

# Crop Enterprise Budget

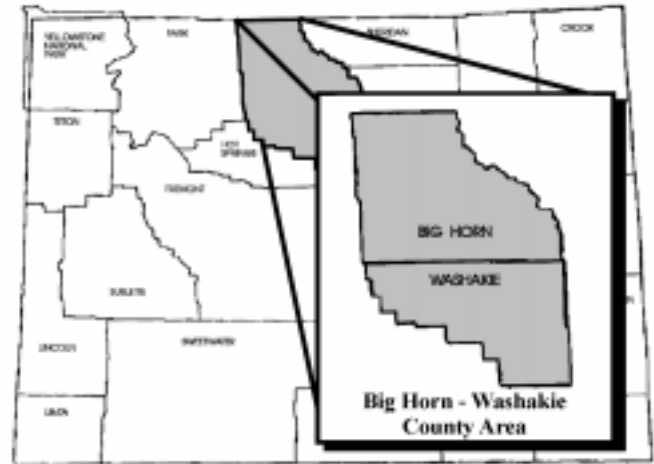
## Alfalfa Hay, Baled

### Big Horn-Washakie County Area

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This enterprise budget presents estimated typical costs and returns for malting barley in the Big Horn and Washakie County area of Wyoming. Data presented are not taken from an actual farm situation. A panel of Big Horn and Washakie County producers assisted in outlining the “representative” farm situation described in the budget. Thus, the budget provides a guide to determine costs and returns for specific operations. Production practices presented in the budget are not necessarily “best” management practices. The major assumptions used in this budget are presented below.

#### Land

This budget is based on an 880-acre farm that produces 265 acres of malting barley grown annually. Other enterprises included on this farm are: alfalfa establishment, 35 acres; alfalfa hay, 105 acres; sugar beets, 250 acres; corn for grain, 90 acres; and corn for silage, 90 acres. The remaining 80 acres include roadways, fence lines, and farmsteads. Owned land is valued at \$1,000 per acre irrigated and wasteland is valued at \$300 per acre.

Leased land is rented on a crop-share basis. A one-third share of gross revenue is paid to the landowner. In return, the landowner pays for one-third of the fertilizer and crop insurance for the crop and one-half the chemical cost for spring weed control. The landowner is also responsible for ownership costs associated with the land, buildings, and irrigation systems, as well as all irrigation water costs.

#### Labor

Labor is provided by the operator and one 12-month employee and one 8-month employee. All labor, including operator labor, is valued at \$7.33 per hour plus 7.65 percent to cover social security and federal withholding taxes. Labor charges for the owner/operator represent an opportunity cost for the time spent in this enterprise. Some part-time labor may be used on the farm for labor-intensive operations such as harvest.

#### Capital

The operator provides 70 percent of the long-term capital and 50 percent of the operating capital for this enterprise. Thirty percent of the long-term capital is borrowed at an interest rate of 8.0 percent Annual Percentage Rate (APR). Fifty percent of the operating capital is borrowed at an interest rate of 9.0 percent 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.

#### Machinery, Equipment, and Buildings

A complete list of machinery, equipment, and buildings used in this enterprise and their associated values are provided in Table 1. All resources are assumed to be half depreciated. Estimated operating and ownership costs are given in Table 3. Tables 1 and 3 list 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 1 and 3 also might be used in other enterprises on the farm.

Each irrigated acre on the farm is assumed to be irrigated by a fraction of the total irrigation system. Water provided by each irrigation system is broken down as follows: 25 percent concrete ditch, 37.5 percent dirt ditch, and 37.5 percent gated pipe (plastic). All irrigation water is delivered to the distribution network via a delivery system. This method was employed because crops normally will be rotated over all farmed acres eventually. Table 2 presents an estimated cost per acre-inch of providing irrigation water via each irrigation system.

### Operations

Operations related to alfalfa hay production are listed in chronological order in the enterprise budget. The crop is fertilized in early March. Irrigation is usually started in mid-March with a total of five irrigations per growing season. A total of 63 acre-inches of water are delivered per acre of growing alfalfa.

Typically, three cuttings of hay are harvested in early June, late July, and early September. The hay is cut, raked, and baled into 1,000-pound round bales, which are then hauled and stacked within a mile of the field. The first cutting yields 2 tons per acre, while the second two yield 1.5 tons per acre.

### Enterprise Budget

Economic costs and returns for alfalfa hay are summarized by operation in the enterprise budget. Costs are broken down by stage of production. General overhead and operator management have been calculated at 5 percent and 10 percent of all cash costs, respectively.

Costs and returns for the crop-share lease arrangement also are summarized in the budget. Costs paid and received by the tenant are listed in the tenant column. Items paid and received by the landowner are included in the landowner column. The far right column has been provided to calculate changes from this base budget for your operation.

### Summary

Gross income for the alfalfa hay enterprise is estimated at \$360.55 per acre. Total variable costs are estimated at \$280.58 per acre, with total fixed costs at \$181.68 per acre. The total of all costs for alfalfa hay is estimated at \$462.26 per acre, leaving a net projected return of (\$101.71) per acre. The net projected returns for the lease arrangement are (\$25.77) per acre for the landowner and (\$75.94) per acre for the tenant.

Alfalfa Hay, Baled

Enterprise Budget  
Economic Costs and Returns per Acre  
Alfalfa Hay, Baled - Big Horn-Washakie County Area  
105 Acre Enterprise

RETURNS SECTION -----							
GROSS INCOME Description	Quantity	Unit	\$/Unit	--- Crop-Share ---			Your Return
				Owner-Operator 100% Total	Land-owner 50% Total	Tenant 50% Total	
ALFALFA HAY	5.00	TON	72.11	\$360.55	\$180.28	\$180.27	
Total GROSS Income				\$360.55	\$180.28	\$180.27	

VARIABLE COSTS SECTION -----										
VARIABLE COST Description	Dollars per Acre		----- M a t e r i a l s -----				Materials Total Cost Per Acre	--- Crop-Share ---		
	LABOR	MACHINERY	Description	# Units Per Acre	Unit Type	\$/unit		Operator	Land-owner	Tenant
**ANNUAL**										
LABOR HOUSE - 8 MONTH EMPLOYEE								3.28	----	3.28
LABOR HOUSE - FULL TIME EMPLOYEE								3.28	----	3.28
MACHINE SHED - 20 X 40								0.42	----	0.42
METAL SHOP - 40 X 80								1.26	----	1.26
4 WHEELER - 2WD	3.10	14.47						17.57	----	17.57
MINI PICKUP	2.58	1.54						4.12	----	4.12
1/2 TON PICKUP - 4WD	14.94	2.48						17.42	----	17.42
3/4 TON PICKUP - 4WD	33.36	4.38						37.74	----	37.74
GENERAL OVERHEAD								10.26	----	10.26
OPERATOR MANAGEMENT								20.21	----	20.21
Total ANNUAL								\$115.56	\$0.00	\$115.56
**GROW**										
CUSTOM FERTILIZE Operation	0.00	0.00	11-52-0	0.125	TON	300.00	41.11	41.11	20.56	20.55
			CUSTOM FERTILIZE	1.000	ACRE	3.61				
PULL DITCHES Operation	0.17	0.23						0.40	----	0.40
PULL ENDS Operation	0.05	0.02						0.07	----	0.07
LAY PIPE Operation	0.80	0.19						0.99	----	0.99
DELIVERY SYSTEM	0.36	0.00	Purchased Water				2.12	2.48	2.12	0.36
CONCRETE DITCH	0.15	0.00						0.15	----	0.15
GATED PIPE	0.29	0.00						0.29	----	0.29
DIRT DITCH	0.24	0.00						0.24	----	0.24
PICKUP PIPE Operation	0.80	0.19						0.99	----	0.99
Total GROW								\$46.72	\$22.68	\$24.04
**1ST CUTTING**										
SWATH Operation	1.74	1.71						3.45	1.73	1.72
RAKE Operation	1.93	0.90						2.83	1.42	1.41
BALE Operation	2.46	3.73	BALING TWINE	0.100	BOX	22.50	2.25	8.44	4.22	4.22
HAUL/STACK BALES Operation	4.34	6.91						11.25	5.63	5.62
Total 1ST CUTTING								\$25.97	\$13.00	\$12.97
**GROW**										
SPRAY WEEDS Operation	0.00	0.00	2,4D	0.008	GAL	12.52	0.47	0.47	0.24	0.23
			ROUNDUP	0.002	GAL	52.23				
			MALATHION	0.008	GAL	28.15				
			SPREADER	0.002	GAL	19.45				
			LAY PIPE							
DELIVERY SYSTEM	0.36	0.00	Purchased Water				2.12	2.48	2.12	0.36
CONCRETE DITCH	0.15	0.00						0.15	----	0.15
GATED PIPE	0.29	0.00						0.29	----	0.29
DIRT DITCH	0.24	0.00						0.24	----	0.24
CUSTOM SPRAY Operation	0.00	0.00	LORSBAN	0.250	GAL	50.08	16.52	16.52	8.26	8.26
			CUSTOM SPRAY	1.000	ACRE	4.00				

## Alfalfa Hay, Baled

VARIABLE COSTS SECTION											
		Dollars per Acre		M a t e r i a l s			Materials	Crop-Share			Your
VARIABLE COST	Description	LABOR	MACHINERY	Description	# Units	Unit	Total Cost	Owner-	Land-	Tenant	Cost
					Per Acre	Type	Per Acre	Operator	owner		
DELIVERY SYSTEM		0.36	0.00	Purchased Water			2.12	2.48	2.12	0.36	
CONCRETE DITCH		0.15	0.00					0.15	----	0.15	
GATED PIPE		0.29	0.00					0.29	----	0.29	
DIRT DITCH		0.24	0.00					0.24	----	0.24	
PICKUP PIPE	Operation	0.80	0.19					0.99	----	0.99	
Total GROW								\$24.30	\$12.74	\$11.56	
<b>**2ND CUTTING**</b>											
SWATH	Operation	1.74	1.71					3.45	1.73	1.72	
RAKE	Operation	1.93	0.90					2.83	1.42	1.41	
BALE	Operation	1.84	2.80	BALING TWINE	0.075	BOX	22.50	1.69	6.33	3.17	3.16
HAUL/STACK BALES	Operation	4.34	6.91					11.25	5.63	5.62	
Total 2ND CUTTING								\$23.86	\$11.95	\$11.91	
<b>**GROW**</b>											
LAY PIPE	Operation	0.80	0.19					0.99	----	0.99	
DELIVERY SYSTEM		0.36	0.00	Purchased Water			2.12	2.48	2.12	0.36	
CONCRETE DITCH		0.15	0.00					0.15	----	0.15	
GATED PIPE		0.29	0.00					0.29	----	0.29	
DIRT DITCH		0.24	0.00					0.24	----	0.24	
DELIVERY SYSTEM		0.36	0.00	Purchased Water			2.12	2.48	2.12	0.36	
CONCRETE DITCH		0.15	0.00					0.15	----	0.15	
GATED PIPE		0.29	0.00					0.29	----	0.29	
DIRT DITCH		0.24	0.00					0.24	----	0.24	
PICKUP PIPE	Operation	0.80	0.19					0.99	----	0.99	
Total GROW								\$8.30	\$4.24	\$4.06	
<b>**3RD CUTTING**</b>											
SWATH	Operation	1.74	1.71					3.45	1.73	1.72	
RAKE	Operation	1.93	0.90					2.83	1.42	1.41	
BALE	Operation	1.84	2.80	BALING TWINE	0.075	BOX	22.50	1.69	6.33	3.17	3.16
HAUL/STACK BALES	Operation	4.34	6.91					11.25	5.63	5.62	
Total 3RD CUTTING								\$23.86	\$11.95	\$11.91	
<b>**GROW**</b>											
LAY PIPE	Operation	0.80	0.19					0.99	----	0.99	
DELIVERY SYSTEM		0.36	0.00	Purchased Water			2.12	2.48	2.12	0.36	
CONCRETE DITCH		0.15	0.00					0.15	----	0.15	
GATED PIPE		0.29	0.00					0.29	----	0.29	
DIRT DITCH		0.24	0.00					0.24	----	0.24	
PICKUP PIPE	Operation	0.80	0.00					0.80	----	0.80	
CLOSE DITCHES	Operation	0.17	0.21					0.38	----	0.38	
Total GROW								\$5.33	\$2.12	\$3.21	
Operating Interest							6.68	6.68	----	6.68	
Total VARIABLE COST								\$280.58	\$78.68	\$201.90	

FIXED COSTS SECTION						
		Unit	Owner-	Crop-Share		Your
FIXED COST	Description		Operator	Land-	Tenant	Cost
				owner		
<b>Machinery and Equipment:</b>						
Taxes		Acre	2.68	----	2.68	
Insurance		Acre	3.66	----	3.66	
Long Term Interest		Acre	23.87	----	23.87	
Depreciation		Acre	24.10	----	24.10	
<b>Buildings and Improvements:</b>						
Taxes		Acre	1.32	1.32	----	
Insurance		Acre	0.77	0.77	----	
Long Term Interest		Acre	13.60	13.60	----	
Depreciation		Acre	10.52	10.52	----	

## Alfalfa Hay, Baled

FIXED COSTS SECTION		--- Crop-Share ---			
FIXED COST Description	Unit	Owner-Operator	Land-owner	Tenant	Your Cost
Irrigation:					
Taxes	Acre	0.60	0.60	----	
Insurance	Acre	0.50	0.50	----	
Long Term Interest	Acre	8.33	8.33	----	
Depreciation	Acre	9.15	9.15	----	
Land:					
Taxes	Acre	7.76	7.76	----	
Long Term Interest	Acre	74.47	74.47	----	
Alfalfa Stand:					
Long Term Interest	Acre	0.02	0.02	----	
Depreciation	Acre	0.33	0.33	----	
Total FIXED Cost		\$181.68	\$127.37	\$54.31	
Total of ALL Cost		\$462.26	\$206.05	\$256.21	
NET PROJECTED RETURNS		(\$101.71)	(\$25.77)	(\$75.94)	

TABLE 1. Machinery, Equipment, and Building Value and Use Assumptions

Resource Name	Current List Price	Current Market Value	Salvage Value	Total Defined Annual Use	Useful Life	Remaining Life
100HP TRACTOR 2WD	\$41,730	\$23,542	\$5,354	285 Hours	5,700 Hours	2,850 Hours
125HP TRACTOR MFD	\$50,582	\$28,536	\$6,490	475 Hours	9,500 Hours	4,750 Hours
200HP TRACTOR MFD	\$77,681	\$43,824	\$9,967	380 Hours	7,600 Hours	3,800 Hours
4 WHEELER 2WD	\$5,900	\$3,094	\$287	500 Hours	10,000 Hours	5,000 Hours
60HP TRACTOR 2WD	\$20,349	\$11,480	\$2,611	246 Hours	4,920 Hours	2,460 Hours
15FT SWATHER 5.0 A/HR	\$39,361	\$20,775	\$2,188	81 Hours	1,620 Hours	810 Hours
DITCHER, 3 POINTV-BLADE	\$2,134	\$1,123	\$111	26 Hours	520 Hours	260 Hours
END PULLER 3 ROW	\$1,001	\$527	\$52	18 Hours	360 Hours	180 Hours
FRONT END LOADER 2 TON	\$6,885	\$3,622	\$359	414 Hours	8,280 Hours	4,140 Hours
PIPE TRAILER	\$1,631	\$858	\$85	158 Hours	3,160 Hours	1,580 Hours
PTO TWINE BALER ROUND	\$13,217	\$6,930	\$643	107 Hours	2,140 Hours	1,070 Hours
SIDE RAKE 8 FT	\$2,801	\$1,473	\$146	70 Hours	1,400 Hours	700 Hours
SPRAYER, 3 POINT 28 FT	\$2,812	\$1,532	\$252	10 Hours	150 Hours	75 Hours
TERRACE BLADE 8 FT	\$1,171	\$616	\$61	29 Hours	580 Hours	290 Hours
1/2 TON PICKUP 4WD	\$15,882	\$8,754	\$1,626	8,000 Mile	120,000 Mile	60,000 Mile
2 TON TRUCK	\$13,967	\$7,194	\$422	2,067 Mile	51,675 Mile	25,838 Mile
3/4 TON PICKUP 4WD	\$15,385	\$8,480	\$1,575	15,000 Mile	150,000 Mile	75,000 Mile
MINI PICKUP	\$8,482	\$4,675	\$869	8,000 Mile	120,000 Mile	60,000 Mile
CONCRETE DITCH	\$37,736	\$19,177	\$619	9,971 AcIn	299,130 AcIn	149,565 AcIn
DELIVERY SYSTEM	\$77,588	\$39,430	\$1,272	39,958 AcIn	1,198,740 AcIn	599,370 AcIn
DIRT DITCH	\$20,419	\$10,377	\$335	14,952 AcIn	448,560 AcIn	224,280 AcIn
GATED PIPE	\$10,481	\$5,777	\$1,073	14,952 AcIn	299,040 AcIn	149,520 AcIn
LABOR HOUSE #1		\$22,881	\$2,288		30 Years	15 Years
LABOR HOUSE #2		\$38,136	\$3,814		30 Years	15 Years
MACHINE SHED 20 X 40		\$3,148	\$315		30 Years	15 Years
METAL SHOP 40 X 80		\$61,017	\$6,102		30 Years	15 Years

Alfalfa Hay, Baled

TABLE 2. Irrigation System Costs per Acre-Inch Delivered

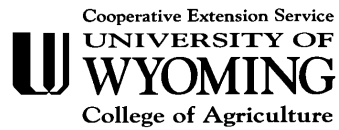
	Concrete <u>Ditch</u> *	Dirt <u>Ditch*</u>	Gated <u>Pipe*</u>
Variable Costs			
Repair and Maintenance (Off-Farm) .....	\$0.0128	\$0.0253	\$0.0165
Owner Operation Labor .....	0.0107	0.0107	0.0252
Purchased Water .....	0.0500	0.0751	0.0751
Fixed Costs			
Taxes .....	0.0039	0.0032	0.0023
Interest on Investment.....	0.0541	0.0442	0.0326
Depreciation.....	0.0628	0.0547	0.0262
<u>Insurance .....</u>	<u>0.0032</u>	<u>0.0027</u>	<u>0.0019</u>
Total Cost per Acre-Inch of Irrigation Water Delivered .....	\$0.1975	\$0.2159	\$0.1798

\* Each distribution system is assumed to receive irrigation water from a central delivery system. This delivery system (buried pipeline, concrete ditch, moss catchers, and tail ditch) has been allocated to each of the distribution systems according to its share of the total irrigation water applied.

Alfalfa Hay, Baled

TABLE 3. Machinery, Equipment, and Building Cost Calculations

Machine/Vehicle	Unit	RESOURCE COST PER UNIT OF USE							ENTERPRISE				
		-----Variable-----				-----Fixed-----			Resource Use per Acre	-----Costs per Acre-----			
		Fuel and Lube	Operation Labor & Inputs	Repair and Maint.	Hourly Lease	Deprec. and Interest	Taxes and Insurance	TOTAL COST		Variable	Fixed	TOTAL	
100HP TRACTOR	2WD	\$/Hr	\$5.63	\$0.00	\$2.50	\$0.00	\$7.25	\$0.80	\$16.18	0.7697	\$6.26	\$6.20	\$12.46
125HP TRACTOR	MFD	\$/Hr	7.04	0.00	5.05	0.00	5.27	0.58	17.94	1.5000	18.14	8.78	26.92
200HP TRACTOR	MFD	\$/Hr	11.27	0.00	6.20	0.00	10.12	1.12	28.71	0.0400	0.70	0.45	1.15
4 WHEELER	2WD	\$/Hr	24.14	0.00	5.17	0.00	0.85	0.07	30.23	0.6000	17.59	0.55	18.14
60HP TRACTOR	2WD	\$/Hr	3.38	0.00	1.05	0.00	4.09	0.45	8.97	1.0729	4.75	4.87	9.62
15FT SWATHER	5.0 A/HR	\$/Hr	4.56	0.00	4.02	0.00	22.81	2.49	33.88	0.6000	5.15	15.18	20.33
DITCHER, 3 POINT	V-BLADE	\$/Hr	0.00	0.00	0.53	0.00	3.84	0.42	4.79	0.0200	0.01	0.09	0.10
END PULLER	3 ROW	\$/Hr	0.00	0.00	0.08	0.00	2.61	0.28	2.97	0.0063	0.00	0.02	0.02
FRONT END LOADER	2 TON	\$/Hr	0.00	0.00	3.99	0.00	0.78	0.09	4.86	1.5000	5.99	1.31	7.30
PIPE TRAILER		\$/Hr	0.00	0.00	1.01	0.00	0.47	0.05	1.53	0.4000	0.40	0.21	0.61
PTO TWINE BALER	ROUND	\$/Hr	0.00	0.00	6.01	0.00	5.77	0.63	12.41	0.7693	4.62	4.92	9.54
SIDE RAKE	8 FT	\$/Hr	0.00	0.00	1.32	0.00	1.87	0.20	3.39	0.6666	0.88	1.38	2.26
SPRAYER, 3 POINT	28 FT	\$/Hr	0.00	0.00	0.70	0.00	15.67	1.49	17.86	0.0004	0.00	0.01	0.01
TERRACE BLADE	8 FT	\$/Hr	0.00	0.00	0.31	0.00	1.89	0.21	2.41	0.0200	0.01	0.04	0.05
1/2 TON PICKUP	4WD	\$/Mi	0.08	0.00	0.13	0.00	0.21	0.05	0.47	11.4286	2.40	2.97	5.37
2 TON TRUCK		\$/Mi	0.12	0.00	0.28	0.00	0.54	0.17	1.11	3.0000	1.20	2.13	3.33
3/4 TON PICKUP	4WD	\$/Mi	0.10	0.00	0.10	0.00	0.14	0.03	0.37	21.4286	4.29	3.64	7.93
MINI PICKUP		\$/Mi	0.06	0.00	0.07	0.00	0.11	0.03	0.27	11.4286	1.49	1.60	3.09
CONCRETE DITCH		\$/Ac-In	0.00	0.04	0.02	0.00	0.36	0.02	0.44	15.9000	0.95	6.04	6.99
DELIVERY SYSTEM		\$/Ac-In	0.00	0.20	0.03	0.00	0.11	0.00	0.34	63.6000	14.63	7.00	21.63
DIRT DITCH		\$/Ac-In	0.00	0.03	0.03	0.00	0.16	0.00	0.22	23.8200	1.43	3.81	5.24
GATED PIPE		\$/Ac-In	0.00	0.07	0.01	0.00	0.05	0.00	0.13	23.8200	1.91	1.19	3.10
LABOR HOUSE	#1	\$/Year	1,200.00	145.40	1,000.00	0.00	3,148.42	273.22	5,767.04	0.0011	2.67	3.89	6.56
LABOR HOUSE	#2	\$/Year	1,200.00	145.40	1,000.00	0.00	5,247.51	455.39	8,048.30	0.0011	2.67	6.48	9.15
MACHINE SHED	20 X 40	\$/Year	100.00	36.35	100.00	0.00	433.16	37.59	707.10	0.0011	0.27	0.53	0.80
METAL SHOP	40 X 80	\$/Year	720.00	87.24	100.00	0.00	8,395.94	728.61	10,031.79	0.0011	1.03	10.37	11.40



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