 1 inch depth into a firm seedbed. A seeding rate of 10-15 lb./acre is recommended depending on variety and type of ryegrass. If broadcasting seed, increase rate by 10%.

#### Fertilization:

Nitrogen and phosphorus fertility rates should be similar to cereal crop production. Previously manured soils are preferable, as mineralized nutrients are efficiently used by this grass. If removing hay or silage from the field, plan to replace about 50lb N each time. Max of 15lb./ac phosphate with the seed in good moisture conditions.

#### Crop Water Use and Irrigation:

Irrigate to maintain soil water content above 50% field capacity. The average total seasonal water requirement is 500 mm. Irrigation is critical following a cutting or grazing.

Peak moisture use (mid-July): 7 mm/day

#### Harvest:

Ryegrass can be harvested as pit silage, bale silage or hay in up to two cuts (mid July, mid-Aug) and/or subsequently fall grazed for two to four months. It may be under seeded to barley silage (harvested early Aug) and then grazed. Harvest for hay can be difficult as ryegrass is difficult to dry down due to its waxy cuticle. Ryegrass can survive -10°C in the fall and will remain green under the snow. Harvest or graze before seed is set to avoid volunteering and potential for herbicide resistance problems.

#### Feed Quality;

Average protein content is 16%. Nitrate accumulation can be a concern following a frost. Nitrate levels above 0.5% (DM basis) require additional feeding management.

#### Rotations and Crop Protection:

Ryegrass is a competitive grass that may not require in-crop weed control when direct-seeded following glyphosate application. Achieve, 2,4-D, MCPA, Lontrel, Banvel and Target may be used and the ryegrass fed and/or grazed with recommended pre-harvest intervals. Check recropping intervals following residual herbicides in Groups 2, 3 and 4.

## ECONOMICS

### CROP: SEEDLING PASTURE Greenfeed Cover Crop

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$32.98	
Seed treatment/inoc			\$0.00	
Fertilizer: N	80	lb	\$43.56	
P	50	lb	\$29.47	
K	15	lb	\$10.98	
Herbicide			\$4.50	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$13.21	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.32	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$3.00	
Farm overhead			\$9.20	
Operating interest	4.1	%	\$4.09	
<b>Total Cash Costs</b>			<b>\$203.63</b>	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$13.35	
Land			\$19.68	
<b>Total Non Cash Costs</b>			<b>\$81.70</b>	
<b>Total Cost</b>			<b>\$285.33</b>	
<b>Return</b>	<b>LO</b>	<b>AV</b>	<b>HI</b>	
Yield t/ac	2.0	2.5	3.0	
Price \$/t		\$35		
<b>Gross Return</b>	<b>\$70</b>	<b>\$88</b>	<b>\$105</b>	
<b>Net Return</b>	<b>-\$215</b>	<b>-\$198</b>	<b>-\$180</b>	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.15	
Round Baler			\$6.60	
Bale Mover			\$2.60	
<b>TOTAL</b>			<b>\$13.35</b>	

#### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

#### Variety Selection:

Species and variety selection for an irrigated pasture will take into account the time of the season when you will want to utilize the grazing. For intensive grazing, a series of species can be planted, providing a better range in seasonal forage production than any single species. This is preferable to seeding the same grass species together in a mix. You can include a legume with a grass. Consult a forage specialist for advice on forage selection and matching forage production to your seasonal forage requirements.

**Cereal Cover Crop:** Select a cereal with short, strong straw to minimize lodging and competition. Reduce the normal seeding rate by up to 50%.

#### Seeding:

Plant population	CPS Wheat	125	plants/sq m.
TKW		35.0	grams
Seeding Rate		55	lb/ac
Plant population	Meadow Brome	200	plants/sq m.
TKW		5	seeds/lb
Seeding Rate		10	lb/ac

#### Fertilization:

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs. Including a legume into a pasture will change the fertility requirements. If the proportion of legume is < 50%, use a grass forage fertility recommendation. If the proportion of legume is > 50%, use a legume fertility recommendation. Deep band N and P fertilizer prior to seeding.

#### Crop Water Use and Irrigation:

Maintain soil water content above 50% field capacity throughout the growing season. Use a soil probe to check moisture status. Keep soil surface moist to ensure adequate moisture in the seedling root zone. Overwatering will drown out the seedlings.

#### Harvest:

Cut the cereal at the soft dough stage. Bale the swaths as soon as possible to avoid smothering the seedling forage.

#### Rotations and Crop Protection:

Check recropping restrictions if residual herbicides were applied to previous crops.

## ECONOMICS

## AGRONOMICS

**CROP: MEADOW BROME PASTURE**  
Established

My Farm

ITEM		UNIT	\$/ac	\$/ac
Fertilizer:	N	110	lb	\$45.10
	P	30	lb	\$17.68
	K	15	lb	\$10.98
Equipment fuel				\$1.26
Equipment repair				\$1.00
Custom work				\$0.00
Irrigation power		14	inches	\$19.60
Irrigation repair				\$10.15
Irrigation service/water charge				\$23.48
Farm overhead				\$9.20
Livestock cost	\$0.00		\$/hd	\$0.00
Vet/med	\$7.00		\$/hd	\$14.00
Breeding	\$0.00		\$/hd	\$0.00
Min (salt)	\$3.30		\$/hd	\$6.60
Supplements	\$0.00		\$/hd	\$0.00
Hormone Implant	\$3.40		\$/hd	\$6.80
Operating int	4.1		%	\$3.40
<b>Total Cash Costs</b>	<b>\$84.62</b>		\$/hd	<b>\$169.25</b>
Farm Equipment & Buildings *				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$8.52
Land				\$19.68
<b>Total Non Cash Costs</b>				<b>\$76.88</b>
<b>Total Cost</b>	<b>\$123.06</b>		(\$/hd)	<b>\$246.12</b>
Stocking Rate (hd/ac)				2.0
Days of Grazing				115
<b>Cash Cost \$/hd/day</b>				<b>\$0.59</b>
<b>Total Cost \$/hd/day</b>				<b>\$1.07</b>
Average Daily Gain (lb.)		2		2.5
<b>Total Cost per lb of Gain (\$/lb)</b>				<b>\$0.54</b>
				<b>\$0.43</b>
Specialized Equipment				\$/ac/yr
Cross Fencing (1 mile)				\$1.16
Perimeter Fencing				\$4.27
Water Supply				\$3.09
<b>TOTAL</b>				<b>\$8.52</b>

\* Varies significantly based on individual's utilization of owned equipment & buildings.

### More Information:

Call an Irrigation Agrolgist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

### Cattle Assumptions:

Stocking Rate	2.0	hd/ac
Days Grazing	115	days
Weight to Pasture	600	lb/hd
ADG (with 3% shrink)	2.0	lb/hd
Weight off Pasture	830	lb/hd

This budget does not include establishment year losses (p. 26). Pastures frequently need to be renovated or rotated out after 7 years in production.

### Livestock

### Stocking Rate

Yearlings 2.0 head/ac

Estimates of stocking rate are based on a limited amount of information and producer experience. These may change as more information becomes available.

### Fertilization:

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs. Including a legume into a pasture will change the fertility requirements. If the proportion of legume is < 50%, use a grass forage fertility recommendation. If the proportion of legume is > 50%, use a legume fertility recommendation. Deep band N and P fertilizer prior to seeding.

### Crop Water Use and Irrigation:

Total average seasonal moisture use: 590 mm/day

Peak moisture use (mid-July): 7 mm/day

Maintain good soil moisture throughout the growing season.

Use a soil probe to check moisture status. Irrigate after grazing to encourage regrowth.

### Watering Facility:

Ensure watering facilities allow adequate access for a numerous head at one time.

### Pasture Management:

Rotational grazing is required. Adequate recovery time must be allocated to each paddock. Forage can be re-grazed when reaches 6-8 inches in height. Match paddock rotations and/or stocking rate to forage supply and availability to optimize gains. By maintaining the pasture in a vegetative stage, digestibility and ADG can be kept at a high level. Fencing and irrigated pasture must take into account movement of a pivot or other sprinkler irrigation system.

## ECONOMICS

### CROP: SEED POTATO

Norland Elite II

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$611.00	
Seed treatment/inoc			\$70.20	
Fertilizer: N	150	lb	\$81.37	
P	90	lb	\$53.04	
K	90	lb	\$65.86	
Herbicide			\$115.00	
Insecticide			\$22.00	
Fungicide			\$110.00	
Equipment fuel			\$120.00	
Equipment repair			\$80.00	
Custom work			\$56.00	
Irrigation power *			\$0.00	
Irrigation repair *			\$0.00	
Irrigation service/water charge *			\$0.00	
Crop insurance **	14	tons/ac	\$147.42	
Hail insurance			\$0.00	
Hired labour	15	hr/ac	\$225.00	
Inspection Fees			\$15.00	
Storage O & M			\$71.00	
Farm overhead			\$9.20	
Operating int	4.1	%	\$37.97	
<b>Total Cash Costs</b>			<b>\$1,890.06</b>	
Farm Equipment & Buildings			\$12.94	
Irrigation System *			\$0.00	
Specialized Equipment			\$311.06	
Land Rental Rate			\$235.00	
<b>Total Non Cash Costs</b>			<b>\$559.01</b>	
<b>Total Costs</b>			<b>\$2,449.07</b>	
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	
Yield ton/ac	10	12	14	
Price \$/ton		\$300		
<b>Gross Return</b>	<b>\$3,000</b>	<b>\$3,600</b>	<b>\$4,200</b>	
<b>Net Return</b>	<b>\$551</b>	<b>\$1,151</b>	<b>\$1,751</b>	
Specialized Equipment			\$/ac/yr	
Potato Field Equipment			\$130.38	
Potato Handling Equipment			\$60.18	
Potato Storage Facility			\$120.51	
<b>TOTAL</b>			<b>\$311.06</b>	

\* Provided by landowner.

#### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

This potato budget is based on 500 acre potato farm that rents land.

#### Variety Selection:

Choose varieties based on the intended market.

#### Seeding:

Plant population	21780.0	plants/acre
Weight of Seed Piece	60.0	grams
Seeding Rate	1.3	tons/ac

#### Fertilization:

Fertilize according to soil test recommendations. Response to nitrogen varies by cultivar. Be aware of the agronomic and fertility requirements of the variety being grown.

#### Crop Water Use and Irrigation:

Average seasonal crop water use: 520 mm

Average weekly crop water use:

June: 19 mm increasing to 38 mm weekly

July: 38 mm weekly through the month

Aug.: 38 mm decreasing to 19 mm in 3rd week

Effect of adequate and consistent irrigation by crop stage:

*Planting to Emergence* (1 to 2 weeks) - increases stem number and promotes early tuber initiation.

*Emergence to Stolon Initiation* (2 to 3 weeks) - increases vegetative growth and tuber set.

*Stolon Initiation to Tuber Set* (3 to 4 weeks) - increases stolon growth and tuber initiation.

*Bulking* (4 to 8 weeks) - increases tuber size and uniformity

Maintain the soil water content above 70% field capacity.

#### Harvest:

Top kill: to ensure removal of vine growth that interferes with harvest; to initiate skin set and mature tubers; to control tuber size and to prevent the spread of disease.

#### Handling, Storage and Grading:

Field & storage inspection must be done by CFIA.

#### Rotations and Crop Protection:

Use a four year rotation to minimize disease and weed problems. Do not seed where residues of Group 2 and 4 herbicides may be present. When renting out land for potato production, it is the land owner's responsibility to disclose herbicide use, including spot usage for perennial weed control. When in doubt, consult a potato specialist.

\*\* Crop Insurance rates currently under review.

## ECONOMICS

### CROP: TABLE POTATO

ITEM	Norland		My Farm
	#	UNIT	\$/ac
Seed			\$351.00
Seed treatment/inoc			\$48.60
Fertilizer: N	150	lb	\$81.37
P	90	lb	\$53.04
K	90	lb	\$65.86
Herbicide			\$115.00
Insecticide			\$22.00
Fungicide			\$75.00
Equipment fuel			\$105.00
Equipment repair			\$80.00
Custom work			\$48.00
Irrigation power *			\$0.00
Irrigation repair *			\$0.00
Irrigation service/water charge *			\$0.00
Crop insurance **	11	tons/ac	\$86.71
Hail insurance			\$0.00
Hired labour	15	hr/ac	\$225.00
Other			\$0.00
Storage O & M			\$71.00
Farm overhead			\$9.20
Operating interest	4.1	%	\$29.45
<b>Total Cash Costs</b>			<b>\$1,466.24</b>
Farm Equipment & Buildings			\$12.94
Irrigation System *			\$0.00
Specialized Equipment			\$311.06
Land Rental Rate			\$235.00
<b>Total Non Cash Costs</b>			<b>\$559.01</b>
<b>Total Costs</b>			<b>\$2,025.25</b>
<b>Returns</b>	<b>Low</b>	<b>Average</b>	<b>High</b>
Yield ton/ac	12	14	16
Price \$/ton		\$200	
<b>Gross Return</b>	<b>\$2,400</b>	<b>\$2,800</b>	<b>\$3,200</b>
<b>Net Return</b>	<b>\$375</b>	<b>\$775</b>	<b>\$1,175</b>
Specialized Equipment			\$/ac/yr
Potato Field Equipment			\$130.38
Potato Handling Equipment			\$60.18
Potato Storage Facility			\$120.51
TOTAL			\$311.06

\* Provided by landowner.

#### More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: [www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com).

## AGRONOMICS

This potato budget is based on 500 acre potato farm that rents land.

#### Variety Selection:

Choose varieties based on the intended market.

#### Seeding:

Plant population	14520.0	plants/acre
Weight of Seed Piece	60.0	grams
Seeding Rate	0.9	tons/ac

#### Fertilization:

Soil test to ensure adequate fertility for yield and quality. Fertigation with 28-0-0 is often utilized to meet fertility requirements and avoid nutrient leaching.

#### Crop Water Use and Irrigation:

Average seasonal crop water use: 520 mm

Average weekly crop water use:

June: 19 mm increasing to 38 mm weekly

July: 38 mm weekly through the month

Aug.: 38 mm decreasing to 19 mm in 3rd week

Effect of adequate and consistent irrigation by crop stage:

*Planting to Emergence* (1 to 2 weeks) - increases stem number and promotes early tuber initiation.

*Emergence to Stolon Initiation* (2 to 3 weeks) - increases vegetative growth and tuber set.

*Stolon Initiation to Tuber Set* (3 to 4 weeks) - increases stolon growth and tuber initiation.

*Bulking* (4 to 8 weeks) - increases tuber size and uniformity

Maintain soil water content above 70% field capacity.

#### Harvest:

Top kill: to remove vine growth that interferes with harvest; to initiate skin set and mature tubers; to control tuber size and to prevent the spread of disease.

#### Rotations and Crop Protection:

Use a four year rotation to minimize disease and weed problems. Do not seed where residues of Group 2 and 4 herbicides may be present. When renting out land for potato production, it is the land owner's responsibility to disclose herbicide use, including spot usage for perennial weed control. When in doubt, consult a potato specialist.

\*\* Crop Insurance rates currently under review.

## Appendix A

<b>CROP</b>	<b>Seed Cost</b>	<b>Herbicide</b>	<b>Fungicide</b>	<b>Custom Costs</b>	<b>Other Costs</b>
Hard Wheat	\$0.16/lb	Target / Horizon	Dividend XL		
Durum	\$0.18/lb	Buctril M / Puma	Dividend XL / Proline		
CPS Wheat	\$0.15/lb	Target / Horizon	Dividend XL		
Soft Wheat	\$0.15 /lb	Target / Horizon	Dividend XL / Proline		
Malt Barley	\$0.15/lb	Achieve Liquid Gold	Dividend XL		
Feed Barley	\$0.13 /lb	Achieve Liquid Gold	Dividend XL		
Canola	\$9.15/lb *	Glyphosate	Helix / Proline		
Brown/Oriental Mustard	\$1.91/lb	Select / Centurion			
Yellow Mustard	\$2.26/lb	Select / Centurion			
Flax	\$0.27/lb	FlaxMax			
Pea	\$0.11/lb	Viper	Headline		
Fababean	\$0.28 /lb	Treflan EC; Sencor; Reglone			
Red Lentil	\$0.55/lb	Edge; Reglone	Headline		
Dry Bean	\$0.85/lb	Edge; Basagran	Lance		
Grain Corn	\$2.24 / 1000 seeds *	Glyphosate	Poncho	Grain drying	
Corn Grazing	\$2.24 / 1000 seeds *	Glyphosate	Poncho		
Corn Silage	\$2.24 / 1000 seeds *	Glyphosate	Poncho	Silage	
Barley Silage	\$0.13/lb	Achieve Liquid Gold		Silage	
Seedling Alfalfa	\$3.75/lb	Glyphosate 0.5 L			Twine
Alfalfa (2 or 3 cut)	\$0.13/lb				Twine
Seedling Pasture with greenfeed cover	\$0.18/lb	Glyphosate 0.5 L			
Pasture	\$2.50/lb				Twine
Timothy	\$2.63/lb				
Timothy	\$1.70/lb	Glyphosate; 2(2,4D+Banvel)			Twine, ground sheets
Ryegrass	\$1.25/lb	Glyphosate; MCPA		<i>variable</i>	<i>variable</i>
Seed Potato	\$470/ton	Eptam 8-E; Poast Ultra;	Maxim; Bravo; Quadris	7 aerial spray	Inspection
Table Potato	\$390/ton	Reglone	Maxim; Dithane; Quadris	6 aerial spray	

\* Seed price includes the Technology User Agreement for Round-Up Ready corn and canola.

### For more information:

Irrigation in Saskatchewan website:

[www.irrigationsaskatchewan.com](http://www.irrigationsaskatchewan.com)

Saskatchewan Ministry of Agriculture - Irrigation Branch - Outlook  
(306) 867-5500

Canada-Saskatchewan Irrigation Diversification Centre  
(306) 867-5400  
[www.agr.gc.ca/pfra/csfdc/](http://www.agr.gc.ca/pfra/csfdc/)