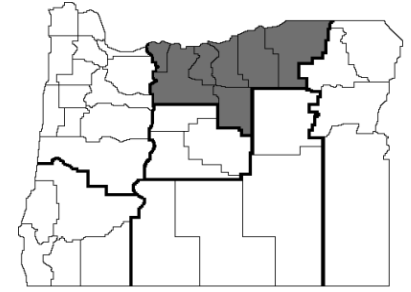


# Enterprise Budget

## Camelina (Spring) Following Fallow, Conservation Tillage, Less than 14-Inch Precipitation Zone, North Central Region

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This enterprise budget estimates the typical costs and returns of producing spring camelina using conservation tillage production practices in a less than 14-inch precipitation zone. It should be used as a guide to estimate actual costs and returns and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below and for winter wheat assumptions refer to *Enterprise Budget, Wheat (Winter) Following Fallow, Conservation Tillage, Less Than 12-inch Precipitation Zone, North Central Region, AEB 0033, revised October 2012*. Assistance provided by area producers and agribusinesses is greatly appreciated.

### Cropping Pattern

This budget is based on a 3,800-acre farm with 1,600 acres in winter wheat and 300 acres in spring camelina production each year following 1,900 acres of fallow. The average annual precipitation is less than 14-inches. Typical yield in this budget is 1,200 pounds per acre, the approximate average yield in the region.

### Land

A land lease charge of \$48 per acre is included to represent the cost of leasing or owning land. This correlates to the payment a landowner would receive under a 20 percent crop-share lease, the most common arrangement for camelina in this area.

### Labor

Typically tractor drivers and harvest labor cost approximately \$12 per hour, all of which include social security, workers' compensation, unemployment insurance, and other labor overhead expenses. For this study, owner labor is valued at the same rate as tractor driver rates, and all labor is assumed to be a cash cost. Labor hours are calculated based on machinery hours.

### Capital

Interest on operating capital (5 percent) is treated as a cash expense. One-third of the cash expenses are borrowed for 12-months. Interest on intermediate (6 percent) and long-term capital (4 percent) is treated as a non-cash opportunity cost to the owner.

### Machinery and Equipment

The machinery and equipment used in this budget are sufficient for a 3,800-acre farm in a less than 14-inch

precipitation zone. The machinery and equipment hours reflect producing both camelina and winter wheat. A detailed breakdown of machinery values is shown in Table 2. Note: Precision technologies, such as GPS auto-steer and spray boom controller, are included in this budget. They increase machine efficiencies, lower labor, machinery and equipment hours. Estimated machinery costs are shown in Table 3. The machinery costs are estimated based on the total farm use of the machinery. Gasoline costs \$3.80, on-road diesel \$4.00 and off-road diesel \$3.46 per gallon. Table 4 shows the labor, variable, and fixed costs for certain machinery operations.

### Operations

The cultural operations are listed approximately in the order in which they are performed. A 350-hp crawler tractor is used for pulling the bank-out wagon, chisel, rotary harrow, field cultivator, sprayer and drill. A combine is used to harvest both winter wheat and camelina. The grain is hauled to Pendleton. There is a limited selection of farm chemicals available for in-crop use with camelina. A miscellaneous charge of \$10 per acre is added, which includes additional labor, repairs and maintenance, and materials not included in field operations.

### Results

The price received for camelina is \$0.20 per pound, the average received for production delivered to Pendleton. Variable cash production costs are \$144 per acre, resulting in a net return above variable cash costs of \$96 per acre. Total costs are \$248 per acre when all costs are considered. A break-even price of \$0.12 per pound would be required to cover variable cash costs, and \$0.21 per pound to cover total costs. Tables 5 and 6 show the returns per acre for cash and total costs at various yields and prices.

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**Table 1. Camelina Following Fallow, Conservation Tillage, Less than 14-inch of Precipitation, \$/acre economic costs and returns.**

<b>GROSS INCOME</b>		<b>Quantity</b>	<b>Unit</b>	<b>\$/Unit</b>	<b>Total</b>	<b>Price/Lb</b>	<b>Your Income</b>	
Camelina		1,200	pounds	0.20	<u>\$240.00</u>	<u>\$0.200</u>	_____	
Total <b>gross income</b>					\$240.00	\$0.200	_____	
<b>VARIABLE CASH COSTS</b>		<b>Description</b>	<b>Labor</b>	<b>Machinery</b>	<b>Materials</b>	<b>Total</b>	<b>Cost/Lb</b>	<b>Your Cost</b>
Summer fallow establishment & maintenance								
	Rotary mower	1.00 appl.	1.06	5.61	0.00	6.67	0.01	_____
	Chisel plow	1.00 appl.	0.69	4.61	0.00	5.29	0.00	_____
	Culti-weeder	2.00 appl.	0.87	5.58	0.00	6.45	0.01	_____
	Herbicides	2.00 appl.	0.58	4.51	22.00	27.09	0.02	_____
	Chemicals	\$ 11.00 /acre						_____
Crop Production								
	Drill	1.00 appl.	0.86	5.33	49.00	55.19	\$0.046	_____
	Seed	6.00 lbs						_____
		\$ 2.00 /lb						_____
	Nitrogen	50.0 lbs						_____
		\$ 0.60 /lb						_____
	Sulfur	10.0 lbs						_____
		\$ 0.70 /lb						_____
Harvesting Operations								
	Combine		1.37	10.79	0.00	12.17	\$0.010	_____
	Transportation to Pendleton	\$ 0.61 /cwt	0.00	0.00	7.31	7.31	\$0.006	_____
Other Charges								
	Pickup, truck & ATV repairs, fuel & lube		0.00	9.81	0.00	9.81	\$0.008	_____
	Precision technologies		0.00	0.57	0.00	0.57	\$0.000	_____
	Other machinery		0.00	0.42	0.00	0.42	\$0.000	_____
	Miscellaneous		4.47	1.00	5.00	10.47	\$0.009	_____
	Interest: operating capital	12.00 mons	<u>0.00</u>	<u>0.00</u>	<u>2.33</u>	<u>2.33</u>	<u>\$0.002</u>	_____
Total <b>variable</b> cash costs			<b>\$9.90</b>	<b>\$48.23</b>	<b>\$85.64</b>	<b>\$143.77</b>	<b>\$0.120</b>	_____
Total <b>gross income</b> minus <b>variable</b> cash costs						<b>\$96.23</b>	<b>\$0.080</b>	_____
<b>FIXED NON-CASH COSTS</b>					<b>Unit</b>	<b>Total</b>	<b>Cost/Lb</b>	<b>Your Cost</b>
Machinery and equipment - depreciation & interest					acre	\$47.02	\$0.039	_____
Pickup, truck & ATV - depreciation & interest					acre	9.36	\$0.008	_____
Land interest charge					acre	<u>48.00</u>	<u>\$0.040</u>	_____
Total <b>fixed</b> costs						<b>\$104.38</b>	<b>\$0.087</b>	_____
<b>Total of all costs per acre</b>						<b>\$248.15</b>	<b>\$0.207</b>	_____
<b>Net projected returns</b>						<b>(\$8.15)</b>	<b>(\$0.007)</b>	_____

Table 2. Machinery Cost Assumptions

Machine	Size	Current Market Value	Hours or Miles of Annual	Expected Life (Years)
Tractor, rubber tracked	350 hp	\$166,000	862	15
Combine, used	30' Hillside	358,000	126	10
Rotary mower	26'	53,000	167	15
Chisel plow	40'	53,000	109	15
Field sprayer	90'	55,000	92	15
Cultivator	45'	54,500	0	15
Culti-weeder	60'	47,000	137	15
Grain drills	36'	35,100	136	15
Bank out wagon	850 bushel capacity	49,000	139	20
Pickup, two	3/4 ton 4X4, new	40,000	15,000	10
Truck & trailer	Semi, used	52,000	3,000	10
Truck	2 1/2 ton, older	18,000	2,400	10
ATV	4-wheeler new	9,500	3,000	5
Precision technologies	GPS auto-steer, etc.	21,550	N/A	7
Other machinery		16,000	N/A	10

Table 3. Machinery Cost Calculations

Machine	Size	---- Variable Costs ----		---- Fixed Costs ----		Total Cost
		Fuel & Lube	Repairs & Maint.	Depreciation	Interest	
----- Costs per Hour -----						
Tractor, rubber tracked	350 hp	\$39.79	\$11.12	\$10.34	\$11.56	\$72.81
Combine, used	30' Hillside	29.05	65.16	230.38	170.44	495.02
Rotary mower	26'	0.00	12.72	19.08	18.99	50.79
Chisel plow	40'	0.00	29.52	29.35	29.22	88.08
Field sprayer	90'	0.00	42.68	36.16	36.00	114.85
Culti-weeder	60'	0.00	26.18	20.60	20.51	67.29
Grain drills	36'	0.00	23.48	15.55	15.48	54.51
Bank out wagon	850 bushel capacity	0.00	11.76	15.98	1.55	29.28
----- Costs per Mile -----						
Pickup, costs per vehicle	3/4 ton 4X4, new	\$0.44	\$0.21	\$0.22	\$0.16	\$1.02
Truck & trailer	Semi, used	0.92	0.83	1.43	1.04	4.22
Truck	2 1/2 ton, older	0.87	0.29	0.62	0.45	2.23
ATV	4-wheeler new	0.29	0.02	0.52	0.19	1.02
----- Costs per Acre -----						
Precision technologies	GPS auto-steer, etc.	\$0.00	\$0.57	\$1.62	\$0.68	\$2.87
Other machinery		0.00	0.42	0.84	0.51	1.77

Table 4. Estimated Cost of Each Operation with Power-Unit.

Operation	Tractor	Miles per Hour	Acres per Hour	--- Machine Costs ---			Total Cost per Acre
				Labor Cost per Acre	Variable Cost per Acre	Fixed Cost per Acre	
Combine, used	N/A	3.0	8.7	\$1.37	\$10.79	\$45.92	\$58.09
Rotary mower	Tractor, rubber tracked	4.0	11.3	1.06	5.61	5.28	11.95
Chisel plow	Tractor, rubber tracked	4.0	17.5	0.69	4.61	4.61	9.90
Field sprayer	Tractor, rubber tracked	4.0	41.5	0.29	2.26	2.27	4.82
Culti-weeder	Tractor, rubber tracked	4.0	27.6	0.43	2.79	2.28	5.50
Grain drills	Tractor, rubber tracked	4.0	14.0	0.86	5.33	3.79	9.98

Table 5. Estimated Per Acre Returns Over Cash Costs at Varying Yields and Prices.

Price/Pound	----- Pounds per Acre -----						
	600	800	1,000	1,200	1,400	1,600	1,800
\$ 0.12	\$ (71.77)	\$ (47.77)	\$ (23.77)	\$ 0.23	\$ 24.23	\$ 48.23	\$ 72.23
\$ 0.15	\$ (53.77)	\$ (23.77)	\$ 6.23	\$ 36.23	\$ 66.23	\$ 96.23	\$ 126.23
\$ 0.17	\$ (41.77)	\$ (7.77)	\$ 26.23	\$ 60.23	\$ 94.23	\$ 128.23	\$ 162.23
\$ 0.20	\$ (23.77)	\$ 16.23	\$ 56.23	\$ 96.23	\$ 136.23	\$ 176.23	\$ 216.23
\$ 0.23	\$ (5.77)	\$ 40.23	\$ 86.23	\$ 132.23	\$ 178.23	\$ 224.23	\$ 270.23
\$ 0.21	\$ (17.77)	\$ 24.23	\$ 66.23	\$ 108.23	\$ 150.23	\$ 192.23	\$ 234.23
\$ 0.24	\$ 0.23	\$ 48.23	\$ 96.23	\$ 144.23	\$ 192.23	\$ 240.23	\$ 288.23

Table 6. Estimated Per Acre Returns Over Total Costs at Varying Yields and Prices.

Price/Pound	----- Pounds per Acre -----						
	600	800	1,000	1,200	1,400	1,600	1,800
\$ 0.12	\$ (176.15)	\$ (152.15)	\$ (128.15)	\$ (104.15)	\$ (80.15)	\$ (56.15)	\$ (32.15)
\$ 0.15	\$ (158.15)	\$ (128.15)	\$ (98.15)	\$ (68.15)	\$ (38.15)	\$ (8.15)	\$ 21.85
\$ 0.17	\$ (146.15)	\$ (112.15)	\$ (78.15)	\$ (44.15)	\$ (10.15)	\$ 23.85	\$ 57.85
\$ 0.20	\$ (128.15)	\$ (88.15)	\$ (48.15)	\$ (8.15)	\$ 31.85	\$ 71.85	\$ 111.85
\$ 0.23	\$ (110.15)	\$ (64.15)	\$ (18.15)	\$ 27.85	\$ 73.85	\$ 119.85	\$ 165.85
\$ 0.21	\$ (122.15)	\$ (80.15)	\$ (38.15)	\$ 3.85	\$ 45.85	\$ 87.85	\$ 129.85
\$ 0.24	\$ (104.15)	\$ (56.15)	\$ (8.15)	\$ 39.85	\$ 87.85	\$ 135.85	\$ 183.85