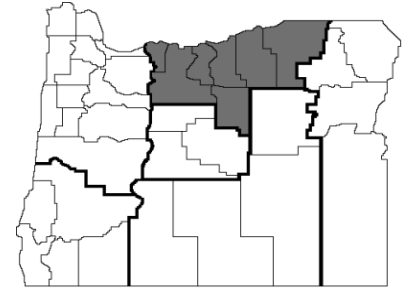


Enterprise Budget

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

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This enterprise budget estimates the typical costs and returns of producing spring camelina using direct seed 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, Direct Seed, 12-18 Inch Precipitation Zone, North Central Region, AEB 0036, 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 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 14-18 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, sprayer and air seeder. 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 \$94 per acre, resulting in a net return above variable cash costs of \$186 per acre. Total costs are \$211 per acre when all costs are considered. A break-even price of \$0.07 per pound would be required to cover variable cash costs, and \$0.15 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, Direct Seed, 14-18 inches Precipitation Zone, \$/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
Fallow establishment & maintenance								
	Rotary mower	1.00 appl.	1.06	5.81	0.00	6.87	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.	\$0.61	\$5.55	\$55.00	\$61.16	\$0.044	_____
	Seed	6.00 lbs						_____
		\$ 2.00 /lb						_____
	Nitrogen	60.00 lbs						_____
		\$ 0.60 /lb						_____
	Sulfur	10.00 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	_____
	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>\$1.53</u>	<u>\$1.53</u>	<u>\$0.001</u>	_____
Total variable costs			\$6.46	\$22.72	\$64.91	\$94.08	\$0.067	_____
Total gross income minus variable costs						\$185.92	\$0.133	_____
FIXED NON-CASH COSTS					Unit	Total	Cost/lb	Your Cost
Machinery and equipment - depreciation & interest					acre	\$51.37	\$0.037	_____
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						\$116.73	\$0.083	_____
Total of all costs per acre						\$210.81	\$0.151	_____
Net projected returns						\$69.19	\$0.049	_____

Table 2. Machinery Cost Assumptions

Machine	Size	Current Market Value	Hours or Miles of Annual Use	Expected Life (Years)
Tractor, rubber tracked	485 hp	\$200,000	572	10
Combine, used	30' Hillside	125,000	126	5
Rotary mower	26'	53,000	167	15
Field sprayer	90'	55,000	169	15
Air seeder	45'	145,000	97	7
Bank out wagon	850 bushel capacity	49,000	139	10
Pickup	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	\$28.16	\$20.99	\$102.34
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
Field sprayer	90'	0.00	42.68	19.63	19.55	81.86
Air seeder	45'	0.00	55.83	193.55	89.92	339.30
Bank out wagon	850 bushel capacity	0.00	11.76	31.95	21.21	64.92
----- Costs per Mile -----						
Pickup	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	7.69	14.55
Field sprayer	Tractor, rubber tracked	4.0	41.5	0.29	2.31	2.13	4.73
Air seeder	Tractor, rubber tracked	4.5	19.6	0.61	5.55	16.94	23.10

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	(\$46.08)	(\$34.08)	(\$22.08)	(\$10.08)	\$1.92	\$13.92	\$25.92
\$ 0.09	(\$22.08)	(\$4.08)	\$13.92	\$31.92	\$49.92	\$67.92	\$85.92
\$ 0.17	\$41.92	\$75.92	\$109.92	\$143.92	\$177.92	\$211.92	\$245.92
\$ 0.20	\$65.92	\$105.92	\$145.92	\$185.92	\$225.92	\$265.92	\$305.92
\$ 0.23	\$89.92	\$135.92	\$181.92	\$227.92	\$273.92	\$319.92	\$365.92
\$ 0.21	\$73.92	\$115.92	\$157.92	\$199.92	\$241.92	\$283.92	\$325.92
\$ 0.24	\$97.92	\$145.92	\$193.92	\$241.92	\$289.92	\$337.92	\$385.92

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	(\$162.81)	(\$150.81)	(\$138.81)	(\$126.81)	(\$114.81)	(\$102.81)	(\$90.81)
\$ 0.09	(\$138.81)	(\$120.81)	(\$102.81)	(\$84.81)	(\$66.81)	(\$48.81)	(\$30.81)
\$ 0.17	(\$74.81)	(\$40.81)	(\$6.81)	\$27.19	\$61.19	\$95.19	\$129.19
\$ 0.20	(\$50.81)	(\$10.81)	\$29.19	\$69.19	\$109.19	\$149.19	\$189.19
\$ 0.23	(\$26.81)	\$19.19	\$65.19	\$111.19	\$157.19	\$203.19	\$249.19
\$ 0.21	(\$42.81)	(\$0.81)	\$41.19	\$83.19	\$125.19	\$167.19	\$209.19
\$ 0.24	(\$18.81)	\$29.19	\$77.19	\$125.19	\$173.19	\$221.19	\$269.19