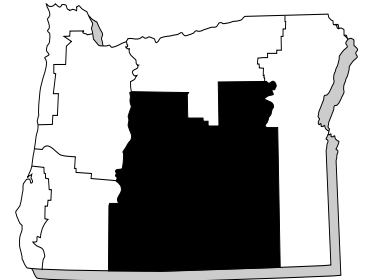




Enterprise Budget

Spring Barley, South Central Region



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This enterprise budget estimates the typical costs of producing spring barley in the Jefferson, Crook, and 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 barley following bluegrass. This budget estimated costs for 1 acre of barley.

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 lease of irrigated land and includes the sprinkler system and canal maintenance. The cost of irrigation water is \$24.65 per acre and is based on the North Unit Irrigation District water and construction charges for 1994. 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 operation are calculated by multiplying 1.21 times machine hours to allow for setup, movement, and adjustment.

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 barley production.

Operations

Land preparation begins with a soil test (three tests per 100 acres) followed by plowing, disking, and a fertilizer application. One hundred and twenty pounds of barley seed is planted per acre. The barley is irrigated with a total of 15" over 5 sets. A custom herbicide mix is applied for weed control.

The barley is combined and hauled to a local elevator. A yield of 3 tons per acre at \$90 per ton results in a total gross income per acre of \$270.

Other

A pickup is included for hauling supplies and general farm work. An ATV is used to monitor the irrigation system and as on-farm transportation. A general overhead charge of \$10 per acre is included to cover general insurance, tools, shop, utilities, accounting fees, office supplies, and other miscellaneous expenses.

Results

The total variable cost is \$259, and the break-even price over variable cost is \$94 per ton. The total of all costs is \$400, and the break-even price over total cost is \$145 per ton. The net projected returns given a barley price of \$90 per ton and a yield of 2.75 tons per acre is -\$152.

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 barley production (tons/acre) and price (\$/ton) data for Jefferson County, Oregon (1980-1994).



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

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Your Income</u>
Barley	2.75	ton	90.00	247.50	_____
Total GROSS Income				<u>247.50</u>	_____
<u>VARIABLE COST Description</u>	<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	52.27	52.27	_____
20-10-10-10	300 lb x 0.103 = 31.05				
46-0-0-0	131 lb x 0.12 = 15.72				
Custom Application	1 ac x 5.50 = 5.50				
Plant	3.63	4.37	15.74	23.75	_____
Barley Seed	120 lb x 0.131 = 15.74				
Irrigate	20.00	0.00	54.20	74.20	_____
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				
Weed Control	0.00	0.00	9.30	9.30	_____
Herbicide	1.5 pt x 1.587 = 2.38				
Herbicide	2 oz x 0.707 = 1.41				
Custom Application	1 ac x 5.50 = 5.50				
Harvest	7.26	22.32	0.00	29.58	_____
Haul	3.38	4.26	0.00	7.64	_____
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	_____
Interest Operating Capital	0.00	0.00	14.96	<u>14.96</u>	_____
Total MISCELLANEOUS				<u>46.40</u>	_____
Total VARIABLE COST				259.38	_____
GROSS INCOME minus VARIABLE COST				-12.18	_____
<u>FIXED COST Description</u>		<u>Unit</u>		<u>Total</u>	<u>Your Cost</u>
CASH Cost					
Machinery & Equipment Insurance		acre		4.33	_____
Land		acre		<u>100.00</u>	_____
Total CASH Cost				104.33	_____
NONCASH Cost					
Machinery & Equipment Interest & Depreciation		acre		<u>35.52</u>	_____
Total NONCASH Cost				35.52	_____
Total FIXED Cost				139.85	_____
Total of ALL Cost				399.53	_____
NET PROJECTED RETURNS				-152.03	_____
Break-even Price, Total Variable Cost				\$ 94.42 per ton	_____
Break-even Price, Total Cost				\$145.28 per ton	_____

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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-ton	6,000	3,600	1,200	90,000 mi	45,000 mi	563 mi
Pickup	1/2 ton	15,000	9,000	3,000	100,000 mi	50,000 mi	2,500 mi

Table 2. Machinery & Equipment Cost Calculations

Machine	Size	Costs per Hour or Mile					Costs per Acre			
		Variable		Fixed			Hours or Miles per Acre	Variable	Fixed	Total
		Fuel & Repair & Lube	Maint.	Depr. & Interest	Insurance	Total Cost				
Tractor	125 hp	\$6.76	\$8.19	\$10.96	\$0.85	\$26.75	0.86	\$12.88	\$10.17	\$23.05
Combine		9.37	46.44	18.38	1.20	75.38	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	13.30	0.20	0.50	2.16	2.66
Moldboard Plow	3-bottom	0.00	5.12	11.36	0.93	17.40	0.33	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	1.83	0.50	0.13	0.78	0.91
Farm Truck	2-ton	0.16	0.60	0.18	0.13	1.07	5.63	4.26	1.74	6.00
Pickup	1/2 ton	0.08	0.04	0.20	0.06	0.38	25.00	3.10	6.33	9.43
Total								\$45.89	\$39.83	\$85.71

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

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

Yield (Ton/acre)	\$70	\$80	\$90	\$100	\$110	\$120
1.5	-\$153	-\$138	-\$122	-\$107	-\$92	-\$77
2.0	-118	-98	-78	-58	-38	-18
2.5	-83	-58	-33	-8	17	42
3.0	-50	-20	11	41	72	102
3.5	-15	20	54	89	125	160
4.0	18	58	98	139	179	219

* Hauling costs are varied according to yield. Combining (harvest) costs are held constant at the 2.75 ton yield rate across all yield levels.

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

Yield (Ton/acre)	\$70	\$80	\$90	\$100	\$110	\$120
1.5	-\$292	-\$277	-\$261	-\$246	-\$231	-\$216
2.0	-257	-237	-217	-197	-177	-157
2.5	-223	-198	-173	-148	-123	-98
3.0	-190	-160	-129	-99	-68	-38
3.5	-155	-120	-86	-51	-15	20
4.0	-122	-82	-42	-1	39	79

* Hauling costs are varied according to yield. Combining (harvest) costs are held constant at the 2.75 ton yield rate across all yield levels.

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