

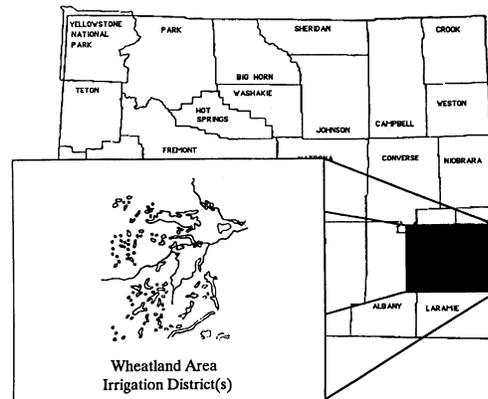
Crop Enterprise Budget

Sugar Beets, Thick-Planted, Wheatland Area

John P. Hewlett, Farm/Ranch Management Extension Specialist
Chris Bastian, Research Associate

MP-72.3

University of Wyoming - August, 1994



This enterprise budget estimates typical costs and returns for sugar beets in the Wheatland area of Wyoming. It should be used only as a guide. The data presented are not taken from an actual farm. The major assumptions in this budget are presented below.

LAND

The budget is based on a 500-acre farm, with 100 acres of sugar beets grown each year. Other enterprises included on this farm are: alfalfa establishment, 17 acres; alfalfa hay, 100 acres; dry beans, 75 acres; corn for grain, 62.5 acres; corn for silage, 62.5 acres; and setaside program, 23 acres. The remaining 60 acres; include roadways, fence lines, and farmsteads. Owned land is valued at \$750 per acre for flood-irrigated land and \$850 per acre for center pivot-irrigated land. Leased land is rented on a crop-share basis. For sugar beets, a 20 percent share of gross revenue is paid to the landowner. In turn, the landowner pays for all purchased irrigation water and 20 percent of the fertilizer, herbicide, and insecticide applied to the crop.

LABOR

Labor is provided by the operator and one full-time employee. All labor, including operator labor, is valued at \$5 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 is used on the farm for labor-intensive operations such as harvest.

CAPITAL

The operator provides 50 percent of the long-term capital and 50 percent of the operating capital for this enterprise. Fifty percent of the long-term capital is borrowed at an interest rate of 9.75 percent APR (Annual Percentage Rate). Fifty percent of the operating capital is borrowed at an interest rate of 9 percent APR. The interest rates used here are for short-term planning. Real interest rates 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 the 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. 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 1 and 3 may also 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. The irrigation water provided by each irrigation system is broken down as follows: 30 percent center pivot, 25 percent concrete ditch and tubes, and 45 percent gated pipe (plastic and aluminum, 50 percent each). This method was employed because crops will normally be rotated onto all farmed land over time. Table 2 estimates the cost per acre-inch for providing irrigation water with each irrigation system.

OPERATIONS

Operations related to sugar beet production are listed in chronological order in the enterprise budget. The ground is prepared in early March, including fertilization. The beets are usually planted early in the following month. Irrigation is started in early July, with a total of seven irrigations per growing season. A total of 31 acre-inches of water is delivered per acre of sugar beets.

One hundred percent of the beet crop is insured against weather damage/loss. Because the crop is assumed to be thick-planted, it is thinned and weeded once by migrant laborers. Beet harvest begins in late September with defoliation. The beets are then pulled and hauled using equipment owned by the farm. The budgeted yield is 20 tons per acre at 19 percent sugar.

ENTERPRISE BUDGET

Economic costs and returns for corn for grain production 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 in whole or in part by the landowner are listed in the landowner column. The tenant column describes the tenant's share of the appropriate cost and return items. The far right column has been provided to calculate changes from this base budget for your operation.

SUMMARY

Gross income for the sugar beet enterprise is estimated at \$1,000 per acre. Total variable costs are estimated at \$532.21 per acre, with total fixed costs at \$213.18 per acre. The total of all costs for sugar beets is estimated at \$745.39 per acre, leaving a net projected return of \$254.61 per acre. The net projected returns for the share-lease arrangement are \$50.48 per acre for the landowner and \$204.13 per acre for the tenant.

Sugar Beets, Thick-Planted

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
100 HP TRACTOR 2WD	\$45,054	\$26,562	\$8,070	635 Hours	10,160 Hours	5,080 Hours
140 HP TRACTOR MFD	\$59,492	\$33,563	\$7,634	496 Hours	9,920 Hours	4,960 Hours
70 HP TRACTOR 2WD	\$27,245	\$15,370	\$3,496	323 Hours	6,460 Hours	3,230 Hours
6-ROW CULTIVATOR	\$7,253	\$4,552	\$1,850	284 Hours	1,988 Hours	994 Hours
6-ROW PLANTER	\$6,785	\$3,862	\$940	94 Hours	1,128 Hours	564 Hours
BEEF DEFOLIATOR 6-ROW	\$12,652	\$6,656	\$659	50 Hours	1,000 Hours	500 Hours
BEEF PULLER 3-ROW	\$27,233	\$14,002	\$771	67 Hours	1,675 Hours	838 Hours
FERTILIZER SPREDRELEASED	----	----	----	42 Hours	504 Hours	252 Hours
LEVELER 12 FT	\$6,832	\$3,594	\$356	48 Hours	960 Hours	480 Hours
PIPE TRAILER 30 FT	\$1,416	\$745	\$74	47 Hours	940 Hours	470 Hours
PLOW 2-WAY 5-18'S	\$6,860	\$3,632	\$404	114 Hours	2,166 Hours	1,083 Hours
RIPPER BAR 18 FT	\$2,846	\$1,497	\$148	22 Hours	440 Hours	220 Hours
ROLLER HARROW	\$7,973	\$4,369	\$765	134 Hours	2,010 Hours	1,005 Hours
SPRAYER 12-ROW PULL	\$2,509	\$1,367	\$225	75 Hours	1,125 Hours	563 Hours
TANDEM DISK 21 FT	\$11,959	\$6,291	\$623	68 Hours	1,360 Hours	680 Hours
WEED BURNER	\$53	\$28	\$3	10 Hours	200 Hours	100 Hours
1/2 TON PICKUP 2WD	\$14,279	\$8,967	\$3,656	10,000 Miles	75,000 Miles	37,500 Miles
1/2 TON PICKUP 4WD	\$16,190	\$10,167	\$4,145	10,000 Miles	75,000 Miles	37,500 Miles
2 TON TRUCK #1	\$11,605	\$6,055	\$505	2,276 Miles	50,072 Miles	25,036 Miles
2 TON TRUCK #2	\$9,494	\$4,890	\$287	2,250 Miles	56,250 Miles	28,125 Miles
CENTER PIVOT	\$29,337	\$16,171	\$3,004	2,929 AcIns	43,935 AcIns	21,968 AcIns
CONCRETE DITCH	\$21,814	\$10,907	\$0	3,975 AcIns	99,375 AcIns	49,688 AcIns
GATED PIPE	\$21,422	\$11,808	\$2,194	7,233 AcIns	108,495 AcIns	54,248 AcIns
GRND WATER WELL	\$10,530	\$5,424	\$318	969 AcIns	24,225 AcIns	12,113 AcIns
METAL SHOP 20 X 20		\$10,000	\$1,000		30 Years	15 Years
POLE BARN 40 X 80		\$16,500	\$1,650		30 Years	15 Years

TABLE 2. Irrigation System Costs per Acre-Inch Delievered

	Center Pivot	Concrete Ditch	Gated Pipe	Ground Water Well
VARIABLE COSTS	=====	=====	=====	=====
Fuel Cost	\$0.81	\$----	\$----	\$2.22
Repair and Maintenance (off-farm)	0.69	----	0.06	0.27
Owner Operation Labor	0.05	----	----	----
Hired Operation Labor	----	0.29	0.09	----
Purchased Water	----	0.64	0.64	----
FIXED COSTS				
Taxes 0.07	0.03	0.04	0.11	
Interest on Investment	0.54	0.24	0.28	0.95
Depreciation	0.68	0.24	0.32	0.55
Insurance	0.05	0.02	0.02	0.07
=====	=====	=====	=====	=====
TOTAL COST PER ACRE-INCH DELIVERED	\$2.89	\$1.46	\$1.45	\$4.17

Sugar Beets, Thick-Planted

Enterprise Budget Economic Costs and Returns per Acre Sugar Beets, Thick-Planted - Wheatland Area 100-Acre Enterprise

RETURNS SECTION -----				--- Crop-Share ---			
GROSS INCOME Description	Quantity	Unit	\$/Unit	Owner-	Land-	Tenant	Your
				Operator	owner	80%	
				100%	20%	80%	
=====				=====	=====	=====	=====
SUGAR BEETS	20.00	TON	50.00	\$1,000.00	\$200.00	\$800.00	
Total GROSS Income				\$1,000.00	\$200.00	\$800.00	

VARIABLE COSTS SECTION -----				----- M a t e r i a l s -----				--- Crop-Share ---			
VARIABLE COST Description	Dollars per Acre		Description	# Units	Unit	\$/unit	Materials	Owner	Land-	Tenant	Your
	LABOR	MACHINERY		Per Acre	Type		Per Acre	Operator	owner	80%	Cost
=====				=====	=====	=====	=====	=====	=====	=====	=====
ANNUAL											
METAL SHOP - 20 X 20								2.66	----		2.66
POLE BARN - 40 X 80								1.54	----		1.54
1/2 TON PICKUP - 2WD	6.19	5.38						11.57	----		11.57
1/2 TON PICKUP - 4WD	6.19	6.04						12.23	----		12.23
GENERAL OVERHEAD								21.95	----		21.95
OPERATOR MANAGEMENT								43.91	----		43.91
Total ANNUAL								93.86	0.00		93.86
PREPLANT											
CLEAN DITCHES	Operation	0.26	0.02					0.28	----		0.28
SPREAD FERTILIZER	Operation	0.59	0.40	FERTILIZER SPREDR	1.000	Acres	0.50	39.50	40.49	7.90	32.59
				11-52-0	0.100	TON	264.00				
				46-0-0	0.050	TON	252.00				
DISK	Operation	0.74	2.02					2.76	----		2.76
PLOW	Operation	1.97	6.41					8.38	----		8.38
ROLLER HARROW	Operation	1.18	2.31					3.49	----		3.49
ROLLER HARROW	Operation	1.18	2.31					3.49	----		3.49
LEVEL	Operation	1.32	4.12					5.44	----		5.44
Total PRE-PLANT								64.33	7.90		56.43
PLANT											
PLANT BEETS	Operation	1.97	3.80	BEET SEED	1.500	LBS	27.50	41.98	47.75	----	47.75
				ANTOR	0.015	GAL	48.42				
CROP INSURANCE	BEETS							8.00	8.00	----	8.00
Total PLANT								55.75	0.00		55.75
GROW BEETS											
CULTIVATE 6-ROWS	Operation	2.96	6.07					9.03	----		9.03
SPRAY BEETS	Operation	0.99	1.00	BETAMIX	0.750	GAL	89.17	66.88	68.87	13.38	55.49
THIN BEETS	LABOR							30.00	30.00	----	30.00
CULTIVATE 6-ROWS	Operation	2.96	6.07					9.03	----		9.03
SPRAY BEETS	Operation	0.99	1.00	POAST	0.187	GAL	131.97	52.72	54.71	10.54	44.17
				STINGER	0.057	GAL	492.00				
CULTIVATE 6-ROWS	Operation	1.97	4.05					6.02	----		6.02
LAY GATED PIPE	Operation	0.41	0.15					0.56	----		0.56
CENTER PIVOT		0.04	1.44					1.48	----		1.48
GRND WATER WELL			0.81					0.81	----		0.81
CONCRETE DITCH		0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35	0.35
GATED PIPE		0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34	0.34
WEED CROP	LABOR						30.00	30.00	----		30.00
CULTIVATE 6-ROWS	Operation	1.48	3.41					4.89	----		4.89
CENTER PIVOT		0.04	1.44					1.48	----		1.48
GRND WATER WELL			0.81					0.81	----		0.81
CONCRETE DITCH		0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35	0.35
GATED PIPE		0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34	0.34
CENTER PIVOT		0.04	1.44					1.48	----		1.48
GRND WATER WELL			0.81					0.81	----		0.81
CONCRETE DITCH		0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35	0.35
GATED PIPE		0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34	0.34
CENTER PIVOT		0.04	1.44					1.48	----		1.48
GRND WATER WELL			0.81					0.81	----		0.81
CONCRETE DITCH		0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35	0.35
GATED PIPE		0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34	0.34
CENTER PIVOT		0.04	1.44					1.48	----		1.48
GRND WATER WELL			0.81					0.81	----		0.81
CONCRETE DITCH		0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35	0.35
GATED PIPE		0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34	0.34
CENTER PIVOT		0.04	1.44					1.48	----		1.48
GRND WATER WELL			0.81					0.81	----		0.81
CONCRETE DITCH		0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35	0.35

Wheatland Area, June 1992

Sugar Beets, Thick-Planted

	0.21	0.13	Purchased Water		1.45	1.79	1.45	0.34			
GATED PIPE											
CENTER PIVOT	0.04	1.44				1.48	----	1.48			
VARIABLE COSTS SECTION -----											
	----- M a t e r i a l s -----				Materials		--- Crop-Share ---				
VARIABLE COST Description	Dollars per Acre		Description	# Units Per Acre	Unit Type	\$ /unit	Total Cost Per Acre	Owner- Operator	Land- owner	Tenant	Your Cost
GRND WATER WELL		0.81						0.81	----	0.81	
CONCRETE DITCH	0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35		
GATED PIPE	0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34		
CENTER PIVOT	0.04	1.44					1.48	----	1.48		
GRND WATER WELL		0.81					0.81	----	0.81		
CONCRETE DITCH	0.35	0.00	Purchased Water			0.79	1.14	0.79	0.35		
GATED PIPE	0.21	0.13	Purchased Water			1.45	1.79	1.45	0.34		
PIKUP GATED PIPE Operation	0.41	0.15					0.56	----	0.56		
Total GROW BEETS								250.21	39.60	210.61	
HARVEST BEETS											
DEFOLIATE BEETS Operation	2.96	5.99					8.95	----	8.95		
PULL AND LOAD Operation	3.95	11.54					15.49	----	15.49		
HAUL CROP 8TN/LD Operation	6.28	7.72					14.00	----	14.00		
HAUL CROP 8TN/LD Operation	6.28	7.76					14.04	----	14.04		
Total HARVEST BEETS								52.48	0.00	52.48	
POST HARVEST											
RIP GROUND Operation	0.74	1.76					2.50	----	2.50		
BEEF ASSOCIATION DUES						2.00	2.00	----	2.00		
Total POST HARVEST								4.50	0.00	4.50	
Operating Interest								11.08	----	11.08	
Total VARIABLE COST								\$532.21	\$47.50	\$484.71	
GROSS INCOME minus VARIABLE COST								\$467.79	\$152.50	\$315.29	

FIXED COSTS SECTION -----					
		--- Crop-Share ---			
FIXED COST Description	Unit	Owner- Operator	Land- owner	Tenant	Your Cost
Machinery and Equipment:					
Taxes	Acre	7.41	----	7.41	
Insurance	Acre	13.73	----	13.73	
Long-term Interest	Acre	45.56	----	45.56	
Depreciation	Acre	44.45	----	44.45	
Buildings and Improvements:					
Taxes	Acre	0.87	0.87	----	
Insurance	Acre	0.55	0.55	----	
Long-term Interest	Acre	7.77	7.77	----	
Depreciation	Acre	4.93	4.93	----	
Irrigation:					
Taxes	Acre	1.21	1.21	----	
Insurance	Acre	0.66	0.66	----	
Long-term Interest	Acre	12.21	12.21	----	
Depreciation	Acre	12.91	12.91	----	
Land:					
Taxes	Acre	8.78	8.78	----	
Long-term Interest	Acre	52.13	52.13	----	
Total FIXED Cost		\$213.18	\$102.02	\$111.16	
Total of ALL Cost		\$745.39	\$149.52	\$595.87	

NET PROJECTED RETURNS		\$254.61	\$50.48	\$204.13	

Sugar Beets, Thick-Planted

TABLE 3. Machinery, Equipment, and Building Cost Calculations

Machine/Vehicle	Unit	RESOURCE COST PER UNIT OF USE								ENTERPRISE			
		-----Variable-----				-----Fixed-----				-----Costs per Acre-----			
		Fuel and Lube	Operation Labor & Inputs	Repair and Maint.	Hourly Lease	Deprec. and Interest	Taxes and Insurance	TOTAL COST	Resource Use per Acre	Variable	Fixed	TOTAL	
100 HP TRACTOR	2WD	\$/Hour	\$5.17	\$0.00	\$4.86	\$0.00	\$4.48	\$0.72	\$15.23	2.8166	\$28.25	\$14.65	\$42.90
140 HP TRACTOR	MFD	\$/Hour	7.24	0.00	6.20	0.00	6.66	1.17	21.27	1.4722	19.79	11.53	31.32
70 HP TRACTOR	2WD	\$/Hour	3.62	0.00	1.85	0.00	4.69	0.82	10.98	0.5048	2.76	2.78	5.54
6-ROW CULTIVATOR		\$/Hour	0.00	0.00	3.63	0.00	2.46	0.28	6.37	1.3333	4.84	3.65	8.49
6-ROW PLANTER		\$/Hour	0.00	0.00	4.48	0.00	5.08	0.71	10.27	0.3333	1.49	1.93	3.42
BEEF DEFOLIATOR	6-ROW	\$/Hour	0.00	0.00	3.15	0.00	13.13	2.30	18.58	0.5000	1.58	7.72	9.30
BEEF PULLER	3-ROW	\$/Hour	0.00	0.00	6.85	0.00	18.65	3.61	29.11	0.6667	4.57	14.84	19.41
FERTILIZER SPREDR	LEASED	\$/Hour	0.00	0.00	0.00	5.00	0.00	0.00	5.00	0.1000	0.50	0.00	0.50
LEVELER	12 FT	\$/Hour	0.00	0.00	1.64	0.00	7.39	1.29	10.32	0.2222	0.36	1.93	2.29
PIPE TRAILER	30 FT	\$/Hour	0.00	0.00	0.33	0.00	1.56	0.27	2.16	0.0714	0.02	0.13	0.15
PLOW 2-WAY	5-18'S	\$/Hour	0.00	0.00	5.90	0.00	3.04	0.52	9.46	0.3333	1.97	1.19	3.16
RIPPER BAR	18 FT	\$/Hour	0.00	0.00	0.67	0.00	6.71	1.18	8.56	0.1250	0.08	0.99	1.07
ROLLER HARROW		\$/Hour	0.00	0.00	1.69	0.00	3.66	0.56	5.91	0.4000	0.68	1.69	2.37
SPRAYER 12-ROW	PULL	\$/Hour	0.00	0.00	1.15	0.00	2.05	0.32	3.52	0.3334	0.38	0.79	1.17
TANDEM DISK	21 FT	\$/Hour	0.00	0.00	2.89	0.00	9.12	1.60	13.61	0.1250	0.36	1.34	1.70
WEED BURNER		\$/Hour	0.93	0.00	0.00	0.00	0.53	0.05	1.51	0.0240	0.02	0.01	0.03
1/2 TON PICKUP	2WD	\$/Mile	0.10	0.00	0.06	0.00	0.26	0.07	0.49	34.4828	5.52	11.38	16.90
1/2 TON PICKUP	4WD	\$/Mile	0.10	0.00	0.07	0.00	0.29	0.08	0.54	34.4828	5.86	12.76	18.62
2 TON TRUCK	#1	\$/Mile	0.24	0.00	0.20	0.00	0.48	0.21	1.13	17.5000	7.70	12.08	19.78
2 TON TRUCK	#2	\$/Mile	0.24	0.00	0.20	0.00	0.37	0.17	0.98	17.5000	7.70	9.45	17.15
CENTER PIVOT		\$/Ac-In	0.81	0.05	0.87	0.00	1.76	0.12	3.61	6.4400	11.14	12.11	23.25
CONCRETE DITCH		\$/Ac-In	0.00	0.93	0.00	0.00	0.91	0.06	1.90	8.7500	8.14	8.49	16.63
GATED PIPE		\$/Ac-In	0.00	0.73	0.08	0.00	0.99	0.08	1.88	15.9600	12.93	17.08	30.01
GRND WATER WELL		\$/Ac-In	2.22	0.00	0.52	0.00	2.58	0.23	5.55	2.1000	5.75	5.90	11.65
METAL SHOP	20 X 20	\$/Year	720.00	0.00	140.37	0.00	1,545.75	131.63	2,537.75	0.0020	1.72	3.35	5.07
POLE BARN	40 X 80	\$/Year	360.00	0.00	140.37	0.00	2,550.49	217.20	3,268.06	0.0020	1.00	5.54	6.54



Trade or brand names used in this publication are used only for the purpose of educational information. The information given herein is supplied with the understanding that no discrimination is intended, and no endorsement information of products by the Agricultural Research Service, Federal Extension Service, or State Cooperative Extension Service is implied. Nor does it imply approval of products to the exclusion of others which may also be sui

Issued in furtherance of Cooperative Extension Work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jim DeBree, Director, Cooperative Extension Service, University of Wyoming, Laramie, WY 82071.

Persons seeking admission, employment, or access to programs of the University of Wyoming shall be considered without regard to race, color, national origin, sex, age, religion, political belief, handicap or veteran status.