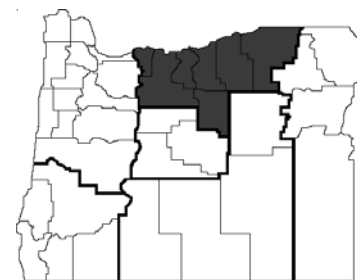


# Enterprise Budget

## Wheat, Winter (Conventional) Mid-Columbia Area 2003

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EM 8508, Revised August 2004

This enterprise budget estimates the typical costs associated with dryland wheat production in the Mid-Columbia area of Oregon. It should be used as a guide to estimate actual costs and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below. While the budget reports typical cultural practices used in dryland wheat production, this does not represent the only production method. October prices are used for all computations. Assistance provided by area producers is greatly appreciated.

### Cropping Pattern, Yield, and Price

This budget is based on a 3,000-acre farm with 1,500 acres in winter wheat production each year following 1,500 acres of summer fallow. Typical yield in this budget is 45 bushels per acre, the approximate average yield in the region for the past 15 years.

### Land

A land lease charge of \$50 per acre is included to represent the cost of leasing or owning land. While crop-share rental arrangements are common in the area, their terms are varied and difficult to generalize. However, you can easily modify this budget to represent a crop-share arrangement by multiplying the appropriate cost and return items by the tenant's percentage share. Record the results in the "Your Cost" column, then calculate new variable, fixed, and total costs of production.

### Labor

General labor is hired to drive trucks during harvest at a rate of \$11 per hour. Operator labor is charged \$12 per hour which includes workers' compensation, unemployment insurance, and other labor overhead expenses. All labor is treated as a cash, variable expense in this budget.

### Capital

Interest on operating capital is 6.75 percent and treated as a cash expense. One-third of the cash expenses are borrowed for a 6-month period. Interest on intermediate and long-term capital is 6 percent and treated as a noncash opportunity cost to the owner.

### Machinery and Equipment

The machinery and equipment used in the budget reflect the typical machinery complement of a 3,000-acre wheat farm in the Mid-Columbia area. A detailed breakdown of machinery values is shown in Table 1. Other machinery in Table 1 includes one set of older disc-type drills, trap wagon, disc, rotary hoe, and harrow. Estimated machinery cost calculations are in Table 2 and based on estimates from the American Society of Agricultural Engineers, assuming the machinery is half depreciated. Fuel costs are \$1.37 per gallon for gasoline and \$1.07 per gallon for off-road diesel fuel and \$1.26 for on-road diesel fuel.

### Operations

Tillage is assumed to be a conventional mulch tillage allowing for one year clean tillage in three as is common with most conservation farm plans. This is reflected by showing two-thirds of the fallowed acres conservation tilled and one-third of the acres treated with a moldboard plow. Nitrogen fertilizer is applied as anhydrous ammonia, and sulfur is applied once every 3 years. Both are applied during the fallow season prior to planting. For operations where surface residue management is needed for conservation purposes, tillage operations and costs may vary. Grain is harvested using a combine and two grain trucks, one new and one 10 years old. The older truck is licensed and used only during harvest. Grain is delivered to a local grain storage facility 12 miles from the farm. Six months of storage is assumed before final delivery to the Portland market. Some spot spraying for noxious weeds is included.

### Other

Miscellaneous charges are included to cover other labor costs (\$4.47 per acre), machinery (\$1.03 per acre), and accounting fees, office supplies, and other supplies (\$5 per acre). **Note that this budget assumes no participation in government programs. CRC insurance coverage is computed at the 75 percent level.**

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**ECONOMIC COSTS AND BREAK-EVEN PRICES**  
**Wheat, Winter (Conventional) Mid-Columbia Area 2003**  
(\$/acre) 3,000 acres, 45 bu/acre

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Inc/Bu</u>	<u>Total</u>	<u>Your Income</u>
Winter Wheat	45	bu	3.70	3.70	166.50	_____
Total GROSS Income					166.50	_____
<u>VARIABLE COSTS Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>\$/bu</u>	<u>Total</u>	<u>Your Cost</u>
Summer Fallow Establishment & Maintenance						
Moldboard Plow (0.33x)	0.79	1.89	0.00	0.06	2.67	_____
Chisel Plow (0.67x)	0.83	0.99	0.00	0.04	1.82	_____
Cultivate (1.5x)	1.16	2.21	0.00	0.07	3.37	_____
Rod Weed (2x)	1.21	2.32	0.00	0.08	3.53	_____
Crop Production						
Fertilizer	0.49	1.21	12.70	0.32	14.39	_____
Nitrogen	45 lb x 0.26 = 11.70					
Sulfur	10 lb x 0.30 = 1.00 (1 application every 3 years)					
Drill Seed (1.1x)	1.08	3.54	8.85	0.30	13.47	_____
Wheat Seed	75 lb x 0.118 = 8.85					
Herbicides	0.44	0.97	16.88	0.41	18.30	_____
Chemicals	1 ac x 12.00 = 12.00					
Custom Application	1 ac x 4.88 = 4.88					
Harvesting Operations						
Combine	1.05	1.66	0.00	0.06	2.71	_____
Hauling Grain	2.03	3.24	0.00	0.12	5.27	_____
Marketing						
Handling	45 bu x 0.11 = 4.95					
Storage	45 bu x 6 mo x 0.03 = 8.10					
Transportation	45 bu x 0.35 = 15.75					
Wheat Commission	45 bu x 0.03 = 1.35					
Other Charges						
Pickup & Truck Repairs, Fuel & Lube	0.00	3.39	0.00	0.08	3.39	_____
Other Machinery	0.00	1.03	0.00	0.02	1.03	_____
Miscellaneous	4.47	1.00	5.00	0.23	10.47	_____
Interest: Operating Capital (7.0% for 6 mo)	0.00	0.00	1.23	0.03	1.23	_____
Total VARIABLE COSTS	13.55	23.45	74.81	2.48	111.80	_____
GROSS INCOME minus VARIABLE COSTS				1.22	54.70	_____

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### ECONOMIC COSTS AND BREAK-EVEN PRICES Wheat, Winter (Conventional) Mid-Columbia Area 2003 (\$/acre) 3,000 acres, 45 bu/acre

<u>FIXED COSTS Description</u>	<u>Unit</u>	<u>\$/bu</u>	<u>Total</u>	<u>Your Cost</u>
<b>CASH Costs</b>				
Machinery & Equipment—Insurance	acre	0.09	4.23	_____
Pickup & Trucks—Insurance	acre	0.01	0.40	_____
Crop—Hail & Fire, CRC Insurance	acre	0.10	4.28	_____
Conservation Practices	acre	<u>0.01</u>	<u>0.30</u>	_____
Total Fixed CASH Costs		0.20	9.21	_____
<b>GROSS INCOME minus VARIABLE AND FIXED CASH COSTS</b>		1.01	45.49	_____
<b>NONCASH Costs</b>				
Machinery & Equipment—Depreciation, Int, & Housing	acre	0.80	35.95	_____
Pickup & Trucks—Depreciation, Interest, & Housing	acre	0.12	5.34	_____
Other Machinery—Depreciation & Interest	acre	0.06	2.74	_____
Land Charge	acre	<u>1.11</u>	<u>50.00</u>	_____
Total NONCASH Costs		2.09	94.03	_____
<b>Total FIXED COSTS</b>		2.29	103.24	_____
<b>TOTAL OF ALL COSTS PER ACRE</b>		4.78	215.40	_____
<b>NET PROJECTED RETURNS</b>		-1.08	-48.54	_____

**Table 1. Machinery Cost Assumptions**

<u>Machine</u>	<u>Size</u>	<u>Current Market Value</u>	<u>Hours or Miles of Annual Use</u>	<u>Expected Life (yrs)</u>
Tractor, Crawler	Crawler Tractor	\$166,000	755	20
Combine	30' Hillside	240,000	131	10
Moldboard Plow	10–16"	28,000	98	20
Chisel Plow	25'	18,000	104	15
Cultivate	40'	21,600	145	15
Field Sprayer	60'	23,000	61	15
Rod Weed	48'	19,200	152	15
Grain Drills	36'	35,100	135	15
Pickup	3/4-ton 4X4, new	28,000	14,000	10
Truck	2-ton	52,000	3,000	20
Truck	2-ton, older	18,000	2,400	10
Other Machinery		16,000	N/A	10

## EM 8508 Enterprise Budget

**Table 2. Machinery Cost Calculations**

Machine	Size	— Variable —		— Fixed —		Total Cost
		Fuel & Lube	Repair & Maint.	Depr. & Interest	Insurance	
<b>Costs per Hour</b>						
Tractor, Crawler	Crawler Tractor	\$7.38	\$7.52	\$16.92	\$1.98	\$33.80
Combine	30' Hillside	6.15	12.91	216.77	16.50	252.33
Moldboard Plow	10–16"	0.00	13.93	21.26	1.71	36.90
Chisel Plow	25'	0.00	6.01	14.58	1.04	21.63
Cultivate	40'	0.00	7.96	12.50	0.89	21.35
Field Sprayer	60'	0.00	9.17	34.51	2.28	45.95
Rod Weed	48'	0.00	8.00	10.63	0.76	19.39
Grain Drills	36'	0.00	24.41	22.01	1.56	47.98
<b>Costs per Mile</b>						
Pickup	3/4-ton 4X4, new	0.18	0.08	0.20	0.02	0.48
Truck	2-ton	0.36	0.87	1.08	0.08	2.40
Truck	2-ton, older	0.36	0.12	0.67	0.03	1.19
<b>Costs per Acre</b>						
Other Machinery		0.00	1.03	2.74	1.21	4.98

**Table 3. Estimated Cost of Each Operation with Power-Unit**

Operation	Tractor	Miles per Hour	Acres per Hour	Labor Costs per Acre	Machine Costs		Total Cost per Acre
					Variable Cost per Acre	Fixed Cost per Acre	
Combine	N/A	4.5	11.46	\$1.05	1.66	20.36	\$23.07
Moldboard Plow	Crawler	4.0	5.04	2.38	5.72	8.30	16.40
Chisel Plow	Crawler	4.0	9.70	1.24	2.16	3.56	6.95
Cultivate	Crawler	4.0	15.52	0.77	1.47	2.08	4.33
Fertilizer Appl. (Rental)	Crawler	4.0	24.73	0.49	0.60	0.76	1.85
Field Sprayer	Crawler	4.0	24.73	0.44	0.97	2.25	3.67
Rod Weed	Crawler	4.0	19.78	0.61	1.16	1.53	3.30
Grain Drills	Crawler	4.0	12.22	0.98	3.22	3.48	7.68

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**Table 4. Estimated per-Acre Returns Over Cash Costs at Varying Yields and Prices**

Price per Bu	Bushels per Acre						
	35	45	55	66	74	80	86
\$ 3.00	-\$16	\$14	\$44	\$77	\$101	\$119	\$137
\$ 3.25	-7	25	58	93	119	139	158
\$ 3.50	1	36	71	110	138	159	180
\$ 3.75	10	48	85	126	156	179	201
\$ 4.00	19	59	99	143	175	199	223
\$ 4.25	28	70	113	159	193	219	244
\$ 4.50	36	81	126	176	212	239	266
\$ 4.75	45	93	140	192	230	259	287

**Table 5. Estimated per-Acre Returns Over Total Costs at Varying Yields and Prices**

Price per Bu	Bushels per Acre						
	35	45	55	66	74	80	86
\$ 3.00	-\$110	-\$80	-\$50	-\$17	\$7	\$25	\$43
\$ 3.25	-101	-69	-36	-1	25	45	64
\$ 3.50	-93	-58	-23	16	44	65	86
\$ 3.75	-84	-46	-9	32	62	85	107
\$ 4.00	-75	-35	5	49	81	105	129
\$ 4.25	-66	-24	19	65	99	125	150
\$ 4.50	-58	-13	32	82	118	145	172
\$ 4.75	-49	-1	46	98	136	165	193

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