

# Crop Enterprise Budget

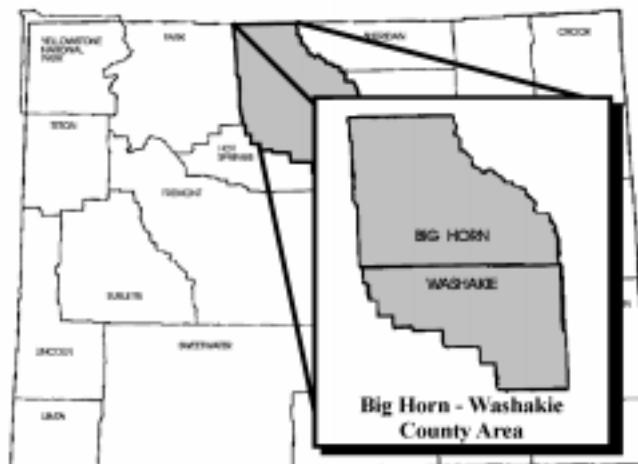
## Corn for Grain

### 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 production of corn for grain are listed in chronological order in the enterprise budget. After fall ground preparation, spring work begins in late April starting with fertilizer application. The corn usually is planted in early May. Irrigation is started in mid-May, with a total of eight irrigations per growing season. A total of 45 acre-inches of water are delivered per acre of corn.

Corn grain harvest begins in early November. After threshing, the grain is hauled about 10 miles to the elevator for sale. The budgeted yield is 140 bushels per acre.

### Enterprise Budget

Economic costs and returns for corn for grain 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 are also 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 corn for grain enterprise is estimated at \$344.40 per acre. Total variable costs are estimated at \$389.15 per acre, with total fixed costs at \$190.63 per acre. The total of all costs for corn for grain is estimated at \$579.78 per acre, leaving a net projected return of (\$235.38) per acre. The net projected returns for the lease arrangement are (\$49.04) per acre for the landowner and (\$185.45) per acre for the tenant.

Corn for Grain

Enterprise Budget  
Economic Costs and Returns per Acre  
Corn for Grain - Big Horn-Washakie County Area  
90 Acre Enterprise

RETURNS SECTION				--- Crop-Share ---			
GROSS INCOME Description	Quantity	Unit	\$/Unit	Owner-Operator	Land-owner	Tenant	Your Return
				100% Total	33% Total	67% Total	
GRAIN CORN	140.00	BU	2.46	\$344.40	\$113.65	\$230.75	
Total GROSS Income				\$344.40	\$113.65	\$230.75	

VARIABLE COSTS SECTION											
VARIABLE COST Description	Dollars per Acre		----- M a t e r i a l s -----				Materials Total Cost Per Acre	Owner-Operator	--- Crop-Share ---		Your Cost
	LABOR	MACHINERY	Description	# Units Per Acre	Unit Type	\$/unit			Land-owner	Tenant	
<b>**ANNUAL**</b>											
LABOR HOUSE - 8 MONTH EMPLOYEE							3.28	----		3.28	
LABOR HOUSE - FULL TIME EMPLOYEE							3.28	----		3.28	
MACHINE SHED - 20 X 40							0.33	----		0.33	
METAL SHOP - 40 X 80							1.26	----		1.26	
4 WHEELER - 2WD	14.08	3.01					17.09	----		17.09	
MINI PICKUP	2.50	1.49					3.99	----		3.99	
1/2 TON PICKUP - 4WD	14.53	2.41					16.94	----		16.94	
3/4 TON PICKUP - 4WD	32.44	4.26					36.70	----		36.70	
GENERAL OVERHEAD							14.63	----		14.63	
OPERATOR MANAGEMENT							29.27	----		29.27	
Total ANNUAL							\$126.77	\$0.00		\$126.77	
<b>**PRE-PLANT FALL**</b>											
PLOW Operation	2.66	8.14					10.80	----		10.80	
ROLLER HARROW Operation	0.96	1.54					2.50	----		2.50	
ROLLER HARROW Operation	0.96	1.54					2.50	----		2.50	
LAND PLANE Operation	1.34	3.44					4.78	----		4.78	
LEVEL Operation	0.96	2.79					3.75	----		3.75	
SOIL TESTS						0.48	0.48	----		0.48	
Total PRE-PLANT FALL							\$24.81	\$0.00		\$24.81	
<b>**PRE-PLANT SPRING**</b>											
CUSTOM FERTILIZE Operation	0.00	0.00	11-52-0	0.096	TON	300.00	98.36	98.36	32.46	65.90	
			0-0-60	0.041	TON	180.00					
			46-0-0	0.221	TON	265.00					
FLD CULT, S-TINE Operation	0.57	1.05	CUSTOM FERTILIZE	1.000	ACRE	3.61					
			SUTAN	0.593	GAL	21.90	31.24	32.86	----	32.86	
			FRONTIER	0.179	GAL	102.00					
Total PRE-PLANT SPRING							\$131.22	\$32.46		\$98.76	
<b>**PLANT**</b>											
PLANT CORN Operation	0.69	1.10	CORN SEED	0.437	BAG	92.00	40.20	41.99	----	41.99	
Total PLANT							\$41.99	\$0.00		\$41.99	
<b>**GROW**</b>											
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	0.19	0.00	Purchased Water				1.14	1.33	1.14	0.19	
CONCRETE DITCH	0.08	0.00					0.08	----		0.08	
GATED PIPE	0.16	0.00					0.16	----		0.16	
DIRT DITCH	0.11	0.00					0.11	----		0.11	
CLOSE DITCHES Operation	0.17	0.21					0.38	----		0.38	
PICKUP PIPE Operation	0.80	0.19					0.99	----		0.99	
ROTARY HOE Operation	0.23	0.30					0.53	----		0.53	
CULTIVATE Operation	0.79	0.97					1.76	----		1.76	



## Corn for Grain

FIXED COSTS SECTION		--- Crop-Share ---			
FIXED COST Description	Unit	Owner-Operator	Land-owner	Tenant	Your Cost
Irrigation:					
Taxes	Acre	0.43	0.43	----	
Insurance	Acre	0.36	0.36	----	
Long Term Interest	Acre	5.97	5.97	----	
Depreciation	Acre	6.56	6.56	----	
Land:					
Taxes	Acre	7.76	7.76	----	
Long Term Interest	Acre	74.47	74.47	----	
Total FIXED Cost		\$190.63	\$120.87	\$68.87	
Total of ALL Cost		\$579.78	\$162.69	\$416.20	
NET PROJECTED RETURNS		(\$235.38)	(\$49.04)	(\$185.45)	

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
150HP TRACTOR 4WD	\$60,445	\$34,100	\$7,756	378 Hours	7,560 Hours	3,780 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
200BU COMBINE	\$93,245	\$49,215	\$5,184	119 Hours	2,380 Hours	1,190 Hours
6ROW CORN HEADER	\$16,434	\$8,674	\$914	26 Hours	520 Hours	260 Hours
CORRUGATOR 12 ROW	\$2,093	\$1,101	\$109	37 Hours	740 Hours	370 Hours
CULTIVATOR, 12ROW30"	\$10,113	\$5,320	\$527	17 Hours	340 Hours	170 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
FLD. CULT, 20 FTS-TINE	\$4,820	\$2,536	\$251	31 Hours	620 Hours	310 Hours
LAND PLANE 14 X 70	\$7,662	\$4,031	\$399	67 Hours	1,340 Hours	670 Hours
LEVELER, 3 POINT24 FT	\$9,560	\$5,029	\$498	48 Hours	960 Hours	480 Hours
PIPE TRAILER	\$1,631	\$858	\$85	158 Hours	3,160 Hours	1,580 Hours
PLOW, 2-WAY 5-16S	\$7,693	\$4,047	\$401	144 Hours	2,880 Hours	1,440 Hours
ROLLER HARROW 15 FT	\$7,947	\$4,181	\$414	124 Hours	2,480 Hours	1,240 Hours
ROTRY HOE, 12 ROW30"	\$6,562	\$3,452	\$342	6 Hours	120 Hours	60 Hours
ROW PLNTR, 12 ROW30"	\$32,320	\$17,002	\$1,685	16 Hours	320 Hours	160 Hours
SPRAYER, 3 POINT28 FT	\$2,812	\$1,532	\$252	10 Hours	150 Hours	75 Hours
SPRAYER, SDL TNK20 FT	\$2,812	\$1,532	\$252	49 Hours	735 Hours	368 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
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
TANDEM TRUCK #1	\$21,163	\$10,901	\$639	1,899 Mile	47,475 Mile	23,738 Mile
TANDEM TRUCK #2	\$21,163	\$10,901	\$639	1,699 Mile	42,475 Mile	21,238 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

Corn for Grain

TABLE 2. Irrigation System Costs per Acre-Inch Delivered

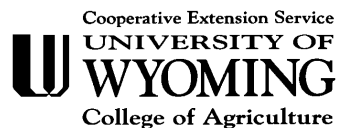
	Concrete <u>Ditch</u> *	Dirt <u>Ditch*</u>	Gated <u>Pipe*</u>
Variable Costs			
Repair and Maintenance (Off-Farm) .....	\$0.0128	\$0.0253	\$0.0165
Owner Operation Labor .....	0.0107	0.0107	0.0252
Purchased Water .....	0.0500	0.0751	0.0751
Fixed Costs			
Taxes .....	0.0039	0.0032	0.0023
Interest on Investment.....	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.

Corn for Grain

TABLE 3. Machinery, Equipment, and Building Cost Calculations

		RESOURCE COST PER UNIT OF USE							ENTERPRISE				
		-----Variable-----				-----Fixed-----			-----Costs per Acre-----				
Machine/Vehicle	Unit	Fuel and Lube	Operation and Labor & Inputs	Repair and Maint.	Hourly Lease	Deprec. and Interest	Taxes and Insurance	TOTAL COST	Resource Use per Acre	Variable	Resource Fixed	TOTAL	
100HP TRACTOR	2WD	\$/Hr	\$5.63	\$0.00	\$2.50	\$0.00	\$7.25	\$0.80	\$16.18	0.1664	\$1.35	\$1.34	\$2.69
125HP TRACTOR	MFD	\$/Hr	7.04	0.00	5.05	0.00	5.27	0.58	17.94	0.0909	1.10	0.53	1.63
150HP TRACTOR	4WD	\$/Hr	8.45	0.00	4.80	0.00	7.91	0.88	22.04	0.3236	4.29	2.84	7.13
200HP TRACTOR	MFD	\$/Hr	11.27	0.00	6.20	0.00	10.12	1.12	28.71	0.6782	11.85	7.62	19.47
4 WHEELER	2WD	\$/Hr	24.14	0.00	5.17	0.00	0.85	0.07	30.23	0.5833	17.10	0.54	17.64
60HP TRACTOR	2WD	\$/Hr	3.38	0.00	1.05	0.00	4.09	0.45	8.97	0.2126	0.94	0.97	1.91
200BU COMBINE		\$/Hr	12.37	0.00	18.64	0.00	36.79	4.02	71.82	0.3333	10.34	13.60	23.94
6ROW CORN HEADER		\$/Hr	0.00	0.00	0.72	0.00	29.67	3.24	33.63	0.2857	0.21	9.40	9.61
CORRUGATOR	12 ROW	\$/Hr	0.00	0.00	0.36	0.00	2.65	0.29	3.30	0.0300	0.01	0.09	0.10
CULTIVATOR, 12ROW	30"	\$/Hr	0.00	0.00	0.79	0.00	27.86	3.04	31.69	0.0909	0.07	2.81	2.88
DITCHER, 3 POINT	V-BLADE	\$/Hr	0.00	0.00	0.53	0.00	3.84	0.42	4.79	0.0400	0.02	0.17	0.19
END PULLER	3 ROW	\$/Hr	0.00	0.00	0.08	0.00	2.61	0.28	2.97	0.0126	0.00	0.04	0.04
FLD. CULT, 20 FT	S-TINE	\$/Hr	0.00	0.00	1.29	0.00	7.28	0.79	9.36	0.0714	0.09	0.58	0.67
LAND PLANE	14 X 70	\$/Hr	0.00	0.00	2.39	0.00	5.36	0.58	8.33	0.1538	0.37	0.91	1.28
LEVELER, 3 POINT	24 FT	\$/Hr	0.00	0.00	2.29	0.00	9.33	1.02	12.64	0.1111	0.25	1.15	1.40
PIPE TRAILER		\$/Hr	0.00	0.00	1.01	0.00	0.47	0.05	1.53	0.2000	0.20	0.10	0.30
PLOW, 2-WAY	5-16S	\$/Hr	0.00	0.00	8.29	0.00	2.50	0.27	11.06	0.3333	2.76	0.92	3.68
ROLLER HARROW	15 FT	\$/Hr	0.00	0.00	1.79	0.00	3.00	0.33	5.12	0.2222	0.40	0.74	1.14
ROTRY HOE, 12 ROW	30"	\$/Hr	0.00	0.00	0.70	0.00	51.21	5.59	57.50	0.0290	0.02	1.65	1.67
ROW PLNTR, 12 ROW	30"	\$/Hr	0.00	0.00	5.86	0.00	102.44	11.17	119.47	0.0870	0.51	9.88	10.39
SPRAYER, 3 POINT	28 FT	\$/Hr	0.00	0.00	0.70	0.00	15.67	1.49	17.86	0.0504	0.04	0.87	0.91
SPRAYER, SDL TNK	20 FT	\$/Hr	0.00	0.00	1.13	0.00	3.20	0.30	4.63	0.0714	0.08	0.25	0.33
TERRACE BLADE	8 FT	\$/Hr	0.00	0.00	0.31	0.00	1.89	0.21	2.41	0.0400	0.01	0.08	0.09
1/2 TON PICKUP	4WD	\$/Mi	0.08	0.00	0.13	0.00	0.21	0.05	0.47	11.1111	2.33	2.89	5.22
3/4 TON PICKUP	4WD	\$/Mi	0.10	0.00	0.10	0.00	0.14	0.03	0.37	20.8333	4.17	3.54	7.71
MINI PICKUP		\$/Mi	0.06	0.00	0.07	0.00	0.11	0.03	0.27	11.1111	1.44	1.56	3.00
TANDEM TRUCK	#1	\$/Mi	0.10	0.00	0.45	0.00	0.89	0.28	1.72	1.5556	0.86	1.82	2.68
TANDEM TRUCK	#2	\$/Mi	0.10	0.00	0.51	0.00	0.99	0.31	1.91	1.5556	0.95	2.02	2.97
CONCRETE DITCH		\$/Ac-In	0.00	0.04	0.02	0.00	0.36	0.02	0.44	11.3600	0.68	4.32	5.00
DELIVERY SYSTEM		\$/Ac-In	0.00	0.20	0.03	0.00	0.11	0.00	0.34	45.6000	10.49	5.02	15.51
DIRT DITCH		\$/Ac-In	0.00	0.03	0.03	0.00	0.16	0.00	0.22	17.0400	1.02	2.73	3.75
GATED PIPE		\$/Ac-In	0.00	0.07	0.01	0.00	0.05	0.00	0.13	17.0400	1.36	0.85	2.21
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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