

ECONOMICS

CROP: HARD WHEAT

Item	Unit		\$/ac	My Farm \$/ac
Seed			\$14.30	
Seed treatment			\$2.40	
Fertilizer:	N	110	lb	\$48.82
	P	40	lb	\$16.19
	K	10	lb	\$4.02
Herbicide			\$23.25	
Insecticide *			\$0.00	
Fungicide **			\$0.00	
Equipment fuel			\$12.24	
Equipment repair			\$5.37	
Custom work			\$0.00	
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	3.1	%	\$3.02	
Total Cash Costs			\$197.87	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
Total Non Cash Costs			\$68.36	
Total Costs			\$266.22	
Returns	Low	Average	High	
Yield bu/ac	50	60	75	
Price \$/bu		\$4.85		
Gross Return	\$243	\$291	\$364	
Net Return	-\$24	\$25	\$98	
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:

5602HR combines high yield with reduced fusarium head blight damage. CDC Abound, McKenzie, Superb, Unity and Snowstar are all very 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

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				\$18.00	
Seed treatment				\$2.40	
Fertilizer:	N	110	lb	\$48.82	
	P	40	lb	\$16.19	
	K	10	lb	\$4.02	
Herbicide				\$23.25	
Insecticide *				\$0.00	
Fungicide				\$10.00	
Equipment fuel				\$12.24	
Equipment repair				\$5.37	
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	3.1	%		\$3.38	
Total Cash Costs				\$221.76	
Farm Equipment & Buildings				\$23.45	
Irrigation System				\$25.22	
Specialized Equipment				\$0.00	
Land				\$19.68	
Total Non Cash Costs				\$68.36	
Total Costs				\$290.12	
Returns	Low	Average	High		
Yield bu/ac	60	75	90		
Price \$/bu (#2 11.5%)		\$4.63			
Gross Return	\$278	\$347	\$417		
Net Return	-\$12	\$57	\$127		
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:

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	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:

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.

ECONOMICS

CROP: CPS WHEAT

ITEM	UNIT	My Farm	
		\$/ac	\$/ac
Seed			\$12.43
Seed treatment			\$2.40
Fertilizer:	N 110 lb		\$48.82
	P 40 lb		\$16.19
	K 10 lb		\$4.02
Herbicide			\$23.25
Insecticide *			\$0.00
Fungicide **			\$0.00
Equipment fuel			\$12.24
Equipment repair			\$5.37
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	3.1 %		\$3.10
Total Cash Costs			\$202.97
Farm Equipment & Buildings			\$23.45
Irrigation System			\$25.22
Specialized Equipment			\$0.00
Land			\$19.68
Total Non Cash Costs			\$68.36
Total Costs			\$271.32
Returns	Low	Average	High
Yield bu/ac	60	70	90
Price \$/bu		\$3.92	
Gross	\$235	\$274	\$353
Net Return	-\$36	\$3	\$81
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:

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	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:

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

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Seed			\$12.10	
Seed treatment			\$2.40	
Fertilizer:	N 110	lb	\$48.82	
	P 40	lb	\$16.19	
	K 10	lb	\$4.02	
Herbicide			\$23.25	
Insecticide *			\$0.00	
Fungicide			\$10.00	
Equipment fuel			\$12.24	
Equipment repair			\$5.37	
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	3.1	%	\$3.26	
Total Cash Costs			\$213.65	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
Total Non Cash Costs			\$68.36	
Total Costs			\$282.00	
Returns	Low	Average	High	
Yield bu/ac	75	85	100	
Price \$/bu		\$3.10		
Gross	\$233	\$264	\$310	
Net Return	-\$50	-\$19	\$28	
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. 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	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:

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.

ECONOMICS

CROP: MALT BARLEY

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$12.10	
Seed treatment			\$2.40	
Fertilizer:	N	85	lb	\$37.73
	P	20	lb	\$8.10
	K	20	lb	\$8.05
Herbicide			\$16.75	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.24	
Equipment repair			\$5.37	
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	\$6.26	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$5.50	
Farm overhead			\$9.20	
Operating interest	3.1	%	\$2.73	
Total Cash Costs				\$179.00
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
Total Non Cash Costs				\$68.36
Total Costs				\$247.36
Returns	Low	Average	High	
Yield bu/ac	65	80	95	
Price \$/bu		\$3.48		
Gross	\$226	\$278	\$331	
Net Return	-\$21	\$31	\$83	
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 Metcalfe 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. Two-row varieties are more likely 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:

Tough 14.9%; 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.

¹ Canadian Malting Barley Technical Centre

ECONOMICS

CROP: FEED BARLEY

ITEM	#	UNIT	My Farm	
			\$/ac	\$/ac
Seed			\$14.30	
Seed treatment			\$2.40	
Fertilizer:	N	120	lb	\$53.26
	P	20	lb	\$8.10
	K	20	lb	\$8.05
Herbicide			\$16.75	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.24	
Equipment repair			\$5.37	
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	\$6.26	
Hail insurance			\$7.80	
Hired labour	0	hr/ac	\$0.00	
Other			\$5.50	
Farm overhead			\$9.20	
Operating interest	3.1	%	\$3.01	
Total Cash Costs			\$197.01	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
Total Non Cash Costs			\$68.36	
Total Costs			\$265.37	
Returns	Low	Average	High	
Yield bu/ac	75	85	100	
Price \$/bu		\$2.96		
Gross	\$222	\$252	\$296	
Net Return	-\$43	-\$14	\$31	
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:

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 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:

Tough 14.9%; 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.

ECONOMICS

CROP: CANOLA

Hybrid, Herbicide tolerant

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$36.25	
Seed treatment			\$9.12	
Fertilizer:	N	150	lb	\$66.58
	P	40	lb	\$16.19
	K	15	lb	\$6.04
Herbicide			\$7.40	
Insecticide *			\$0.00	
Fungicide			\$24.00	
Equipment fuel			\$12.96	
Equipment repair			\$5.37	
Custom work			\$13.00	
Irrigation power	11	inches	\$15.40	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.61	
Crop insurance †	37	bu/ac	\$10.47	
Hail insurance	7.2%		\$13.65	
Hired labour	0	hr/ac	\$0.00	
Pod Sealant			\$18.00	
Farm overhead			\$9.20	
Operating int	3.1	%	\$4.59	
Total Cash Costs			\$300.98	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
Total Non Cash Costs			\$68.52	
Total Costs			\$369.50	
Returns	Low	Average	High	
Yield bu/ac	40	50	65	
Price \$/bu		\$8.00		
Gross	\$320	\$400	\$520	
Net Return	-\$50	\$30	\$150	
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:

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		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 subject 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 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). 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.

* An insecticide application may be required for Flea beetle,

ECONOMICS

CROP: BROWN/ORIENTAL MUSTARD

ITEM	UNIT		\$/ac	My Farm \$/ac
Seed			\$0.00	
Seed treatment			\$0.00	
Fertilizer:	N	120	lb	\$53.26
	P	20	lb	\$8.10
	K	15	lb	\$6.04
Herbicide			\$6.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.96	
Equipment repair			\$5.37	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.32	
Crop insurance *	24	bu	\$12.49	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	3.1	%	\$2.72	
Total Cash Costs			\$178.20	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
Total Non Cash Costs			\$68.52	
Total Costs			\$246.73	
Returns	Low	Average	High	
Yield bu/ac	35	40	45	
Price \$/bu		\$10.00		
Gross	\$350	\$400	\$450	
Net Return	\$103	\$153	\$203	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
			\$0.00	
			\$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. 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:

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			\$20.70	
Seed treatment			\$0.00	
Fertilizer:	N	100	lb	\$44.39
	P	20	lb	\$8.10
	K	15	lb	\$6.04
Herbicide			\$6.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.96	
Equipment repair			\$5.37	
Custom work			\$0.00	
Irrigation power	10	inches	\$14.00	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$22.32	
Crop insurance *	18	bu	\$13.51	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	3.1	%	\$2.92	
Total Cash Costs			\$191.25	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
Total Non Cash Costs			\$68.52	
Total Costs			\$259.77	
Returns	Low	Average	High	
Yield bu/ac	25	30	35	
Price \$/bu		\$14.00		
Gross	\$350	\$420	\$490	
Net Return	\$90	\$160	\$230	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
			\$0.00	
			\$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:

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:

Tough 9.6%; damp 12.5%

Rotations and Crop Protection:

Four 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

ITEM	UNIT	My Farm	
		\$/ac	\$/ac
Seed		\$11.20	
Seed treatment		\$2.50	
Fertilizer:	N 100 lb	\$44.39	
	P 40 lb	\$16.19	
	K 15 lb	\$6.04	
Herbicide		\$16.50	
Insecticide		\$0.00	
Fungicide		\$0.00	
Equipment fuel		\$13.68	
Equipment repair		\$7.16	
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	\$7.14	
Hail insurance		\$7.80	
Hired labour	0 hr/ac	\$0.00	
Other		\$0.00	
Farm overhead		\$9.20	
Operating interest	3.1 %	\$2.87	
Total Cash Costs		\$187.75	
Farm Equipment & Buildings		\$23.45	
Irrigation System		\$25.22	
Specialized Equipment		\$0.00	
Land		\$19.68	
Total Non Cash Costs		\$68.36	
Total Costs		\$256.10	
Returns	Low	Average	High
Yield bu/ac	30	40	45
Price \$/bu		\$8.76	
Gross	\$263	\$350	\$394
Net Return	\$7	\$94	\$138
Specialized Equipment		\$/ac/yr	
TOTAL		\$0.00	

More Information:

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

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:

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				My Farm
	UNIT			\$/ac
Seed				\$19.80
Seed treatment / inoculant				\$5.04
Fertilizer:	N	8	lb	\$3.55
	P	15	lb	\$6.07
	K	15	lb	\$6.04
Herbicide				\$25.00
Insecticide				\$0.00
Fungicide				\$15.00
Equipment fuel				\$13.68
Equipment repair				\$7.38
Custom work				\$5.00
Irrigation power	7	inches		\$9.80
Irrigation repair				\$10.15
Irrigation service/water charge				\$21.44
Crop insurance*	33	bu/ac		\$4.07
Hail insurance	7.2%			\$15.60
Hired labour	0	hr/ac		\$0.00
Other				\$0.00
Farm overhead				\$9.20
Operating int	3.1	%		\$2.74
Total Cash Costs				\$179.56
Farm Equipment & Buildings				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$8.55
Land				\$19.68
Total Non Cash Costs				\$76.90
Total Costs				\$256.47
Returns	Low	Average	High	
Yield bu/ac	45	55	65	
Price \$/bu (#1 yellow)		\$4.76		
Gross	\$214	\$262	\$309	
Net Return	-\$42	\$5	\$53	
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:

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

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$36.00	
Seed treatment / inoculant			\$3.26	
Fertilizer:	N 11	lb	\$4.88	
	P 50	lb	\$20.24	
	K 15	lb	\$6.04	
Herbicide			\$37.90	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$13.68	
Equipment repair			\$8.96	
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	3.1	%	\$3.43	
Total Cash Costs			\$225.02	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.17	
Land			\$19.68	
Total Non Cash Costs			\$68.52	
Total Costs			\$293.54	
Returns	Low	Average	High	
Yield lb/ac	2250	2500	3250	
Price \$/lb		\$0.11		
Gross	\$248	\$275	\$358	
Net Return	-\$46	-\$19	\$64	
Specialized Equipment			\$/ac/yr	
Sideknife			\$0.17	
TOTAL			\$0.17	

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:

CDC Fatima and Flourent 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:

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			\$18.00	
Seed treatment / inoculant			\$1.40	
Fertilizer:	N	8	lb	\$3.55
	P	15	lb	\$6.07
	K	15	lb	\$6.04
Herbicide			\$41.60	
Insecticide			\$0.00	
Fungicide			\$15.00	
Equipment fuel			\$13.68	
Equipment repair			\$8.96	
Custom work			\$5.00	
Irrigation power	5	inches	\$7.00	
Irrigation repair			\$10.15	
Irrigation service/water charge			\$20.86	
Crop insurance *	1199	lb/ac	\$11.54	
Hail insurance	7.2%		\$15.60	
Hired labour	0	hr/ac	\$0.00	
Other			\$0.00	
Farm overhead			\$9.20	
Operating interest	3.1	%	\$3.00	
Total Cash Costs			\$196.65	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$8.55	
Land			\$19.68	
Total Non Cash Costs			\$76.90	
Total Costs			\$273.55	
Returns	Low	Average	High	
Yield lb/ac	1400	1800	2200	
Price \$/lb		\$0.22		
Gross	\$308	\$396	\$484	
Net Return	\$34	\$122	\$210	
Specialized Equipment			\$/ac/yr	
Flex Header			\$5.01	
Land Roller			\$3.54	
TOTAL			\$8.55	

More Information:

Call an Irrigation Agrolgist 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: 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. 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:

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	\$/ac	My Farm \$/ac
Seed			\$41.25	
Seed treatment / inoculant			\$10.00	
Fertilizer:	N	45 lb	\$19.97	
	P	40 lb	\$16.19	
	K	15 lb	\$6.04	
Herbicide			\$27.25	
Insecticide			\$0.00	
Fungicide			\$37.50	
Equipment fuel			\$16.42	
Equipment repair			\$8.96	
Custom work			\$10.00	
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			\$10.00	
Farm overhead			\$9.20	
Operating interest	3.1	%	\$4.38	
Total Cash Costs			\$287.22	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$17.86	
Land			\$19.68	
Total Non Cash Costs			\$86.22	
Total Costs			\$373.43	
Returns	Low	Average	High	
Yield lb/ac	2000	2500	3000	
Price \$/lb		\$0.27		
Gross	\$540	\$675	\$810	
Net Return	\$167	\$302	\$437	
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:

Winchester, AC Redbond, Resolute have improved plant structure and days to maturity. 'White Mountain' type pinto have beans receive a quality premium. AC 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	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. Many bean producers apply zinc at 5lb/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 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.

ECONOMICS

AGRONOMICS

CROP: GRAIN CORN

My Farm

ITEM	UNIT		\$/ac	\$/ac
Seed			\$71.68	
Seed treatment			\$8.00	
Fertilizer:	N	120	lb	\$53.26
	P	30	lb	\$12.14
	K	15	lb	\$6.04
Herbicide			\$7.40	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.24	
Equipment repair			\$5.37	
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	3.1	%	\$3.63	
Total Cash Costs			\$237.97	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$8.35	
Land			\$19.68	
Total Non Cash Costs			\$76.70	
Drying Costs	Low	Average	High	
Custom Drying \$/ac	9	13	16	
Total Costs	\$323	\$327	\$331	
Returns	Low	Average	High	
Yield bu/ac	70	100	130	
Price \$/bu		\$3.10		
Gross	\$217	\$310	\$403	
Net Return	-\$114	-\$21	\$72	
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. Be sure to know the amount of corn heat units (CHU) accumulated for your area. Refer to the CHU map produced by the Ministry of Agriculture if the value is unknown. Choose a hybrid variety that requires 200 CHU less than expected. This should ensure that the crop will reach maturity before first killing frost nine years out of ten if planted by mid-May. Refer to the Alberta Corn Committee website for variety trial data from Saskatchewan.

Seeding:

TKW	380.0	grams
Seeding Rate	32,000	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.

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	100 lb		\$44.39
	P	20 lb		\$8.10
	K	15 lb		\$6.04
Herbicide				\$7.40
Insecticide				\$0.00
Fungicide				\$0.00
Equipment fuel				\$6.00
Equipment repair				\$4.00
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
Other				\$0.00
Farm overhead				\$9.20
Operating interest	3.1	%		\$3.31
Total Cash Costs				\$217.12
Farm Equipment & Buildings				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$13.52
Land				\$19.68
Total Non Cash Costs				\$81.87
Total Costs				\$298.99
		Low	Average	High
DM in lbs *		5760	7680	9600
Cow days/ac		288	384	480
Cost \$/ac			\$299	
Cost/Hd/day		\$1.04	\$0.78	\$0.62
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. Select a variety that requires 100 to 200 more CHU than for grain production for a specific location. If the CHU rating for a location is not known, refer to the CHU map produced by the Ministry of Agriculture. Refer to the Alberta Corn Committee website for variety trial data from Saskatchewan.

Seeding:

TKW	380.0	grams
Seeding Rate	32,000	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 through 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:

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.

ECONOMICS

AGRONOMICS

CROP: CORN SILAGE

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$71.68	
Seed treatment			\$8.00	
Fertilizer:	N	110	lb	\$48.82
	P	25	lb	\$10.12
	K	15	lb	\$6.04
Herbicide			\$7.40	
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	3.1	%	\$3.36	
Total Cash Costs			\$220.25	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$5.01	
Land			\$19.68	
Total Non Cash Costs			\$73.36	
Harvest Costs	Low	Average	High	
Custom Silage \$/ac	132	176	220	
Total Costs	\$426	\$470	\$514	
Returns	Low	Average	High	
Yield t/ac	12	16	20	
Price \$/t *		\$33		
Gross Return	\$396	\$528	\$660	
Net Return	-\$30	\$58	\$146	
Specialized Equipment			\$/ac/yr	
Planter			\$5.01	
TOTAL			\$5.01	

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 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. Select a variety that requires 100 to 200 more CHU than for grain production for a specific location. If the CHU rating for a location is not known, refer to the CHU map produced by the Ministry of Agriculture. Refer to the Alberta Corn Committee website for variety trial data from Saskatchewan.

Seeding:

TKW	380.0	grams
Seeding Rate	32,000	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, 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 through 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) of corn silage per tonne is based on the fee barley grain 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 867-5500 to get current information on silage.

Rotations and Crop Protection:

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

ECONOMICS

CROP: CEREAL SILAGE

ITEM	#	UNIT	\$/ac	My Farm \$/ac
Seed			\$14.30	
Seed treatment			\$3.00	
Fertilizer:	N	120	lb	\$53.26
	P	30	lb	\$12.14
	K	30	lb	\$12.07
Herbicide			\$24.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$4.90	
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	3.1	%	\$2.91	
Total Cash Costs			\$190.78	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
Total Non Cash Costs			\$68.36	
Harvest Costs	Low	Average	High	
Custom Silage \$/ac	110	132	154	
Total Costs	\$369	\$391	\$413	
Returns	Low	Average	High	
Yield t/ac	10	12	14	
Price \$/t *		\$30		
Gross Return	\$300	\$360	\$420	
Net Return	-\$69	-\$31	\$7	
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 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.

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)**

ITEM	#	UNIT	\$ /ac	My Farm \$ /ac
Seed (c/w inoculant)			\$37.50	
Seed treatment			\$0.00	
Fertilizer: N	21	lb	\$9.32	
	P	100	lb \$40.48	
	K	40	lb \$16.10	
Herbicide			\$4.50	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$11.02	
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	3.1	%	\$2.73	
Total Cash Costs			\$178.54	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$13.33	
Land			\$19.68	
Total Non Cash Costs			\$81.68	
Total Costs			\$260.23	
Returns				
	Low	Average	High	
Yield t/ac	1.5	2.5	3.0	
Price \$/t		\$70		
Gross Return	\$105	\$175	\$210	
Net Return	-\$155	-\$85	-\$50	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$4.14	
Round Baler			\$6.59	
Bale Mover			\$2.59	
			\$0.00	
			\$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:

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

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.

ECONOMICS

CROP: ESTABLISHED ALFALFA 2-Cut Harvest

ITEM	UNIT		\$/ac	My Farm \$/ac
Seed			\$0.00	
Seed treatment/inoc			\$0.00	
Fertilizer: N	11	lb	\$4.88	
P	50	lb	\$20.24	
K	50	lb	\$20.12	
Herbicide			\$0.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$9.18	
Equipment repair			\$5.37	
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	3.1	%	\$2.23	
TOTAL CASH COSTS			\$146.15	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$13.33	
Land			\$19.68	
Total Non Cash Costs			\$81.68	
Total Costs			\$227.84	
Returns	Low	Average	High	
Yield t/ac*	3.0	4.0	5.0	
Price \$/t		\$80		
Gross Return	\$240	\$320	\$400	
Net Return	\$12	\$92	\$172	
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

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	\$4.88	
	P	50 lb	\$20.24	
	K	50 lb	\$20.12	
Herbicide			\$0.00	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$13.77	
Equipment repair			\$8.06	
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	3.1	%	\$2.40	
Total Cash Costs			\$157.41	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$22.20	
Land			\$19.68	
Total Non Cash Costs			\$90.55	
Total Cost			\$247.96	
Returns	Low	Average	High	
Yield t/ac *	3.5	4.5	5.5	
Price \$/t		\$85		
Gross Return	\$298	\$383	\$468	
Net Return	\$50	\$135	\$220	
Specialized Equipment			\$/ac/yr	
Mower/condition			\$6.90	
Round Baler			\$10.98	
Bale Mover			\$4.32	
TOTAL			\$22.20	

Establishment year losses (p. 21) over 4 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. Apply fertilizer with disc bander or dribble band is optimal 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 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 Agriologist at (306) 867-5500 or check our website: www.irrigationsaskatchewan.com.

ECONOMICS

AGRONOMICS

CROP: TIMOTHY

Double Compressed Market

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Fertilizer:	N	150	lb	\$66.58
	P	40	lb	\$16.19
	K	50	lb	\$20.12
Herbicide				\$14.00
Insecticide				\$0.00
Fungicide				\$0.00
Equipment fuel				\$14.69
Equipment repair				\$8.06
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	3.1	%		\$3.95
Total Cash Costs				\$258.71
Farm Equipment & Buildings				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$56.17
Land				\$19.68
Total Non Cash Costs				\$124.52
Total Cost				\$383.24
Return	Low	Average	High	
Yield t/ac	2.5	3.5	4.5	
Price \$/t		\$125		
Gross Return	\$313	\$438	\$563	
Net Return	-\$71	\$54	\$179	
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 Agrolgist at (306) 867-5500 or check our website: 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	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.

ECONOMICS

CROP: ANNUAL RYEGRASS

Partial Budget				My Farm
ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$16.25	
Seed treatment			\$0.00	
Fertilizer:	N	130	lb	\$57.70
	P	40	lb	\$16.19
	K	15	lb	\$6.04
Herbicide			\$6.60	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$14.69	
Equipment repair			\$8.06	
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	3.1	%	\$3.09	
Total Cash Costs			\$202.67	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$0.00	
Land			\$19.68	
Total Non Cash Costs			\$68.36	
Total Costs			\$271.02	
Return				
Returns dependent upon method of utilization.				
Specialized Equipment			\$/ac/yr	
			\$0.00	
			\$0.00	
			\$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.

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			\$31.05	
Seed treatment/inoc			\$0.00	
Fertilizer: N	80	lb	\$35.64	
P	50	lb	\$20.24	
K	15	lb	\$6.04	
Herbicide			\$4.50	
Insecticide			\$0.00	
Fungicide			\$0.00	
Equipment fuel			\$12.85	
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	3.1	%	\$2.72	
Total Cash Costs			\$177.88	
Farm Equipment & Buildings			\$23.45	
Irrigation System			\$25.22	
Specialized Equipment			\$13.33	
Land			\$19.68	
Total Non Cash Costs			\$81.68	
Total Cost			\$259.57	
Return	LO	AV	HI	
Yield t/ac	2.0	2.5	3.0	
Price \$/t		\$35		
Gross Return	\$70	\$88	\$105	
Net Return	-\$190	-\$172	-\$155	
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 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	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:

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	\$12.14
	K	15	lb	\$6.04
Equipment fuel				\$1.22
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	3.1	%		\$2.41
Total Cash Costs	\$78.87	\$/hd		\$157.75
Farm Equipment & Buildings *				\$23.45
Irrigation System				\$25.22
Specialized Equipment				\$8.51
Land				\$19.68
Total Non Cash Costs				\$76.86
Total Cost	\$117.30	(\$/hd)		\$234.61
Stocking Rate (hd/ac)				2.0
Days of Grazing				115
Cash Cost \$/hd/day				\$0.55
Total Cost \$/hd/day				\$1.02
Average Daily Gain (lb.)	2			2.5
Total Cost per lb of Gain (\$/lb)				\$0.51
				\$0.41
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 Agrolgist 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 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			\$644.67	
Seed treatment/inoc			\$86.45	
Fertilizer: N	150	lb	\$66.58	
P	90	lb	\$36.43	
K	90	lb	\$36.22	
Herbicide			\$62.17	
Insecticide			\$22.00	
Fungicide			\$90.10	
Equipment fuel			\$116.75	
Equipment repair			\$75.00	
Custom work			\$56.00	
Irrigation power *			\$0.00	
Irrigation repair *			\$0.00	
Irrigation service/water charge *			\$0.00	
Crop insurance **	14	tons/ac	\$179.19	
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	3.1	%	\$27.77	
Total Cash Costs			\$1,819.54	
Farm Equipment & Buildings			\$12.94	
Irrigation System *			\$0.00	
Specialized Equipment			\$310.62	
Land Rental Rate			\$235.00	
Total Non Cash Costs			\$558.57	
Total Costs			\$2,378.11	
Returns	Low	Average	High	
Yield ton/ac	10	12	14	
Price \$/ton		\$495		
Gross Return	\$4,950	\$5,940	\$6,930	
Net Return	\$2,572	\$3,562	\$4,552	
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	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.

ECONOMICS

AGRONOMICS

CROP: TABLE POTATO

Norland

My Farm

ITEM	#	UNIT	\$/ac	\$/ac
Seed			\$347.13	
Seed treatment/inoc			\$59.85	
Fertilizer: N	150	lb	\$66.58	
P	90	lb	\$36.43	
K	90	lb	\$36.22	
Herbicide			\$62.17	
Insecticide			\$22.00	
Fungicide			\$55.40	
Equipment fuel			\$120.00	
Equipment repair			\$75.00	
Custom work			\$48.00	
Irrigation power *			\$0.00	
Irrigation repair *			\$0.00	
Irrigation service/water charge *			\$0.00	
Crop insurance **	11	tons/ac	\$115.08	
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	3.1	%	\$20.91	
Total Cash Costs			\$1,369.98	
Farm Equipment & Buildings			\$12.94	
Irrigation System *			\$0.00	
Specialized Equipment			\$310.62	
Land Rental Rate			\$235.00	
Total Non Cash Costs			\$558.57	
Total Costs			\$1,928.54	
Returns				
	Low	Average	High	
Yield ton/ac	12	14	16	
Price \$/ton			\$240	
Gross Return	\$2,880	\$3,360	\$3,840	
Net Return	\$951	\$1,431	\$1,911	
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:

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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:

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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.

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