

Crop Enterprise Budget

Alfalfa Establishment, Powell Area

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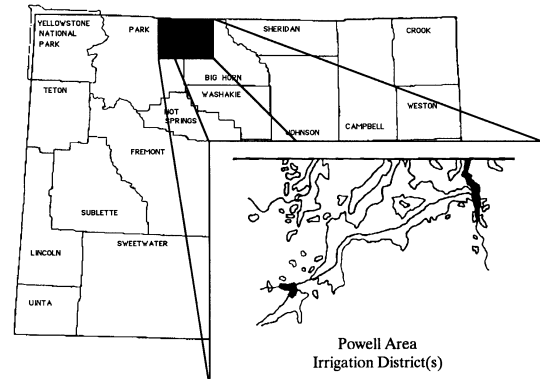
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The enterprise budget presented in this report estimates typical costs and returns for alfalfa establishment production in the Powell area of Wyoming. It should only be used as a guide; it is not representative of any particular farm. The major assumptions used in this budget are presented below.

LAND

The budget is based on a 600 acre farm, with 10 acres of alfalfa established with a barley nurse crop each year. Other enterprises included on this farm are: malting barley, 230 acres; alfalfa hay, 30 acres; dry beans, 90 acres; and sugar beets, 240 acres. The farm operator owns 200 acres and leases 400 acres. Owned land is valued at \$900 per acre and leased land is rented on a crop share basis. A one-third share of gross revenue is paid to the land owner. In turn, the land owner pays for one-third of the fertilizer and crop insurance for the crop. The land owner is also responsible for the costs associated with land, water and chemical for weed control on ditches and roads.

LABOR

Labor on this farm is provided by the operator and two full-time employees. All labor, including operator labor, is valued at \$5.50 per hour. However, operator labor is a non-cash cost. Some part-time labor may be used on the farm for labor intensive operations like harvest.

CAPITAL

The operator provides 75% of the long term capital and 20% of the operating capital for this enterprise. Twenty-five percent of the long term capital is borrowed at an interest rate of 9.58%

APR (Annual Percentage Rate). Eighty percent of the operating capital is borrowed at an interest rate of 9.92% APR. The interest rates used here are for short term planning. Real interest rates (interest rates adjusted for expected inflation) should be used for accurate long-term planning.

ESTABLISHMENT COSTS

This enterprise budget estimates the cost of establishing alfalfa hay with a nurse crop of malting barley. The cost of establishing alfalfa, is calculated by comparing the alfalfa establishment budget to the malting barley budget. This cost is then included in the budget for alfalfa hay production. It is entered as a perennial crop charge in the fixed cost section of the alfalfa hay budget. Costs of establishing the alfalfa stand are broken down in Table 1.

MACHINERY, EQUIPMENT, AND BUILDINGS

A complete list of the machinery, equipment, and buildings used in this enterprise and the associated values are provided in Table 2. All resources are assumed to be half depreciated. Estimated operating and ownership costs are given in Table 3. Table 3 lists only the resources used in this enterprise. Other resources used on the farm are not included. However, the reader should note that the resources listed in Tables 2 and 3 may also be used in other enterprises on the farm.

OPERATIONS

Operations related to production of the malting barley nurse crop and alfalfa establishment are listed in chronological order in the enterprise budget. Ground preparation begins in early spring

to ensure the crop will be ready for irrigation in late April. The barley is typically harvested in late July-early August.

This budget differs from straight malting barley in a couple of significant ways. The first is that the crop must be irrigated two additional times. The first irrigation comes before and the second after the barley harvest. This provides the added water required by the alfalfa stand. The second difference is that the barley straw is baled and removed from the field. For straight malting barley, the straw is left in the field after harvest.

variable costs are estimated at \$294.09 per acre, with total fixed costs at \$163.04 per acre. The total of all costs for alfalfa establishment is estimated at \$457.13 per acre, leaving a net projected return of (\$148.33) per acre. The net projected returns for the share-lease arrangement are (\$59.97) per acre for the landowner and (\$88.36) per acre for the tenant. As shown in Table 1, the data in this budget are used to calculate the cost of establishing the alfalfa stand. These costs are spread over a three year stand life for 30 acres of growing alfalfa.

SUMMARY

Gross income for the alfalfa establishment enterprise is estimated at \$308.80 per acre. Total

Alfalfa Establishment

Economic Costs and Returns
Alfalfa Establishment - Powell Area
10 Acre Enterprise

RETURNS SECTION -----				Owner- Operator 100%	Land- owner 33%	Tenant 67%
GROSS INCOME Description	Quantity	Unit	\$/Unit	Total	Total	Total
=====	=====	=====	=====	=====	=====	=====
BARLEY STRAW	1.25	ton	35.00	\$43.75	\$14.58	\$29.17
MALTING BARLEY	45.00	cwt	5.89	265.05	88.34	176.71
=====	=====	=====	=====	=====	=====	=====
Total GROSS Income				\$308.80	\$102.92	\$205.88

VARIABLE COSTS SECTION -----										
		----- M a t e r i a l s -----					Materials			
VARIABLE COST Description	Dollars per Acre			# Units	Unit	\$/unit	Total Cost	Owner-	Land-	Tenant
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
ANNUAL										
METAL SHOP								2.14	----	2.14
MACHINE SHED								0.28	----	0.28
TRAILER HOUSE								3.17	----	3.17
GRAIN BIN #1								0.13	----	0.13
GRAIN BIN #2								0.13	----	0.13
FENCES								0.03	----	0.03
1/2 TON PICKUP	1.20	0.78						1.98	----	1.98
1/2 TON - 4 X 4 PICKUP	1.20	0.82						2.02	----	2.02
3/4 TON PICKUP	1.20	0.80						2.00	----	2.00
MINI PICKUP	1.20	0.52						1.72	----	1.72
LOADER WORK	0.20	0.23						0.43	----	0.43
GENERAL OVERHEAD								11.96	----	11.96
OPERATOR MANAGEMENT								23.91	----	23.91
-----								-----	-----	-----
Total ANNUAL								\$49.90	\$0.00	\$49.90
PREPLANT-SPRING										
SPREAD FERTILIZER Operation	0.59	0.32	11-52-0	0.057	ton	291.00	38.90	39.81	12.97	26.84
			34-0-0	0.113	ton	197.50				
FIELD CULTIVATE Operation	1.01	1.59						2.60	----	2.60
ROLLER HARROW Operation	0.76	1.62						2.38	----	2.38
-----								-----	-----	-----
Total PREPLANT-SPRING								\$44.79	\$12.97	\$31.82
PLANT										
CROP INSURANCE BARLEY								20.22	6.74	13.48
HAUL BARLEY SEED Operation	0.11	0.10						0.21	----	0.21
PLANT BARLEY/ALF Operation	1.77	2.04	BARLEY SEED	0.950	cwt	12.00	38.40	42.21	----	42.21
			ALFALFA SEED	12.000	lb	2.25				
-----								-----	-----	-----
Total PLANT								\$62.64	\$6.74	\$55.90
GROW BARLEY										
CORRUGATE Operation	1.21	1.61						2.82	----	2.82
OPEN DITCHES Operation	0.13	0.12						0.25	----	0.25
PULL ENDS Operation	0.18	0.11						0.29	----	0.29
IRRIGATE BARLEY Operation	6.06	0.00	CANVAS DAMS	1.000	acre	0.50	4.38	10.44	3.88	6.56
			CONCRETE DITCH			3.02				
			DIRT DITCH			0.35				
			GATED PIPE			0.51				
SPRAY BARLEY/ALF Operation	0.00	0.00	2,4-DB ESTER	0.375	gal	34.50	16.69	16.69	----	16.69
			CUSTOM SPRAY	1.000	acre	3.75				
SPRAY DITCHES Operation	0.08	0.02	CURTAIL	0.005	gal	35.38	0.18	0.28	0.18	0.10
IRRIGATE BARLEY Operation	2.76	0.00	CONCRETE DITCH			3.02	3.88	6.64	3.88	2.76
			DIRT DITCH			0.35				
			GATED PIPE			0.51				
IRRIGATE BARLEY Operation	2.76	0.00	CONCRETE DITCH			3.02	3.88	6.64	3.88	2.76
			DIRT DITCH			0.35				
GATED PIPE		0.51								
SPRAY DITCHES Operation	0.08	0.02	CURTAIL	0.005	gal	35.38	0.18	0.28	0.18	0.10
IRRIGATE BARLEY Operation	2.76	0.00	CONCRETE DITCH			3.02	3.88	6.64	3.88	2.76
			DIRT DITCH			0.35				
			GATED PIPE			0.51				

Alfalfa Establishment

VARIABLE COSTS SECTION -----										
			----- M a t e r i a l s -----				Materials			
VARIABLE COST	Description	Dollars per Acre		# Units	Unit		Total Cost	Owner-	Land-	Tenant
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
IRRIGATE BARLEY	Operation	2.76	0.00	CONCRETE DITCH		3.02	3.88	6.64	3.88	2.76
				DIRT DITCH		0.35				
				GATED PIPE		0.51				
Total GROW BARLEY								\$57.61	\$19.76	\$37.85
GROW ALFALFA										
IRRIGATE ALFALFA	Operation	2.76	0.00	CONCRETE DITCH		4.20	5.41	8.17	5.41	2.76
				DIRT DITCH		0.49				
				GATED PIPE		0.72				
Total GROW ALFALFA								\$8.17	\$5.41	\$2.76
HARVEST										
CLOSE DITCHES	Operation	0.13	0.12					0.25	----	0.25
SWATH	Operation	0.88	1.63					2.51	----	2.51
THRESH W/ PICKUP	Operation	2.42	11.03					13.45	----	13.45
HAUL BARLEY:										
2-TON TRUCK	#1	1.40	1.32					2.72	----	2.72
2-TON TRUCK	#2	1.40	1.35					2.75	----	2.75
TANDEM TRUCK	#1	1.40	1.33					2.73	----	2.73
TANDEM TRUCK	#2	1.40	1.33					2.73	----	2.73
Total HARVEST								\$27.14	\$0.00	\$27.14
POST-HARVEST										
AUGER BARLEY	Operation	0.58	0.32					0.90	----	0.90
BALE	Operation	1.18	1.31	BALING TWINE	0.210 bale	24.00	5.04	7.53	----	7.53
STACK BALES	CUSTOM							19.50	----	19.50
Total POST-HARVEST								\$27.93	\$0.00	\$27.93
GROW ALFALFA										
IRRIGATE ALFALFA	Operation	2.76	0.00	CONCRETE DITCH		4.20	5.41	8.17	5.41	2.76
				DIRT DITCH		0.49				
				GATED PIPE		0.72				
Total GROW ALFALFA								\$8.17	\$5.41	\$2.76
Operating Interest								7.74	----	7.74
Total VARIABLE COST								\$294.09	\$50.29	\$243.80
GROSS INCOME minus VARIABLE COST								\$14.71	\$52.63	(\$37.92)
FIXED COSTS SECTION -----										
FIXED COST	Description	Unit		Owner-	Land-	Tenant				
=====	=====	=====	=====	=====	=====	=====				
Machinery and Equipment:										
	Taxes	Acre		1.88	----	1.88				
	Insurance	Acre		3.86	----	3.86				
	Long Term Interest	Acre		24.61	----	24.61				
	Depreciation	Acre		20.10	----	20.10				
Buildings and Improvments:										
	Taxes	Acre		0.97	0.97	----				
	Insurance	Acre		1.26	1.26	----				
	Long Term Interest	Acre		11.86	11.86	----				
	Depreciation	Acre		4.85	4.85	----				
Irrigation:										
	Taxes	Acre		0.57	0.57	----				
	Insurance	Acre		1.14	1.14	----				
	Long Term Interest	Acre		10.63	10.63	----				
	Depreciation	Acre		6.52	6.52	----				
Land:										
	Taxes	Acre		5.50	5.50	----				
	Long Term Interest	Acre		69.30	69.30	----				
Total FIXED Cost				\$163.04	\$112.60	\$50.44				
Total of ALL Cost				\$457.13	\$162.89	\$294.24				
NET PROJECTED RETURNS				(\$148.33)	(\$59.97)	(\$88.36)				

Alfalfa Establishment

TABLE 1. Alfalfa Establishment Costs Per Acre of Growing Alfalfa

	Owner- Operator	Land- Owner	Tenant
Alfalfa seed	\$ 27.00	\$ -----	\$ 27.00
2,4-DB (over 2,4-D used on malting barley)	10.49	5.25	5.24
Irrigate alfalfa #1	8.17	5.41	2.76
Bale straw	7.53	-----	7.53
Custom stack straw	19.50	-----	19.50
Irrigate alfalfa #2	8.17	5.41	2.76
Overhead and management (over malting barley alone)	11.89	-----	11.89
Operating interest (over malting barley alone)	1.41	-----	1.41
Machinery and equipment (over malting barley alone)	6.73	-----	6.73
Irrigation (over malting barley alone)	5.98	5.98	-----
Total Establishment Costs per acre of alfalfa establishment	\$ 106.87	\$ 22.05	\$ 84.82

Assuming a 3 year stand life gives:

\$106.87 ÷ 3 year stand life = \$35.62 depreciation cost

DEPRECIATION COST Per Acre of Growing Alfalfa	\$ 35.62	\$ 7.35	\$ 28.27
LONG-TERM INTEREST COST Per Acre of Growing Alfalfa	6.29	6.29	-----
TOTAL ESTABLISHMENT COST Per Acre of Growing Alfalfa	\$ 41.91	\$ 13.64	\$ 28.27

TABLE 2. Machinery, Equipment, and Building Value and Use Assumptions

Resource Name	1990 List Price	List Price in Year Acquired	Current Market Value	Salvage Value	Useful Life Years	Useful Life Hr or Mi	Remaining Life Hr or Mi	Total Defined Annual Use
=====	=====	=====	=====	=====	=====	=====	=====	=====
125 HP TRACTOR #1	\$62,822	\$44,958	\$22,774	\$11,240	12	4,488 hr	2,244 hr	374 hr
125 HP TRACTOR #2	62,822	44,958	22,774	11,240	12	5,364 hr	2,682 hr	447 hr
250 CC ATV	3,140	1,989	905	588	10	140 hr	70 hr	14 hr
80 HP TRACTOR	35,433	27,436	13,469	5,806	14	4,508 hr	2,254 hr	322 hr
COMBINE 150 BU	95,012	62,515	29,104	9,477	18	2,016 hr	1,008 hr	112 hr
SWATHER 15 FT	33,690	30,087	11,135	8,887	10	440 hr	220 hr	44 hr
ATV BOOM SPRAYER	2,300	1,932	879	674	8	112 hr	56 hr	14 hr
CORRUGATOR 9-ROW	2,520	1,918	873	567	10	510 hr	255 hr	51 hr
DITCHER V-TYPE 3-POINT	3,550	2,758	1,195	690	12	216 hr	108 hr	18 hr
END PULLER 3-ROW	1,175	628	250	157	12	276 hr	138 hr	23 hr
FIELD CULTIVATOR 18 FT	5,358	4,090	2,425	1,023	12	576 hr	288 hr	48 hr
FRONT LOADER 2-TON	7,323	5,333	2,950	1,575	10	200 hr	100 hr	20 hr
GRAIN DRILL 12 FT	8,516	8,377	2,995	2,474	10	600 hr	300 hr	60 hr
PTO GRAIN AUGER 40' X 6"	1,542	1,754	798	439	12	240 hr	120 hr	20 hr
PTO TWINE BALER	14,474	11,742	4,811	3,468	10	270 hr	135 hr	27 hr
REAR BLADE 8 FT	1,090	721	525	180	12	216 hr	108 hr	18 hr
ROLLER HARROW	15,132	14,415	6,350	5,944	6	1,062 hr	531 hr	177 hr
1/2 TON PICKUP 2WD	12,950	7,647	3,650	1,912	12	60,000 mi	30,000 mi	5,000 mi
1/2 TON PICKUP 4WD	17,400	10,151	8,725	2,538	12	60,000 mi	30,000 mi	5,000 mi
2-TON TRUCK #1	38,500	25,111	13,650	3,807	18	83,700 mi	41,850 mi	4,650 mi
2-TON TRUCK #2	38,500	25,111	13,650	3,807	18	81,000 mi	40,500 mi	4,500 mi
3/4 TON PICKUP 2WD	14,950	8,917	4,250	2,229	12	60,000 mi	30,000 mi	5,000 mi
MINI PICKUP	9,070	6,196	2,463	1,549	12	60,000 mi	30,000 mi	5,000 mi
TANDEM TRUCK #1	73,570	49,954	21,500	7,573	18	80,424 mi	40,212 mi	4,468 mi
TANDEM TRUCK #2	73,570	49,954	21,500	7,573	18	80,424 mi	40,212 mi	4,468 mi

Alfalfa Establishment

TABLE 3. Machinery, Equipment, and Building Cost Calculations

		RESOURCE COST PER UNIT OF USE								ENTERPRISE			
		-----Variable-----				-----Fixed-----				-----			
Machine/Vehicle	Unit	Fuel and Lube	Operation Labor & Inputs	Repair and Maint.	Hourly Lease	Deprec. and Interest	Taxes and Insurance	TOTAL COST	Resource Use per Acre	-----	Costs per Acre	-----	TOTAL
										Variable	Fixed		
125 HP TRACTOR	#1	\$/Hr	\$5.56	\$0.00	\$3.05	\$0.00	\$6.93	\$0.91	\$16.45	0.2000	\$1.72	\$1.57	\$3.29
125 HP TRACTOR	#2	\$/Hr	5.56	0.00	3.33	0.00	5.80	0.76	15.45	0.5040	4.48	3.31	7.79
250 CC ATV		\$/Hr	1.10	0.00	0.02	0.00	7.37	0.97	9.46	0.0220	0.02	0.18	0.20
80 HP TRACTOR		\$/Hr	3.56	0.00	1.85	0.00	4.57	0.63	10.61	0.4410	2.39	2.29	4.68
COMBINE 150 BU		\$/Hr	6.94	0.00	20.63	0.00	26.58	3.90	58.05	0.4000	11.03	12.19	23.22
SWATHER 15 FT		\$/Hr	6.41	0.00	6.64	0.00	30.71	3.80	47.56	0.1250	1.63	4.31	5.94
ATV BOOM SPRAYER		\$/Hr	0.00	0.00	0.70	0.00	8.45	0.94	10.09	0.0220	0.02	0.21	0.23
CORRUGATOR 9-ROW		\$/Hr	0.00	0.00	0.24	0.00	2.19	0.26	2.69	0.2000	0.05	0.49	0.54
DITCHER V-TYPE	3-POINT	\$/Hr	0.00	0.00	0.30	0.00	7.96	1.00	9.26	0.0180	0.01	0.16	0.17
END PULLER	3-ROW	\$/Hr	0.00	0.00	0.04	0.00	1.29	0.16	1.49	0.0250	0.00	0.04	0.04
FIELD CULTIVATOR	18 FT	\$/Hr	0.00	0.00	1.08	0.00	6.21	0.76	8.05	0.1430	0.15	1.00	1.15
FRONT LOADER	2-TON	\$/Hr	0.00	0.00	0.59	0.00	19.27	2.21	22.07	0.0330	0.02	0.71	0.73
GRAIN DRILL	12 FT	\$/Hr	0.00	0.00	3.11	0.00	6.04	0.75	9.90	0.2500	0.78	1.70	2.48
PTO GRAIN AUGER	40' X 6"	\$/Hr	0.00	0.00	0.09	0.00	4.81	0.60	5.50	0.0820	0.01	0.44	0.45
PTO TWINE BALER		\$/Hr	0.00	0.00	1.70	0.00	22.61	2.67	26.98	0.1670	0.28	4.22	4.50
REAR BLADE	8 FT	\$/Hr	0.00	0.00	0.08	0.00	3.63	0.44	4.15	0.0180	0.00	0.07	0.07
ROLLER HARROW		\$/Hr	0.00	0.00	2.60	0.00	4.91	0.54	8.05	0.1250	0.33	0.68	1.01
1/2 TON PICKUP	2WD	\$/Mi	0.09	0.00	0.05	0.00	0.15	0.03	0.32	5.6000	0.78	1.01	1.79
1/2 TON PICKUP	4WD	\$/Mi	0.09	0.00	0.05	0.00	0.40	0.05	0.59	5.6000	0.78	2.52	3.30
2-TON TRUCK	#1	\$/Mi	0.22	0.00	0.19	0.00	0.54	0.06	1.01	3.5200	1.44	2.11	3.55
2-TON TRUCK	#2	\$/Mi	0.22	0.00	0.19	0.00	0.55	0.07	1.03	3.2700	1.34	2.03	3.37
3/4 TON PICKUP	2WD	\$/Mi	0.09	0.00	0.06	0.00	0.17	0.04	0.36	5.6000	0.84	1.18	2.02
MINI PICKUP		\$/Mi	0.06	0.00	0.03	0.00	0.10	0.02	0.21	5.6000	0.50	0.67	1.17
TANDEM TRUCK	#1	\$/Mi	0.16	0.00	0.25	0.00	0.86	0.09	1.36	3.2700	1.34	3.11	4.45
TANDEM TRUCK	#2	\$/Mi	0.16	0.00	0.25	0.00	0.86	0.09	1.36	3.2700	1.34	3.11	4.45

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