



Irrigation Crop Diversification Corporation

**Irrigation Economics and Agronomics
Saskatchewan
2011**

Disclaimer

The authors of the Irrigation Economics and Agronomics Publication attempt to provide accurate and useful information. The numbers provided for yield targets are estimates only based on discussions with irrigation farmers. Fertility requirements are based on the yield targets used. Actual yields achieved are affected by seasonal growing conditions and individual management skills.

The prices used for crops and inputs are based on discussions with grain marketing companies and farm supply retailers and are only accurate at the time of printing. Therefore the authors and the Irrigation Crop Diversification Corporation assume no responsibility for any actions taken by any reader of this publication based on the information provided.

IRRIGATION ECONOMICS AND AGRONOMICS SASKATCHEWAN 2011

These budgets are to be used as guidelines only.

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

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For more information:

Irrigation in Saskatchewan website:

www.irrigationsaskatchewan.com

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

Irrigation Crop Budget Assumptions

- Projected crop prices and fertilizer prices in 2011 are estimated for the purposes of budgeting based on January 27 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 2011 where applicable and also from industry. Refer to Appendix A for more details.
- Seed treatment/inoculation information from dealers and Saskatchewan Ministry of Agriculture 2011 Guide to Crop Protection. For budgeting purposes in this publication cereals are treated with Dividend at high rate, flax is treated with Vitaflo and the canola seed price includes seed treatment
- Fertilizer price from industry January 27, 2011;
 - o Nitrogen based on 46-0-0 at \$575/tonne (\$0.57/lb)
 - o Phosphorus based on 12-51-0 at \$775/tonne (\$0.61/lb)
 - o Potassium based on 0-0-62 at \$610/tonne (\$0.45/lb)
- Herbicide, insecticide, and fungicide costs are based on dealer information. Refer to Appendix A for more details on herbicides.
- Equipment repair based on Saskatchewan Ministry of Agriculture Crop Planning Guides 2011 numbers for conventionally-tilled grain crops where applicable. Equipment fuel and repair for other crops estimated based on producer experience. Fuel cost based on \$1.05/L of diesel.
- 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 the long term average seasonal rainfall for the Outlook area, (6.5 inches for normal season crops like cereals, oilseeds and pulses, and 7.5 inches for long season crops like perennial forages and corn).
- 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 \$100,000 (pivot, pump, and mainline cost) over 130 acres.
- Irrigation service charge based on projected 2011 rate for SSRID (base \$19.40, with a water usage adjustment; \$3.50 for 12 inches).
- Crop insurance based on 2010 rates at 70% for soil class E in Risk Area 12. See Generic Insurance Cost Calculator at www.saskcropinsurance.com for 2011 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 4.8% 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 \$50,000 (50% of new cost \$100,000) 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 \$100,000 over 160 acres.
- Freight and marketing costs have not been included in these budgets. These costs are area and situation specific. Rail freight and elevation costs have been deducted for board grains.
- Prices for board feed grains are based on the January 27, 2011 PRO less freight (www.cwb.ca)
- **Target yields are based on producer experience. Variations can occur due to environmental conditions, management and soil productivity.**

ECONOMICS

CROP: HARD WHEAT

Item	Unit			My Farm \$/ac
Seed				\$24.75
Seed treatment				\$4.02
Soil test				\$0.65
Fertilizer:	N	125	lb	\$70.89
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	15	lb	\$6.70
Herbicide				\$18.50
Insecticide *				\$0.00
Fungicide **				\$0.00
Equipment fuel				\$17.85
Equipment repair				\$5.64
Custom work				\$0.00
Irrigation power	13	inches		\$18.20
Irrigation repair				\$11.28
Irrigation service/water charge				\$23.19
Crop insurance †	46	bu/ac		\$3.72
Hail insurance				\$7.80
Hired labour	0	hr/ac		\$0.00
Other				\$0.00
Farm overhead				\$9.20
Operating interest	4.8	%		\$5.86
Total Cash Costs				\$252.58
Farm Equipment & Buildings				\$53.58
Irrigation System				\$28.03
Specialized Equipment				\$0.00
Land				\$25.58
Total Non Cash Costs				\$107.18
Total Costs				\$359.76
Returns				
Target yield	bu/ac			75
Price	\$/bu (#1 13.5%)			\$8.14
Gross Return				\$611
Net Return				\$251
Specialized Equipment			\$/ac/yr	
TOTAL				\$0.00

More Information:

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

AGRONOMICS

Variety Selection:

Goodeve, Unity, Fieldstar and Shaw are wheat midge tolerant varieties. Glenn, Muchmore, and Carberry are all high yielding. 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	250.0	plants/sq m.
TKW	42.0	grams
Seeding Rate	110.0	lb/ac

Fertilization:

Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >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

Maturity: 6.5

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:

Dry 14.5%; 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.

‡ Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: DURUM

Item	UNIT		\$/ac	My Farm \$/ac
Seed			\$24.00	
Seed treatment			\$4.70	
Soil test			\$0.65	
Fertilizer:	N	155	lb	\$87.91
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	15	lb	\$6.70
Herbicide			\$18.50	
Insecticide *			\$0.00	
Fungicide			\$10.00	
Equipment fuel			\$17.85	
Equipment repair			\$5.64	
Custom work			\$7.00	
Irrigation power	15	inches	\$21.00	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$23.78	
Crop insurance †	54	bu/ac	\$4.43	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$6.76	
Total Cash Costs			\$291.52	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Total Costs			\$398.70	
Returns				
Target yield	bu/ac		85	
Price \$/bu (#2 11.5%)			\$6.32	
Gross Return			\$537	
Net Return			\$139	
Specialized Equipment			\$/ac/yr	
TOTAL			\$0.00	

More Information:

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

AGRONOMICS

Variety Selection:

Brigade and CDC Verona are high yielding varieties with good lodging resistance. Durum varieties require more days to mature than other wheats. See 'Crop Varieties for Irrigation' publication.

Seeding: Seed before May 15th.

Plant population	250.0	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 0-12" 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:

Dry 14.5%; 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. A fungicide application is recommended. Break from cereals for one year.

* Wheat midge may require control.

† Crop Insurance rates currently under review.

‡ Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: CPS WHEAT

ITEM	UNIT		My Farm \$/ac
Seed			\$17.16
Seed treatment			\$4.70
Soil test			\$0.65
Fertilizer:	N	115 lb	\$65.22
	P ₂ O ₅	40 lb	\$24.33
	K ₂ O	15 lb	\$6.70
Herbicide			\$18.50
Insecticide *			\$0.00
Fungicide **			\$0.00
Equipment fuel			\$17.85
Equipment repair			\$5.64
Custom work			\$7.00
Irrigation power	14	inches	\$19.60
Irrigation repair			\$11.28
Irrigation service/water charge			\$23.48
Crop insurance †	52	bu/ac	\$5.26
Hail insurance			\$7.80
Hired labour	0	hr/ac	\$0.00
Other			\$0.00
Farm overhead			\$9.20
Operating int	4.8	%	\$5.80
Total Cash Costs			\$250.17
Farm Equipment & Buildings			\$53.58
Irrigation System			\$28.03
Specialized Equipment			\$0.00
Land			\$25.58
Total Non Cash Costs			\$107.18
Total Costs			\$357.35
Returns			
Target yield	bu/ac		100
Price	\$/bu (1 CPSR)		\$6.07
Gross			\$607
Net Return			\$250
Specialized Equipment		\$/ac/yr	
TOTAL			\$0.00

More Information:

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

AGRONOMICS

Variety Selection:

Conquer is the only high yielding CPS-red midge tolerant variety. 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	250.0	plants/sq m.
TKW	42.0	grams
Seeding Rate	110.0	lb/ac

Fertilization:

Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >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:

Dry 14.5%; 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.

‡ Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: SOFT WHEAT

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$17.16	
Seed treatment			\$4.70	
Soil test			\$0.65	
Fertilizer:	N	155	lb	\$87.91
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	15	lb	\$6.70
Herbicide			\$18.50	
Insecticide *			\$0.00	
Fungicide			\$10.00	
Equipment fuel			\$17.85	
Equipment repair			\$5.64	
Custom work			\$7.00	
Irrigation power	17	inches	\$23.80	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.36	
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	4.8	%	\$6.73	
Total Cash Costs			\$290.27	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Total Costs			\$397.45	
Returns				
Target yield bu/ac			110	
Price \$/bu (1 CWSWS)			\$6.32	
Gross			\$695	
Net Return			\$298	
Specialized Equipment			\$/ac/yr	
TOTAL			\$0.00	

More Information:

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

AGRONOMICS

Variety Selection:

AC Andrew and Sadash have high yields and good lodging ratings. See 'Crop Varieties for Irrigation' publication.

Seeding: Seed before May 15th.

Plant population	250.0	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 0-12" 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:

Dry 14.5%; 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. A fungicide application is recommended. Avoid planting soft wheat on or near corn stubble.

* Wheat midge may require control.

† Crop Insurance rates currently under review.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: MALT BARLEY

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Seed			\$19.47	
Seed treatment			\$4.30	
Soil test			\$0.65	
Fertilizer:	N	85 lb	\$48.21	
	P ₂ O ₅	40 lb	\$24.33	
	K ₂ O	15 lb	\$6.70	
Herbicide			\$22.40	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$17.85	
Equipment repair			\$5.64	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$22.32	
Crop insurance †	61	bu/ac	\$6.26	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$5.50	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$5.37	
Total Cash Costs			\$231.26	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Total Costs			\$338.44	
Returns				
Target yield		bu/ac	100	
Price		\$/bu (2-row select)	\$5.53	
Gross			\$553	
Net Return			\$215	
Specialized Equipment			\$/ac/yr	
TOTAL			\$0.00	

More Information:

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

AGRONOMICS

Variety Selection:

CDC Copeland and Newdale are 2-row varieties with good lodging resistance and high yield. Six-row varieties CDC Clyde and CDC Laurence are approved malting varieties with good lodging ratings and high yield. Two-row varieties are more likely to be selected. See 'Crop Varieties for Irrigation' publication and variety recommendations of CMBTC¹.

Seeding: Seed before May 15th.

Plant population	270.0	plants/sq m.
TKW	41.0	grams
Seeding Rate	110.0	lb/ac

Fertilization:

Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs. Consider potassium and zinc status on eroded soils.

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. † Build up soil moisture prior to grain filling and draw down reserve through maturation to reduce both staining and lodging. **Irrigated barley is often rejected for malting due to staining of the sample.**

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:

Dry 14.5%; Tough 14.6%; Damp 17.0%

Rotations and Crop Protection:

Barley is less susceptible to fusarium head blight than wheat and durum, but 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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

¹ Canadian Malting Barley Technical Centre

ECONOMICS

CROP: FEED BARLEY

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Seed			\$21.58	
Seed treatment			\$4.30	
Soil test			\$0.65	
Fertilizer: N	110	lb	\$62.39	
P ₂ O ₅	40	lb	\$24.33	
K ₂ O	15	lb	\$6.70	
Herbicide			\$22.40	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$17.85	
Equipment repair			\$5.64	
Custom work			\$0.00	
Irrigation power	13	inches	\$18.20	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$23.19	
Crop insurance †	61	bu/ac	\$6.26	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$5.50	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$5.87	
Total Cash Costs			\$253.13	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Total Costs			\$360.31	
Returns				
Target yield		bu/ac	120	
Price		\$/bu (1 CW-Pool A)	\$5.09	
Gross			\$611	
Net Return			\$250	
Specialized Equipment			\$/ac/yr	
TOTAL			\$0.00	

More Information:

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

AGRONOMICS

Variety Selection:

Alston and 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 recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs. Consider potassium and zinc status on eroded soils.

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:

Dry 14.5%; Tough 14.6%; Damp 17.0%

Rotations and Crop Protection:

Barley is less susceptible to fusarium head blight than most other cereal types, but varieties differ in susceptibility. Reduce net blotch severity with variety selection, burying residue, leaving two years between barley crops. Fungicide application may be economical on susceptible varieties. Smuts reduces suitability of feed barley

† Crop Insurance rates currently under review.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: CANOLA

Hybrid, Herbicide tolerant

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$45.00	
Seed treatment			\$0.00	
Soil test			\$0.65	
Fertilizer: N	185	lb	\$104.92	
P ₂ O ₅	40	lb	\$24.33	
K ₂ O	15	lb	\$6.70	
Herbicide			\$6.00	
Insecticide *			\$0.00	
Fungicide			\$24.00	
Equipment fuel			\$18.90	
Equipment repair			\$5.64	
Custom work			\$7.00	
Irrigation power	16	inches	\$22.40	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.07	
Crop insurance †	37	bu/ac	\$10.76	
Hail insurance	7.2%		\$13.65	
Hired labour	0	hr/ac	\$0.00	
Farm overhead			\$9.20	
Operating int	4.8	%	\$7.94	
Total Cash Costs			\$342.43	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.17	
Land			\$25.58	
Total Non Cash Costs			\$107.35	
Total Costs			\$449.78	
Returns				
Target yield bu/ac			75	
Price \$/bu			11.00	
Gross			\$825	
Net Return			\$375	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
TOTAL			\$0.17	

More Information:

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

AGRONOMICS

Variety Selection:

Select a canola variety that is resistant or moderately resistant to blackleg and resistant to lodging. Refer to the publication "Crop Varieties for Irrigation" for production data specific to irrigation in Saskatchewan.

Seeding: Seed before May 15th.

Plant population		110.0	plants/sq m.
TKW	Hybrid Canola	5.0	grams
Seeding Rate		5.0	lb/ac

Fertilization:

Fertilizer rate based on 0-12" soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K. A soil test is recommended for fertilizer application based on soil nutrient levels and crop needs. Sulphate fertilization may be required if fall or spring soil conditions are conducive to leaching.

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 the late vegetative stage 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.

Handling, Storage and Grading:

Dry 10%; Tough 10.1%; Damp 12.5%

Rotations and Crop Protection:

Canola should be grown in a four year rotation to control disease. 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). Scout fields weekly during growing season checking for insects and diseases

† Crop Insurance rates currently under review.

* An insecticide application may be required for Flea beetle, Bertha Armyworm or Diamondback Moth control.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: BROWN/ORIENTAL MUSTARD

ITEM	UNIT		\$/ac	My Farm \$/ac
Seed			\$15.60	
Seed treatment			\$0.00	
Soil test			\$0.65	
Fertilizer: N	155	lb	\$87.91	
P ₂ O ₅	40	lb	\$24.33	
K ₂ O	15	lb	\$6.70	
Herbicide			\$36.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$22.05	
Equipment repair			\$4.86	
Custom work			\$0.00	
Irrigation power	20	inches	\$28.00	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$25.23	
Crop insurance *	24	bu	\$7.28	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$7.00	
Total Cash Costs			\$301.68	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.17	
Land			\$25.58	
Total Non Cash Costs			\$107.35	
Total Costs			\$409.03	
Returns				
Target yield	bu/ac		65	
Price	\$/bu		\$9.75	
Gross			\$634	
Net Return			\$225	
Specialized Equipment		\$/ac/yr		
Sideknife			\$0.17	
			\$0.00	
			\$0.00	
			\$0.00	
TOTAL			\$0.17	

More Information:

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

AGRONOMICS

Variety Selection:

Brown: Duchess, Centennial Brown, Amigo. 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 recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >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:

Dry 9.5% ; Tough 9.6%; Damp 12.5%

Rotations and Crop Protection:

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

* Crop Insurance rates currently under review.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: YELLOW MUSTARD

My Farm

ITEM	UNIT		\$/ac	\$/ac
Seed			\$19.89	
Seed treatment			\$0.00	
Soil test			\$0.65	
Fertilizer: N	155	lb	\$87.91	
P ₂ O ₅	40	lb	\$24.33	
K ₂ O	15	lb	\$6.70	
Herbicide			\$26.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$22.05	
Equipment repair			\$4.86	
Custom work			\$0.00	
Irrigation power	20	inches	\$28.00	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$25.23	
Crop insurance *	18	bu	\$8.63	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$6.90	
Total Cash Costs			\$297.22	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.17	
Land			\$25.58	
Total Non Cash Costs			\$107.35	
Total Costs			\$404.57	
Returns				
Target yield bu/ac			55	
Price \$/bu			\$11.09	
Gross			\$610	
Net Return			\$205	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
TOTAL			\$0.17	

More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: 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 recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K.

A soil test will give recommendations for fertilizer application based on soil nutrient levels and crop needs. Consider soil zinc status on eroded soils.

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:

Dry 9.5%; Tough 9.6%; Damp 12.5%

Rotations and Crop Protection:

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

* Crop Insurance rates currently under review.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: FLAX

ITEM	UNIT		\$/ac	My Farm \$/ac
Seed			\$15.00	
Seed treatment			\$2.85	
Soil test			\$0.65	
Fertilizer:	N	110	lb	\$62.39
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	15	lb	\$6.70
Herbicide			\$18.00	
Insecticide			\$0.00	
Fungicide			\$15.00	
Equipment fuel			\$19.95	
Equipment repair			\$7.52	
Custom work			\$0.00	
Irrigation power	15	inches	\$21.00	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$23.78	
Crop insurance *	26	bu/ac	\$6.48	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$5.98	
Total Cash Costs			\$257.90	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Total Costs			\$365.08	
Returns				
Target yield	bu/ac		55	
Price	\$/bu		\$14.00	
Gross			\$770	
Net Return			\$405	
Specialized Equipment			\$/ac/yr	
TOTAL			\$0.00	

More Information:

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

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

Variety Selection:

Prairie Thunder, CDC Bethune, Prairie Blue. Refer to "Crop Varieties for Irrigation" publication (CSIDC) for assistance. Use certified seed or seed must be tested to be deemed free of GMO flax.

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 recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >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:

Dry 10% ;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 is not recommended. 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		\$/ac	My Farm \$/ac
Seed			\$27.00	
Seed treatment / inoculant			\$11.40	
Soil test			\$0.65	
Fertilizer: N	0	lb	\$0.00	
	P ₂ O ₅	35	lb	\$21.29
	K ₂ O	15	lb	\$6.70
Herbicide			\$19.00	
Insecticide			\$0.00	
Fungicide			\$15.00	
Equipment fuel			\$19.95	
Equipment repair			\$10.44	
Custom work			\$5.00	
Irrigation power	18	inches	\$25.20	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.65	
Crop insurance*	33	bu/ac	\$4.39	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating int	4.8	%	\$5.39	
Total Cash Costs			\$232.12	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$8.55	
Land			\$25.58	
Total Non Cash Costs			\$115.73	
Total Costs			\$347.85	
Returns				
Target yield	bu/ac		85	
Price	\$/bu (#1 yellow)		\$6.50	
Gross			\$553	
Net Return			\$205	
Specialized Equipment			\$/ac/yr	
Flex Header			\$5.01	
Land Roller			\$3.54	
TOTAL			\$8.55	

More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: 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	80.0	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:

Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K.

Inoculate with a pea inoculant. Use a soil test to guide fertilizer application based on soil nutrient levels and crop needs. Peas have strong association with mychoriza to supplement P and micronutrient uptake

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:

Dry 16 %; Tough 16.1%; Damp 18.0%

Rotations and Crop Protection:

Three years between pea crops. Check recropping restrictions on Group 2 and Group 4 herbicides.

* Crop Insurance rates currently under review.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: FABABEAN

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$36.00	
Seed treatment / inoculant			\$3.26	
Soil test			\$0.65	
Fertilizer:	N	0	lb	\$0.00
	P ₂ O ₅	50	lb	\$30.41
	K ₂ O	15	lb	\$6.70
Herbicide			\$37.90	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$23.10	
Equipment repair			\$8.64	
Custom work			\$0.00	
Irrigation power	16	inches	\$22.40	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.07	
Crop insurance *	2132	lb/ac	\$8.17	
Hail insurance			\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$5.64	
Total Cash Costs			\$243.01	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.17	
Land			\$25.58	
Total Non Cash Costs			\$107.35	
Total Costs			\$350.36	
Returns				
Target yield	lb/ac		3250	
Price	\$/lb		\$0.11	
Gross			\$358	
Net Return			\$7	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
TOTAL			\$0.17	

More Information:

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

Variety Selection:

CDC Fatima and Florent are early maturing and have high yield potential and are 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. Fertilizer rate based on 0-12" 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:

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:

Dry 16; 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.

* Crop Insurance rates currently under review.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: RED LENTIL

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$15.75	
Seed treatment / inoculant			\$3.20	
Soil test			\$0.65	
Fertilizer:	N	0	lb	\$0.00
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	15	lb	\$6.70
Herbicide			\$34.65	
Insecticide			\$0.00	
Fungicide			\$15.00	
Equipment fuel			\$23.10	
Equipment repair			\$9.32	
Custom work			\$5.00	
Irrigation power	14	inches	\$19.60	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$23.48	
Crop insurance *	1199	lb/ac	\$12.14	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$5.44	
Total Cash Costs			\$234.43	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$8.55	
Land			\$25.58	
Total Non Cash Costs			\$115.73	
Total Costs			\$350.16	
Returns				
Target yield	lb/ac		3600	
Price	\$/lb		\$0.28	
Gross			\$1,008	
Net Return			\$658	
Specialized Equipment			\$/ac/yr	
Flex Header			\$5.01	
Land Roller			\$3.54	
TOTAL			\$8.55	

More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: www.irrigationsaskatchewan.com. Also refer to SK Pulse Grower website at www.saskpulse.com/growing/index.php?page=16

AGRONOMICS

Variety Selection:

Red lentil varieties have not been evaluated under irrigation. Choose variety with determinate growth habit.

Seeding:

Plant population	120.0	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. Use a soil test to guide fertilizer application based on soil nutrient levels and crop needs. Fertilizer rate based on soil available nutrients of 30 lb/ac N, 20 lb/ac P, 800 lb/ac K. Lentils have strong association with mycorrhiza to supplement P and micronutrient uptake

Crop Water Use and Irrigation:

Total seasonal average moisture requirement: 275 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. Lentils are sensitive to moisture stress during flowering and pod fill. 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:

Dry 14; Tough 14.1%; Damp 16.0%

Rotations and Crop Protection:

Three 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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: DRY BEAN

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$41.25	
Seed treatment / inoculant			\$9.85	
Soil test			\$0.65	
Fertilizer: **	N 60	lb	\$34.03	
	P ₂ O ₅ 40	lb	\$24.33	
	K ₂ O 15	lb	\$6.70	
Herbicide			\$27.25	
Insecticide			\$0.00	
Fungicide			\$75.00	
Equipment fuel			\$19.95	
Equipment repair			\$9.32	
Custom work			\$14.00	
Irrigation power	16	inches	\$22.40	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.07	
Crop insurance *	1700	lb/ac	\$25.62	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$14.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$9.13	
Total Cash Costs			\$393.62	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$17.86	
Land			\$25.58	
Total Non Cash Costs			\$125.05	
Total Costs			\$518.66	
Returns				
Target yield lb/ac			3600	
Price \$/lb			\$0.24	
Gross			\$864	
Net Return			\$345	
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	
TOTAL			\$17.86	

More Information:

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

Variety Selection:

AC Island and CDC White Mountain 2 have improved plant structure and fewer days to maturity. 'White Mountain' type pinto beans may receive a quality premium. Refer to CSIDC's 'Crop Varieties for Irrigation' publication.

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

Plant population	96000.0	plants/ac
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. Fertilizer rate based on 0-12" soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K. Dry beans may respond to the micronutrient zinc, a soil test for micronutrients is recommended

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:

Dry 15.4% ;Tough 15.5%; Damp 18.0%

Rotations and Crop Protection:

Check recropping restrictions on Group 2, 4, 6, 27 herbicides . Reduce White Mould (sclerotinia) incidence by with crop rotation to non-host crops like cereals and flax, choosing a less susceptible upright variety like Winchester, and treating at the appropriate stage with a fungicide . 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.

** May require 5lb./ac of zinc

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: GRAIN CORN

My Farm

ITEM	UNIT	\$/ac	\$/ac
Seed		\$0.07	
Seed treatment		\$8.00	
Soil test		\$0.65	
Fertilizer: N	120 lb	\$68.06	
P ₂ O ₅	30 lb	\$18.24	
K ₂ O	15 lb	\$6.70	
Herbicide		\$6.00	
Insecticide		\$0.00	
Fungicide		\$0.00	
Equipment fuel		\$14.70	
Equipment repair		\$5.37	
Custom work		\$12.50	
Irrigation power	13 inches	\$18.20	
Irrigation repair		\$11.28	
Irrigation service/water charge		\$23.19	
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	4.8 %	\$4.80	
Total Cash Costs		\$206.96	
Farm Equipment & Buildings		\$53.58	
Irrigation System		\$28.03	
Specialized Equipment		\$8.35	
Land		\$25.58	
Total Non Cash Costs		\$115.53	
Drying Costs			
Custom Drying \$/ac		19	
Total Costs		\$341	
Returns			
Target yield bu/ac		150	
Price \$/bu		\$6.00	
Gross		\$900	
Net Return		\$559	
Specialized Equipment		\$/ac/yr	
Planter		\$5.01	
Corn Header		\$3.34	
TOTAL		\$8.35	

More Information:

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

Variety Selection:

Select a variety for grain corn production that can reach maturity prior to first fall frost in your area. For corn heat unit map and variety selection information refer to the Crops Information / Corn section on the website www.irrigationsaskatchewan.com. The Alberta Corn Committee website provides variety trial data for Saskatchewan.

Seeding:

TKW	380.0	grams
Seeding Rate	1	plants/ac

Fertilization:

Spring banding of fertilizer prior to seeding is recommended. Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K. Apply 100-120 lb/ac N, 25-30 lb/ac P and 10-15 lb/ac K. Soil testing including micronutrients is recommended.

If field conditions or soil texture cause concern for a high nutrient loss, fertigation may be an option.

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 soil moisture above 50 % field capacity 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. Be aware of the potential problem of volunteers that may result from the consecutive use of the same herbicide system annually. Early weed control is essential for optimal production. Corn is susceptible to Fusarium infection.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: CORN GRAZING

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Pasture acres	65			
# of cattle	200			
Consumption/day	20 lbs dry matter			
Dry matter (DM)	30%	per ton		
Seed			\$0.07	
Seed treatment			\$8.00	
Soil test			\$0.65	
Fertilizer:	N	100 lb	\$56.72	
	P ₂ O ₅	20 lb	\$12.16	
	K ₂ O	15 lb	\$6.70	
Herbicide			\$6.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$7.35	
Equipment repair			\$5.50	
Custom work			\$0.00	
Irrigation power	13	inches	\$18.20	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$23.19	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$3.92	
Total Cash Costs			\$168.94	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$13.52	
Land			\$25.58	
Total Non Cash Costs			\$120.70	
Total Costs			\$289.63	
Target DM in lbs *			9600	
Cow days/ac			480	
Cost \$/ac			\$290	
Cost/Hd/day			\$0.60	
Specialized Equipment			\$/ac/yr	
Planter			\$5.01	
Cross Fencing			\$1.16	
Perimeter Fencing			\$4.27	
Water Supply			\$3.08	
TOTAL			\$13.52	

More Information:

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

Variety Selection:

To select a corn variety for grazing, select an early-maturing silage corn variety. Silage varieties are more palatable and better suited for grazing than grain corn varieties. For corn heat unit map and variety selection information refer to the Crops Information / Corn section on the website www.irrigationsaskatchewan.com. The Alberta Corn Committee website provides variety trial data for Saskatchewan.

Seeding:

TKW	380.0	grams
Seeding Rate	1	plants/ac

Fertilization:

Spring banding of fertilizer prior to seeding is recommended. Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K. Apply 90-100 lb/ac N, 20-25 lb/ac P and 10-15 lb/ac K. If corn is planted on a field previously grazed, fertilizer recommendations are 75-80 lb/ac N, 0 lb/ac P and 10 lb/ac K.

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 soil moisture above 50% field capacity 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. Early weed control is essential

Grazing Management:

When grazing corn, pregnant beef cows receive an adequately diet and, with good management, gain body condition throughout December and January. First, the cows will 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. Controlled grazing through the use of electric fence system is essential to efficiently graze standing corn **Conventional herd wintering costs (drylotting) average \$2 per cow day.**

* Based on 80% utilization.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: CORN SILAGE

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$0.07	
Seed treatment			\$8.00	
Soil test			\$0.65	
Fertilizer:	N	270	lb	\$153.13
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	15	lb	\$6.70
Herbicide			\$6.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$7.35	
Equipment repair			\$5.50	
Custom work			\$0.00	
Irrigation power	18	inches	\$25.20	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.65	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating int	4.8	%	\$6.70	
Total Cash Costs			\$288.75	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$5.01	
Land			\$25.58	
Total Non Cash Costs			\$112.19	
Harvest Costs				
Custom Silage \$/ac			264	
Total Costs			\$665	
Returns				
Target yield t/ac			24	
Price \$/t *			\$60	
Gross Return			\$1,440	
Net Return			\$775	
Specialized Equipment			\$/ac/yr	
Planter			\$5.01	
TOTAL			\$5.01	

More Information:

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

Variety Selection:

To select a corn variety for silage, choose a variety that is high yielding and reaches dent stage before frost damage. High yielding grain corn varieties typically produce good silage yields. For corn heat unit map and variety selection information refer to the Crops Information / Corn section on the website www.irrigationsaskatchewan.com. The Alberta Corn Committee website provides variety trial data for Saskatchewan.

Seeding:

TKW	380.0	grams
Seeding Rate	1	plants/ac

Fertilization:

Spring banding of fertilizer prior to seeding is recommended. Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K. Apply 100-110 lb/ac N, 20-25 lb/ac P and 10-15 lb/ac K.

If field conditions or soil texture cause concern for a high nutrient loss, fertigation may be an option.

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 soil moisture above 50 % field capacity 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 at the pit. Price (adjusted to 65% moisture) of corn silage per tonne is based on the feed barley grain price times 11. Custom silage harvest - \$11/t for under 3.5 mile haul.

Rotations and Crop Protection:

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

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

* Value very dependent on location and market need.

ECONOMICS

CROP: CEREAL SILAGE

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$21.58	
Seed treatment			\$3.00	
Soil test			\$0.65	
Fertilizer:	N	190	lb	\$107.76
	P ₂ O ₅	40	lb	\$24.33
	K ₂ O	30	lb	\$13.39
Herbicide			\$22.40	
Insecticide			\$0.00	
Fungicide*			\$0.00	
Equipment fuel			\$7.14	
Equipment repair			\$5.50	
Custom work			\$0.00	
Irrigation power	25	inches	\$19.40	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$26.69	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$6.47	
Total Cash Costs			\$278.78	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Harvest Costs				
Custom Silage \$/ac			187	
Total Costs			\$573	
Returns				
Target yield t/ac			17	
Price \$/t *			\$50	
Gross Return			\$850	
Net Return			\$277	
Specialized Equipment			\$/ac/yr	
TOTAL			\$0.00	

More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: 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	320.0	plants/sq m.
TKW	41.0	grams
Seeding Rate	130.0	lb/ac

Fertilization:

Fertilizer rate based on 0-12" 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. Consider potassium and zinc status on eroded soils.

Crop Water Use and Irrigation:

Total seasonal moisture requirement: 390 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. Use a soil probe to check moisture status.† Allow the canopy to dry between irrigations to minimize disease pressure and lodging.

Harvest:

Cut cereals at soft dough stage. Moisture content 65 - 70%. Barley silage is commonly priced on a per ton basis at 65% moisture, using the formula of feed barley grain price per bushel times a factor of 10 Custom silage harvest - \$11/t for under 3.5 mile haul.

* Value very dependent on location and market need.

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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

* May require an application of fungicide to control leaf disease

ECONOMICS

CROP: SEEDLING ALFALFA
(NO COVER CROP)

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed (c/w inoculant)			\$37.50	
Seed treatment			\$0.00	
Soil test			\$0.65	
Fertilizer:	N	21 lb	\$11.91	
	P ₂ O ₅	100 lb	\$60.82	
	K ₂ O	40 lb	\$17.86	
Herbicide			\$3.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$16.07	
Equipment repair			\$5.00	
Custom work			\$0.00	
Irrigation power	6	inches	\$8.40	
Irrigation repair			\$11.28	
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	4.8	%	\$4.89	
Total Cash Costs			\$210.71	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$13.33	
Land			\$25.58	
Total Non Cash Costs			\$120.51	
Total Costs			\$331.22	
Returns				
Target yield t/ac			3.0	
Price \$/t			\$70	
Gross Return			\$210	
Net Return			-\$121	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.14	
Round Baler			\$6.59	
Bale Mover			\$2.59	
			\$0.00	
TOTAL			\$13.33	

More Information:

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

AGRONOMICS

Variety Selection:

Select a variety that exhibits rapid re-growth, good winter hardiness and disease resistance. Refer to the Crop Varieties for Irrigation publication by CSIDC for yield data on 50 different varieties.

Seeding:

Plant population	30 to 40	PLS/sq ft
Seed size	200,000	seeds/lb
Seeding Rate	10	lb/ac

Pure live seed (PLS) = Germination x Purity

Calculate seeding rate using formula:

$$\text{Seeding rate (lb/ac)} = \frac{\text{seeds/sq ft} \times \text{sq ft/acre} / \text{PLS}}{\text{seeds/lb}}$$

Recommended row spacing for irrigation is six inches

Fertilization:

Soil testing prior to planting is recommended. Fertilizer rate is based on 0-12" soil nutrients of 30 lb N/ac, 20 lb P/ac, >800 lb K/ac. Ensure purchased seed is inoculated. Use correct strain of Rhizobium. Apply 100 lb/ac actual P prior to establishment. On coarse textured soils, application of 40-45 lb/ac actual K is recommended.

Crop Water Use and Irrigation:

Irrigate seedling alfalfa to maintain soil moisture above 70% field capacity in top foot of soil. Frequent, light irrigation applications following germination are optimal. Once stand is well established, about six weeks after seeding, irrigate to maintain soil moisture above 50% field capacity in the top two feet. 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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: ESTABLISHED ALFALFA
2-Cut Harvest

ITEM	UNIT		\$/ac	My Farm \$/ac
Seed			\$0.00	
Seed treatment/inoc			\$0.00	
Soil test			\$0.65	
Fertilizer: N	11	lb	\$6.24	
P ₂ O ₅	50	lb	\$30.41	
K ₂ O	50	lb	\$22.32	
Herbicide			\$0.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$13.39	
Equipment repair			\$5.37	
Custom work			\$0.00	
Irrigation power	15	inches	\$21.00	
Irrigation repair			\$11.28	
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	4.8	%	\$3.89	
TOTAL CASH COSTS			\$167.51	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$13.33	
Land			\$25.58	
Total Non Cash Costs			\$120.51	
Total Costs			\$288.02	
Returns				
Target yield t/ac*			5.0	
Price \$/t			\$80	
Gross Return			\$400	
Net Return			\$112	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.14	
Round Baler			\$6.59	
Bale Mover			\$2.59	
TOTAL			\$13.33	

More Information:

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

AGRONOMICS

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

Fertilization:

Most of the crop's nitrogen needs are met by fixation, if properly inoculated. Phosphorus should be supplied annually. Fertilizer application is optimized with a disc bander or dribble band over broadcast application. Apply 50 lb/ac actual P annually. Increase this amount by two to three times if broadcast application is used. Potassium fertilizer can be broadcast supplied at a rate of 50-75 lb/ac actual K annually. Soil testing is recommended. Fertilizer rate is based on 30 lb N/ac, 20 lb P/ac, >800 lb K/ac.

Crop Water Use and Irrigation:

Total average seasonal moisture requirement: 680 mm
Peak moisture use (before cutting): 7.5 mm/day
Maintain soil moisture above 40% field capacity 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.

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. Alfalfa hay should have >18% protein.

Rotations and Crop Protection:

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

* Total yield per year

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: ESTABLISHED ALFALFA
3-Cut Harvest

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

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$0.00	
Seed treatment/inoc			\$0.00	
Soil test			\$0.65	
Fertilizer: N	11	lb	\$6.24	
P ₂ O ₅	50	lb	\$30.41	
K ₂ O	50	lb	\$22.32	
Herbicide			\$0.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$20.11	
Equipment repair			\$8.06	
Custom work			\$0.00	
Irrigation power	14	inches	\$19.60	
Irrigation repair			\$11.28	
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	4.8	%	\$4.20	
Total Cash Costs			\$181.04	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$22.20	
Land			\$25.58	
Total Non Cash Costs			\$129.38	
Total Cost			\$310.42	
Returns				
Target yield t/ac *			5.5	
Price \$/t			\$85	
Gross Return			\$468	
Net Return			\$157	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$6.90	
Round Baler			\$10.98	
Bale Mover			\$4.32	
TOTAL			\$22.20	

Fertilization:

Most of the crop's nitrogen needs are met by fixation, if properly inoculated. Phosphorus should be supplied annually. Apply fertilizer with disc bander or dribble band is optimal over broadcast application. Apply 50 lb actual P/ac annually. Increase this amount by two to three times if broadcast application is used. Potassium fertilizer can be broadcast supplied at a rate of 50-75 lb/ac actual annually. Soil testing is recommended. Fertilizer rate is based on 30 lb N/ac, 20 lb P/ac, >800 lb K/ac.

Crop Water Use and Irrigation:

Total average seasonal moisture requirement: 680 mm
 Peak moisture use (before cutting): 7.5 mm/day
 Maintain soil moisture above 40 % field capacity 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.

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. Alfalfa hay should have >18% protein.

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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: TIMOTHY

Double Compressed Market

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Fertilizer: N	165	lb	\$93.58	
P ₂ O ₅	40	lb	\$24.33	
K ₂ O	15	lb	\$6.70	
Soil test			\$0.65	
Herbicide			\$14.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$21.42	
Equipment repair			\$8.06	
Custom work			\$0.00	
Irrigation power	20	inches	\$28.00	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$25.23	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	3	hr/ac	\$45.00	
Other			\$6.00	
Farm overhead			\$9.20	
Operating interest	4.8	%	\$6.97	
Total Cash Costs			\$300.41	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$56.17	
Land			\$25.58	
Total Non Cash Costs			\$163.35	
Total Cost			\$463.76	
Return				
Target yield t/ac			6.0	
Price \$/t			125.00	
Gross Return			\$750	
Net Return			\$286	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.14	
Big square baler			\$30.05	
Bale Mover			\$2.59	
Swath inverter			\$2.00	
Storage shed			\$17.38	
TOTAL			\$56.17	

More Information:

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

AGRONOMICS

Variety Selection:

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

Seeding:

Plant population	30 to 40	PLS/sq ft
Seed size	1,232,000	seeds/lb
Seeding Rate	4	lb/ac
Seeding Cost	\$3.40	\$/ac

Seeding can occur in spring or fall. Weed control is critical and a pre-seed burn-off application should be performed. Seed into a firm seedbed, at cross angles to achieve 4 lb/ac, to a maximum seeding depth of a half inch. Six inch row spacing is optimal. Calculate seeding rate using formula described on page 22.

Fertilization:

A soil test is recommended. Fertilizer recommendations based on 30 lb/ac N, 20 lb/ac P and >800 lb/ac K at the 0-12" depth. Application of 50-100 lb/ac actual P prior to seeding is recommended. Apply 140-150 lb/ac actual N, 40-45 lb/ac actual P and 40 lb/ac actual K annually. Spilt nitrogen applications are recommended under two cut system.

Crop Water Use and Irrigation:

Total average seasonal moisture use: 590 mm

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

Maintain soil moisture above 50% field capacity 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. 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

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: ANNUAL RYEGRASS

Partial Budget				My Farm
ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$16.25	
Seed treatment			\$0.00	
Soil test			\$0.65	
Fertilizer: N	130	lb	\$73.73	
P ₂ O ₅	40	lb	\$24.33	
K ₂ O	15	lb	\$6.70	
Herbicide			\$6.60	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$21.42	
Equipment repair			\$8.06	
Custom work			\$0.00	
Irrigation power	16	inches	\$22.40	
Irrigation repair			\$11.28	
Irrigation service/water charge			\$24.07	
Crop insurance			\$0.00	
Hail insurance			\$0.00	
Hired labour	1	hr/ac	\$15.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating int	4.8	%	\$5.69	
Total Cash Costs			\$245.36	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$0.00	
Land			\$25.58	
Total Non Cash Costs			\$107.18	
Total Costs			\$352.55	
Return				
Returns dependent upon method of utilization.				
Specialized Equipment			\$/ac/yr	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
			\$0.00	
TOTAL			\$0.00	

More Information:

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

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

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:

Fertilizer rate based on 0-12" soil available nutrients of 30 lb/ac N, 20 lb/ac P, >800 lb/ac K. N and P rates similar to cereal crop production. Previously manured soils preferred, as mineralized nutrients efficiently used the grass. If removing hay or silage, apply 50 lb N each time. Max of 15lb/ac P₂O₅ with the seed in good soil moisture.

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			\$34.74	
Seed treatment/inoc			\$0.00	
Soil test			\$0.65	
Fertilizer: N	80	lb	\$45.54	
P ₂ O ₅	50	lb	\$30.41	
K ₂ O	15	lb	\$6.70	
Herbicide			\$3.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$18.74	
Equipment repair			\$6.18	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$11.28	
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	4.8	%	\$4.89	
Total Cash Costs			\$210.64	
Farm Equipment & Buildings			\$53.58	
Irrigation System			\$28.03	
Specialized Equipment			\$13.33	
Land			\$25.58	
Total Non Cash Costs			\$120.51	
Total Cost			\$331.14	
Return				
Target yield t/ac			3.0	
Price \$/t			\$50	
Gross Return			\$150	
Net Return			-\$181	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.14	
Round Baler			\$6.59	
Bale Mover			\$2.59	
TOTAL			\$13.33	

More Information:

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

AGRONOMICS

Variety Selection:

Species and variety selection for an irrigated pasture should take into account the time of the season when the forage is to be utilized. 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. Legumes can also be included with a grass. Consult a forage specialist for advice on forage selection and matching forage production to your seasonal forage requirements.

If a cereal cover crop is used 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	30 to 40	PLS/sq ft
Seed size		80,000	seeds/lb
Seeding Rate		10	lb/ac

Refer to seeding rate formula on page 21.

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:

If a cover crop is used remove 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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

AGRONOMICS

CROP: MEADOW BROME PASTURE
Established

My Farm

ITEM		UNIT	\$/ac	\$/ac
Fertilizer:	N	110	lb	\$45.10
	P ₂ O ₅	30	lb	\$18.24
	K ₂ O	15	lb	\$6.70
Soil test				\$0.65
Equipment fuel				\$1.79
Equipment repair				\$1.00
Custom work				\$0.00
Irrigation power	14	inches		\$19.60
Irrigation repair				\$11.28
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	4.8	%		\$3.91
Total Cash Costs	\$84.17	\$/hd		\$168.34
Farm Equipment & Buildings *				\$53.58
Irrigation System				\$28.03
Specialized Equipment				\$8.51
Land				\$25.58
Total Non Cash Costs				\$115.69
Total Cost	\$142.02	(\$/hd)		\$284.03
Stocking Rate (hd/ac)				2.0
Days of Grazing				115
Cash Cost \$/hd/day				\$0.59
Total Cost \$/hd/day				\$1.23
Average Daily Gain (lb.)		2		2.5
Total Cost per lb				
Specialized Equipment			\$/ac/yr	
Cross Fencing (1 mile)				\$1.16
Perimeter Fencing				\$4.27
Water Supply				\$3.08
TOTAL				\$8.51

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

More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: 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 it 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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: SEED POTATO

Norland Elite II

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$663.00	
Seed treatment/inoc			\$86.45	
Soil test			\$0.65	
Fertilizer: N	105	lb	\$59.55	
P ₂ O ₅	60	lb	\$36.49	
K ₂ O	30	lb	\$13.39	
Herbicide			\$62.17	
Insecticide			\$22.00	
Fungicide			\$144.98	
Equipment fuel			\$140.91	
Equipment repair			\$75.00	
Custom work			\$80.00	
Irrigation power *			\$0.00	
Irrigation repair *			\$0.00	
Irrigation service/water charge *			\$0.00	
Crop insurance **	14	tons/ac	\$180.91	
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	4.8	%	\$44.79	
Total Cash Costs			\$1,930.49	
Farm Equipment & Buildings			\$26.21	
Irrigation System *			\$0.00	
Specialized Equipment			\$310.62	
Land Rental Rate			\$235.00	
Total Non Cash Costs			\$571.84	
Total Costs			\$2,502.32	
Returns				
Target yield ton/ac			14	
Price \$/ton			\$510	
Gross Return			\$7,140	
Net Return			\$4,638	
Specialized Equipment			\$/ac/yr	
Potato Field Equipment			\$130.22	
Potato Handling Equipment			\$60.10	
Potato Storage Facility			\$120.30	
TOTAL			\$310.62	

* Provided by landowner.

More Information:

Call an Irrigation Agrolgist at (306) 867-5500 or check our website: 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. Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K.

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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

ECONOMICS

CROP: TABLE POTATO

Norland

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$360.00	
Seed treatment/inoc			\$59.85	
Soil test			\$0.65	
Fertilizer: N	135	lb	\$76.57	
P ₂ O ₅	60	lb	\$36.49	
K ₂ O	30	lb	\$13.39	
Herbicide			\$62.17	
Insecticide			\$22.00	
Fungicide			\$144.98	
Equipment fuel			\$144.83	
Equipment repair			\$75.00	
Custom work			\$80.00	
Irrigation power *			\$0.00	
Irrigation repair *			\$0.00	
Irrigation service/water charge *			\$0.00	
Crop insurance **	11	tons/ac	\$126.82	
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	4.8	%	\$35.81	
Total Cash Costs			\$1,543.76	
Farm Equipment & Buildings			\$26.21	
Irrigation System *			\$0.00	
Specialized Equipment			\$310.62	
Land Rental Rate			\$235.00	
Total Non Cash Costs			\$571.84	
Total Costs			\$2,115.59	
Returns				
Target yield ton/ac			16	
Price \$/ton			\$240	
Gross Return			\$3,840	
Net Return			\$1,724	
Specialized Equipment			\$/ac/yr	
Potato Field Equipment			\$130.22	
Potato Handling Equipment			\$60.10	
Potato Storage Facility			\$120.30	
TOTAL			\$310.62	

* Provided by landowner.

More Information:

Call an Irrigation Agrologist at (306) 867-5500 or check our website: 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. Fertilizer recommendations based on 0-12" soil nutrients of 30 lb/ac N, 20 lb/ac P and >800 lb/ac K.

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.

† Refer to the Saskatchewan Ministry of Agriculture Irrigation Scheduling Manual

Appendix A

CROP	Seed Cost	Herbicide	Fungicide	Custom Costs	Other Costs
Hard Wheat	\$0.23/lb	Thumper / Horizon	Dividend XL		
Durum	\$0.20/lb	Thumper / Horizon	Dividend XL / Folicur		
CPS Wheat	\$0.16/lb	Thumper / Horizon	Dividend XL		
Soft Wheat	\$0.16 /lb	Thumper / Horizon	Dividend XL / Folicur		
Malt Barley	\$0.18/lb	Achieve Liquid Gold	Dividend XL		
Feed Barley	\$0.17 /lb	Achieve Liquid Gold	Dividend XL		
Canola	\$9.00 lb *	Glyphosate (2 applications – Burn-off and In-crop)	Helix / Proline		
Brown/Oriental Mustard	\$1.95/lb	Edge / Centurion			
Yellow Mustard	\$2.21/lb	Select / Centurion			
Flax	\$0.38/lb	FlaxMax			
Pea	\$0.35/lb	Viper	Headline		
Fababean	\$0.20 /lb	Edge / Sencor; Reglone			
Red Lentil	\$0.39/lb	Edge / Odyssey DLX / Reglone	Headline		
Dry Bean	\$0.55/lb	Edge / Solo	Lance (2 applications)		
Grain Corn	\$74 /ac	Glyphosate (2 applications – Burn-off and In-crop)	Poncho	Grain drying	
Corn Grazing	\$74 /ac	Glyphosate (2 applications – Burn-off and In-crop)	Poncho		
Corn Silage	\$74 /ac	Glyphosate (2 applications – Burn-off and In-crop)	Poncho	Silage	
Barley Silage	\$0.10/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
Pasture	\$2.63/lb				
Timothy	\$1.70/lb	Glyphosate / 2,4D+Banvel			Twine, ground sheets
Ryegrass	\$1.25/lb	Glyphosate; MCPA		<i>variable</i>	<i>variable</i>
Seed Potato	\$510/ton	Eptam 8-E; Reglone	Bravo; Dithane; Quadris	8 aerial spray	Inspection
Table Potato	\$400/ton		Bravo; Diathane: Quadris	8 aerial spray	

* Seed price includes the Technology User Agreement for Round-Up Ready corn and canola. The chemicals used in Appendix A were chose for budget assumptions only and are not suggestions Pursuit, Odyssey, and FlaxMax are not recommended in potato rotation

For more information:

Irrigation in Saskatchewan website:
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/