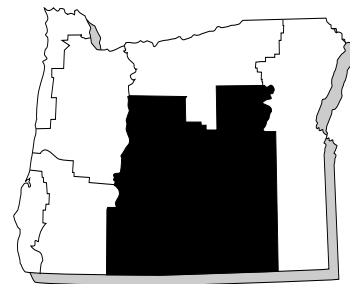


Enterprise Budget

Winter Wheat, South Central Region



EM 8594, April 1995

Brenda Turner, graduate research assistant, and Mylen Bohle, Extension agent, Crook County, Oregon State University

This enterprise budget estimates the typical costs of producing wheat in the Jefferson/Crook/Deschutes counties of South Central Oregon. While efforts were made to reflect common practices, it is not representative of any particular farm and should thus be used only as a guide to estimating actual costs. The major assumptions used in constructing this budget are discussed below. Assistance was provided by producers in Crook and Jefferson counties and is greatly appreciated.

Cropping Pattern

This budget is based on a 500-acre farm with 100 acres in production of soft white winter wheat following bluegrass. This budget estimates costs for 1 acre of wheat.

Land and Irrigation

A land lease charge of \$100 per acre is included to represent the cost of leasing or owning land. The charge is based on a long-term lease of good quality irrigated land in Jefferson County and includes wheel-line irrigation systems and canal maintenance. A water charge of \$24.65 per acre covers the cost of irrigation water. This charge is based on the 1994 North Unit Irrigation District water and construction charges. Electricity, repair, and maintenance for the sprinkler system is \$29.55 per acre.

Labor

Labor is hired at a rate of \$7 per hour, which includes worker's compensation, unemployment insurance, and other payroll expenses. Owner/operator labor is assumed to be a cash expense of \$15 per hour. Labor hours for machinery operations are calculated by multiplying 1.21 times machine hours to allow for setup, movement, and adjustment. All repairs are estimated separately from operation labor hours.

Capital

Opportunity costs of capital are charged at a rate of 8 percent for current, intermediate, and long-term capital provided by the owner/operator.

Machinery and Equipment

The machinery complement is sufficient to farm 500 production acres. A detailed breakdown of machinery

values used in this budget is shown in Table 1. January 1994 replacement costs are used, assuming the machinery is half depreciated. Estimated machinery costs are shown in Table 2. Twenty percent of the total pickup and ATV miles driven annually are allocated to wheat production.

Operations

Land preparation begins with a soil test (three tests per 100 acres) followed by plowing, disking, and a fertilizer application. The field is planted in the fall with 125 lb of seed per acre.

In the spring, cultural practices include irrigation (6 sets @ 3" per set), a second fertilizer application, and a broadleaf herbicide custom application. The wheat is combined and then hauled with two 2-ton trucks to a local elevator, with a round trip of 15 miles. The wheat price of \$3.75 per bu used in this budget represents the price received when hauling to a local elevator.

A miscellaneous charge of \$10 per acre is included to cover general insurance, tools, office supplies, and other miscellaneous expenses. A pickup is included for hauling supplies and general farm work.

Results

Total variable costs are \$296 per acre, and fixed costs total \$140 per acre. The net projected returns given a wheat price of \$3.75 per bushel and a yield of 110 bushels per acre is -\$23. The break-even price over variable cost is \$2.68/bu, and the break-even price over total cost is \$3.96/bu.

In Tables 3 and 4, net returns are presented for varying prices and yields. As yield fluctuates, hauling costs are affected. This is reflected in Tables 3 and 4. Harvest costs also may change with yield; however, in this sensitivity analysis, combining is assumed to be performed at 2.5 acres per hour for all yield levels.

Production and Price

Figure 1 provides wheat production (bu/acre) and price (\$/bu) data for Jefferson County, Oregon (1980-1994).



OREGON STATE UNIVERSITY EXTENSION SERVICE

EM 8594 Enterprise Budget

ECONOMIC COSTS and RETURNS SOUTH CENTRAL REGION Winter Wheat, 100 acres (\$/acre)

<u>GROSS INCOME</u> Description	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Your Income</u>
Wheat	110.00	bu	3.75	412.50	_____
Total GROSS Income				412.50	_____
<u>VARIABLE COST</u> Description	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>	<u>Your Cost</u>
Soil Test	0.00	0.00	0.66	0.66	_____
Plow	2.82	6.70	0.00	9.52	_____
Disk	2.12	4.24	0.00	6.36	_____
Fertilize	0.00	0.00	46.90	46.90	_____
20-10-10-10	400 lb x 0.103 = 41.40				
Custom Application	1 ac x 5.50 = 5.50				
Plant	3.63	4.37	17.96	25.96	_____
Wheat Seed	125 lb x 0.143 = 17.96				
Irrigate	21.00	0.00	54.20	75.20	_____
Water	1 ac x 24.65 = 24.65				
Electricity	1 ac x 25.00 = 25.00				
Repair & Maint.	1 ac x 4.55 = 4.55				
Fertilize	0.00	0.00	36.70	36.70	_____
46-0-0-0	260 lb x 0.12 = 31.20				
Custom Application	1 ac x 5.50 = 5.50				
Broadleaf Herbicide	0.00	0.00	10.00	10.00	_____
Herbicide	1.5 pt x 1.587 = 2.38				
Herbicide	3 oz x 0.707 = 2.11				
Custom Application	1 ac x 5.50 = 5.50				
Harvest	7.26	22.32	0.00	29.58	_____
Haul	4.05	5.11	0.00	9.16	_____
MISCELLANEOUS					
General Overhead	0.00	0.00	10.00	10.00	_____
Pickup	10.71	3.10	0.00	13.81	_____
ATV	7.50	0.13	0.00	7.63	_____
Operating Capital Interest	0.00	0.00	14.25	14.25	_____
Total MISCELLANEOUS				45.69	_____
Total VARIABLE COST				295.73	_____
GROSS INCOME minus VARIABLE COST				116.77	_____
<u>FIXED COST</u> Description	<u>Unit</u>	<u>Total</u>	<u>Your Cost</u>		
CASH Cost					
Machinery & Equipment Insurance	acre	4.48	_____		
Land	acre	100.00	_____		
Total CASH Cost		104.48	_____		
NONCASH Cost					
Machinery and Equipment Interest & Depreciation	acre	35.72	_____		
Total NONCASH Cost		35.72	_____		
Total FIXED Cost		140.20	_____		
Total of ALL Cost		435.93	_____		
NET PROJECTED RETURNS		-23.43	_____		
Break-even Price, Total Variable Cost		\$2.68 per bu	_____		
Break-even Price, Total Cost		\$3.96 per bu	_____		

Figure 1. Wheat Production and Price in Jefferson County, Oregon 1980 - 1994

Table 1. Machinery Cost Assumptions

Item	Size	List Price	Current Market Value	Salvage Value	Useful Life	Remaining Life	Annual Use
Tractor	125 hp	65,000	42,250	19,500	10,000 hr	5,000 hr	86 hr
Combine		60,000	36,000	12,000	4,000 hr	2,000 hr	40 hr
Cultimulch	12 ft	8,000	4,800	1,600	2,000 hr	1,000 hr	20 hr
Disk	15 ft	9,500	5,700	1,900	2,000 hr	1,000 hr	25 hr
Grain Drill	12 ft	3,750	2,250	750	2,000 hr	1,000 hr	20 hr
Moldboard Plow	3-bottom	5,685	3,412	1,139	1,500 hr	750 hr	33 hr
Roller	12 ft	2,500	1,500	500	2,000 hr	1,000 hr	20 hr
ATV		3,500	2,100	700	4,000 mi	2,000 mi	50 mi
Farm Truck (2)	2 ton	6,000	3,600	1,200	90,000 mi	45,000 mi	675 mi
Pickup	1/2 ton	15,000	9,000	3,000	100,000 mi	50,000 mi	2,500 mi

EM 8594 Enterprise Budget

Table 2. Machinery & Equipment Cost Calculations

Machine	Size	Costs per Hour or Mile				Total Cost	Hours or Miles	Costs per Acre		
		Variable		Fixed				Variable	Fixed	Total
		Fuel & Repair & Lube	Maint.	Depr. & Interest	Insurance					
Tractor	125 hp	6.76	8.19	10.96	0.85	26.76	0.87	\$12.88	\$10.17	\$23.05
Combine		9.37	46.44	18.38	1.20	75.39	0.40	22.32	7.83	30.15
Cultimulch	12 ft	0.00	1.89	8.81	0.72	11.42	0.20	0.38	1.91	2.28
Disk	15 ft	0.00	1.99	17.46	1.14	20.59	0.25	0.50	4.65	5.15
Grain Drill	12 ft	0.00	2.50	10.13	0.66	13.29	0.20	0.50	2.16	2.66
Moldboard Plow	3-bottom	0.00	5.12	11.36	0.93	17.40	0.34	1.70	4.10	5.80
Roller	12 ft	0.00	0.54	0.81	0.05	1.40	0.20	0.11	0.17	0.28
ATV		0.06	0.20	1.48	0.08	1.82	0.20	0.13	0.78	0.91
Farm Truck (2)	2 ton	0.16	0.60	0.18	0.13	1.07	6.75	5.12	2.09	7.20
Pickup	1/2 ton	0.08	0.04	0.20	0.06	0.38	25.00	3.10	6.33	9.43
Total								\$46.74	\$40.17	\$86.91

Table 3. Annual Net Projected Returns per Acre over Variable Cost with Varying Yield and Price per Bushel *

Yield (bu/acre)	\$2.75	\$3.00	\$3.25	\$3.50	\$3.75	\$4.00	\$4.25	\$4.50	\$4.75	\$5.00
80	-\$74	-\$54	-\$34	-\$13	\$7	\$28	\$48	\$68	\$88	\$108
90	-45	-25	-2	21	43	67	89	112	134	157
100	-15	5	30	55	80	106	131	156	181	206
110	15	35	62	90	117	145	173	200	228	255
120	44	64	94	124	154	184	214	244	274	304
130	103	123	158	193	228	262	297	332	367	402
140	104	124	159	193	228	263	298	333	368	403
150	133	153	191	227	265	302	339	377	414	452
160	169	189	229	268	308	347	387	427	467	507

*Hauling costs are varied according to yield. Combining (harvest) costs are held constant at the 110 bu yield rate across all yield levels.

Table 4. Annual Net Projected Returns per Acre over Total Cost with Varying Yield and Price per Bushel *

Yield (bu/acre)	\$2.75	\$3.00	\$3.25	\$3.50	\$3.75	\$4.00	\$4.25	\$4.50	\$4.75	\$5.00
80	-\$214	-\$194	-\$174	-\$153	-\$133	-\$112	-\$92	-\$72	-\$52	-\$32
90	-185	-165	-142	-119	-96	-73	-51	-28	-6	17
100	-155	-135	-110	-85	-60	-34	-9	16	41	66
110	-126	-106	-78	-50	-23	5	33	60	88	115
120	-96	-76	-46	-16	14	44	74	104	134	164
130	-67	-47	-14	18	51	83	116	148	181	213
140	-37	-17	18	53	88	122	157	192	227	262
150	-8	13	50	87	124	161	199	236	274	311
160	22	42	82	121	161	200	240	280	320	360

*Hauling costs are varied according to yield. Combining (harvest) costs are held constant at the 110 bu yield rate across all yield levels.



Extension Service, Oregon State University, Corvallis, Lyla Houghlum, interim director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

Oregon State University Extension Service offers educational programs, activities, and materials—without regard to race, color, religion, sex, sexual orientation, national origin, age, marital status, disability, and disabled veteran or Vietnam-era veteran status—as required by Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. Oregon State University Extension Service is an Equal Opportunity Employer.