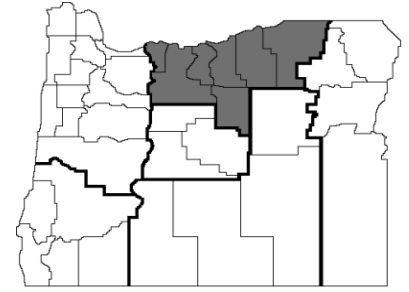


Enterprise Budget

Camelina (Spring) Following Winter Wheat, Conservation Tillage, 14-18 Inch Precipitation Zone, North Central Region

Luke Stein¹, Clark Seavert¹, Sandy Macnab² and Steven Petrie³

¹Graduate student and Agricultural Economist, Department of Applied Economics, ²Extension Cereal Grains, Sherman & Wasco Counties, Oregon State University, and ³Director of Agronomic Services for Yara North America.



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This enterprise budget estimates the typical costs and returns of producing spring camelina using conservation tillage production practices in a 14-18 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, 12-18 Inch Precipitation Zone, North Central Region, AEB 0035, 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, 300 acres in spring camelina and 1,900 acres of fallow; a typical crop rotation would be winter wheat, spring camelina and fallow. The average annual precipitation is 14-18 inches. Typical yield in this budget is 1,400 pounds per acre, the approximate average yield in the region.

Land

A land lease charge of \$56 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 12-18 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 485-hp crawler tractor is used for pulling the bank-out wagon, chisel, rotary mower, 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 \$142 per acre, resulting in a net return above variable cash costs of \$138 per acre. Total costs are \$255 per acre when all costs are considered. A break-even price of \$0.10 per pound would be required to cover variable cash costs, and \$0.18 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 Winter Wheat, Conservation Tillage, 14-18 inches of Precipitation, \$/acre economic costs and returns.

GROSS INCOME		Quantity	Unit	\$/Unit	Total	Price/Lb	Your Income	
Camelina		1,400	pounds	0.20	<u>\$280.00</u>	<u>\$0.200</u>	_____	
Total gross income					\$280.00	\$0.200	_____	
VARIABLE CASH COSTS		Description	Labor	Machinery	Materials	Total	Cost/Lb	Your Cost
Summer fallow establishment & maintenance								
Rotary mower	1.00	appl.	1.06	5.81	0.00	6.87	0.00	_____
Chisel plow	1.00	appl.	0.69	4.74	0.00	5.43	0.00	_____
Culti-weeder	2.00	appl.	0.87	5.74	0.00	6.61	0.00	_____
Herbicides	2.00	appl.	0.58	4.62	22.00	27.20	0.02	_____
Chemicals	\$ 11.00	/acre						_____
Crop Production								
Drill seed	1.00	appl.	0.86	5.49	55.00	61.35	\$0.044	_____
Seed	6.00	lbs						_____
	\$ 2.00	/lb						_____
Nitrogen	60.0	lbs						_____
	\$ 0.60	/lb						_____
Sulfur	10.0	lbs						_____
	\$ 0.70	/lb						_____
Harvesting Operations								
Combine			1.37	5.93	0.00	7.31	\$0.005	_____
Transportation to Pendleton	\$ 0.24	/cwt	0.00	0.00	3.38	3.38	\$0.002	_____
Other Charges								
Pickup, truck & ATV repairs, fuel & lube			0.00	9.81	0.00	9.81	\$0.007	_____
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	\$0.007	_____
Interest: operating capital	12.00	mons	<u>0.00</u>	<u>0.00</u>	<u>2.30</u>	<u>2.30</u>	<u>\$0.002</u>	_____
Total variable cash costs			\$9.90	\$44.14	\$87.68	\$141.72	\$0.101	_____
Total gross income minus variable cash costs						\$138.28	\$0.099	_____
FIXED NON-CASH COSTS					Unit	Total	Cost/Lb	Your Cost
Machinery and equipment - depreciation & interest					acre	\$47.90	\$0.034	_____
Pickup, truck & ATV - depreciation & interest					acre	9.36	\$0.007	_____
Land interest charge					acre	<u>56.00</u>	<u>\$0.040</u>	_____
Total fixed costs						\$113.26	\$0.081	_____
Total of all costs per acre						\$254.98	\$0.182	_____
Net projected returns						\$25.02	\$0.018	_____

Table 2. Machinery Cost Assumptions

Machine	Size	Current Market Value	Hours or Miles of Annual	Expected Life (Years)
Tractor, rubber tracked	485 hp	\$200,000	862	7
Combine, used	30' Hillside	125,000	126	5
Rotary mower	26'	53,000	167	15
Chisel plow	40'	53,000	109	7
Field sprayer	90'	55,000	92	15
Culti-weeder	60'	47,000	137	15
Grain drills	36'	35,100	136	7
Bank out wagon	850 bushel capacity	49,000	139	10
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	485 hp	\$39.79	\$13.40	\$26.70	\$13.93	\$93.81
Combine, used	30' Hillside	29.05	22.75	160.88	59.51	272.19
Rotary mower	26'	0.00	12.72	19.08	18.99	50.79
Chisel plow	40'	0.00	29.52	62.89	29.22	121.62
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	33.32	15.48	72.28
Bank out wagon	850 bushel capacity	0.00	11.76	31.95	1.55	45.26
----- 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	\$5.93	\$25.25	\$32.56
Rotary mower	Tractor, rubber tracked	4.0	11.3	1.06	5.81	6.93	13.80
Chisel plow	Tractor, rubber tracked	4.0	17.5	0.69	4.74	7.60	13.03
Field sprayer	Tractor, rubber tracked	4.0	41.5	0.29	2.31	2.72	4.82
Culti-weeder	Tractor, rubber tracked	4.0	27.6	0.43	2.87	2.96	6.26
Grain drills	Tractor, rubber tracked	4.0	14.0	0.86	5.49	6.40	12.75

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

Price/Pound	Pounds per Acre						
	800	1,000	1,200	1,400	1,600	1,800	2,000
\$ 0.06	\$ (93.72)	\$ (81.72)	\$ (69.72)	\$ (57.72)	\$ (45.72)	\$ (33.72)	\$ (21.72)
\$ 0.09	\$ (69.72)	\$ (51.72)	\$ (33.72)	\$ (15.72)	\$ 2.28	\$ 20.28	\$ 38.28
\$ 0.17	\$ (5.72)	\$ 28.28	\$ 62.28	\$ 96.28	\$ 130.28	\$ 164.28	\$ 198.28
\$ 0.20	\$ 18.28	\$ 58.28	\$ 98.28	\$ 138.28	\$ 178.28	\$ 218.28	\$ 258.28
\$ 0.23	\$ 42.28	\$ 88.28	\$ 134.28	\$ 180.28	\$ 226.28	\$ 272.28	\$ 318.28
\$ 0.21	\$ 26.28	\$ 68.28	\$ 110.28	\$ 152.28	\$ 194.28	\$ 236.28	\$ 278.28
\$ 0.24	\$ 50.28	\$ 98.28	\$ 146.28	\$ 194.28	\$ 242.28	\$ 290.28	\$ 338.28

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

Price/Pound	Pounds per Acre						
	800	1,000	1,200	1,400	1,600	1,800	2,000
\$ 0.06	\$ (206.98)	\$ (194.98)	\$ (182.98)	\$ (170.98)	\$ (158.98)	\$ (146.98)	\$ (134.98)
\$ 0.09	\$ (182.98)	\$ (164.98)	\$ (146.98)	\$ (128.98)	\$ (110.98)	\$ (92.98)	\$ (74.98)
\$ 0.17	\$ (118.98)	\$ (84.98)	\$ (50.98)	\$ (16.98)	\$ 17.02	\$ 51.02	\$ 85.02
\$ 0.20	\$ (94.98)	\$ (54.98)	\$ (14.98)	\$ 25.02	\$ 65.02	\$ 105.02	\$ 145.02
\$ 0.23	\$ (70.98)	\$ (24.98)	\$ 21.02	\$ 67.02	\$ 113.02	\$ 159.02	\$ 205.02
\$ 0.21	\$ (86.98)	\$ (44.98)	\$ (2.98)	\$ 39.02	\$ 81.02	\$ 123.02	\$ 165.02
\$ 0.24	\$ (62.98)	\$ (14.98)	\$ 33.02	\$ 81.02	\$ 129.02	\$ 177.02	\$ 225.02