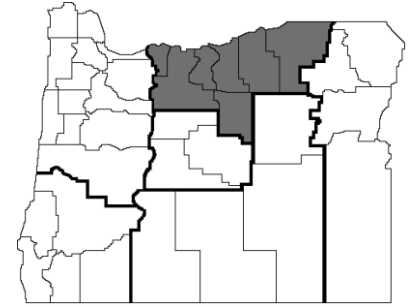


# Enterprise Budget

## Canola (Winter) Following Winter Wheat, Conservation Tillage, Annual Cropping System, 18-24 Inch Precipitation Zone, North Central Region

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This enterprise budget estimates the typical costs and returns of producing winter canola followed by winter wheat rotation in an 18-24 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. Assistance provided by area producers and agribusinesses is greatly appreciated.

### Cropping Pattern

This budget is based on a 2,000-acre farm with 1,000 acres in winter canola production each year following 1,000 acres of winter wheat. The average annual rainfall is 18 to 24-inches. Typical yield in this budget is 2,500 pounds per acre, the approximate average yield in the region.

### Land

A land lease charge of \$100 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 canola in this area.

### Labor

Typically tractor drivers and harvest labor cost approximately \$12 per hour, all of which include social security, worker's 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 costs. 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 is sufficient for a 2,000-acre farm in an 18-24 inch precipitation zone. The machinery and equipment hours reflect producing both canola and winter wheat, therefore

hours may be higher for canola than wheat reflecting the additional operations required after a winter wheat crop before planting canola. 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, which increase machine efficiencies and lowers labor and 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 \$4.02, on-road diesel \$4.10 and off-road diesel \$3.55 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, field sprayer, and drill. A combine is used to harvest both winter wheat and canola. The grain is hauled to Pendleton. A miscellaneous charge of \$10 per acre, which includes additional labor, repairs and maintenance, and materials not included in field operations.

### Results

The price received for winter canola, \$0.20 per pound, the average delivered to a processor in the Pendleton area. Variable cash production costs were \$179 per acre, giving a net return above variable cash costs of \$321 per acre. Total costs were \$309 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 \$0.12 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. Canola (Winter) Following Winter Wheat, Conservation Tillage, Annual Cropping, Over 18-inches 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>	
Canola		2,500	pounds	0.20	<u>\$500.00</u>	<u>\$0.200</u>	_____	
Total <b>gross</b> income					\$500.00	\$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>
Land Preparation								
	Chisel plow	1.00 appl.	0.69	4.85	0.00	5.53	0.002	_____
	Rotary harrow	4.00 appl.	2.08	11.63	0.00	13.71	0.005	_____
	Cultivate	1.00 appl.	0.61	4.01	0.00	4.62	0.002	_____
Crop Production								
	Drill seed	1.00 appl.	0.86	5.56	89.70	96.12	0.038	_____
	Canola seed	8.00 lbs						
	Seed	\$ 11.00 /lb						
	Nitrogen	100.0 lbs						
		\$ 0.60 /lb						
	Sulfur	15.0 lbs						
		\$ 0.70 /lb						
	Herbicides	1.00 appl.	0.29	2.34	11.00	13.63	0.005	_____
	Chemicals	\$ 11.00 /acre						
Harvesting Operations								
	Swathing/Pushing		0.88	2.68	0.00	3.56	0.001	_____
	Combine Canola		0.69	3.01	0.00	3.70	0.001	_____
	Hauling Canola		2.27	4.12	0.00	6.39	0.003	_____
Other Charges								
	Pickup & truck repairs, fuel & lube		0.00	17.29	0.00	17.29	0.007	_____
	Precision technologies		0.00	0.54	0.00	0.54	0.000	_____
	Other machinery		0.00	0.40	0.00	0.40	0.000	_____
	Miscellaneous		4.47	1.00	5.00	10.47	0.004	_____
	Interest: operating capital	12.00 mons	<u>0.00</u>	<u>0.00</u>	<u>2.90</u>	<u>2.90</u>	<u>0.001</u>	_____
Total <b>variable</b> cash costs			<b>\$12.84</b>	<b>\$57.42</b>	<b>\$108.60</b>	<b>\$178.86</b>	<b>\$0.07</b>	
Total <b>gross income</b> minus <b>variable</b> cash costs						<b>\$321.14</b>	<b>\$0.13</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	\$23.19	\$0.009	_____
Pickup, truck & ATV - depreciation & interest					acre	6.95	0.003	_____
Land interest charge					acre	<u>100.00</u>	<u>0.040</u>	_____
Total <b>fixed</b> costs						<b>\$130.14</b>	<b>\$0.05</b>	_____
<b>Total of all costs per acre</b>						<b>\$309.01</b>	<b>\$0.12</b>	_____
<b>Net projected returns</b>						<b>\$190.99</b>	<b>\$0.08</b>	=====

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	705	15
Combine, used	30' Hillside	125,000	115	10
Swather	16'	50,000	74	10
Chisel plow	40'	54,500	115	15
Cultivator	45'	44,000	51	15
Rotary mower	50'	53,000	174	15
Field sprayer	90'	55,000	96	15
Grain drills	36'	35,100	143	15
Bank out wagon	850 bushel capacity	49,000	126	20
Pickup, two	3/4 ton 4X4, new	80,000	30,000	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	\$40.83	\$13.40	\$15.23	\$17.02	\$86.48
Combine, used	30' Hillside	29.80	22.75	88.48	65.46	206.50
Swather	16'	16.33	20.05	55.06	40.73	132.17
Chisel plow	40'	0.00	30.36	28.67	28.54	87.57
Cultivator	45'	0.00	24.51	52.08	51.85	128.43
Rotary mower	50'	0.00	12.72	18.39	18.31	49.42
Field sprayer	90'	0.00	42.68	34.36	34.20	111.24
Grain drills	36'	0.00	23.48	14.77	14.71	52.96
Bank out wagon	850 bushel capacity	0.00	11.76	17.57	1.47	30.80
----- Costs per Mile -----						
Pickup, costs per vehicle	3/4 ton 4X4, new	\$0.46	\$0.42	\$0.22	\$0.16	\$1.26
Truck & trailer	Semi, used	0.94	0.83	1.43	1.04	4.24
Truck	2 1/2 ton, older	0.92	0.29	0.62	0.45	2.28
ATV	4-wheeler new	3.85	0.02	0.52	0.19	4.58
----- Costs per Acre -----						
Precision technologies	GPS auto-steer, etc.	\$0.00	\$0.54	\$1.54	\$0.65	\$2.72
Other machinery		0.00	0.40	0.80	0.48	1.68

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

Operation	Tractor	Miles per Hour	Acres per Hour	Labor Cost per Acre	--- Machine Costs ---			Total Cost per Acre
					Variable Cost per Acre	Fixed Cost per Acre		
Combine, used	N/A	6.0	17.46	\$0.69	\$3.01	\$8.82	\$12.52	
Swather	N/A	10.0	13.58	0.88	2.68	7.06	10.62	
Chisel plow	Tractor, rubber tracked	4.0	17.46	0.69	4.85	5.12	10.66	
Cultivator	Tractor, rubber tracked	4.0	19.64	0.61	4.01	6.93	11.55	
Rotary mower	Tractor, rubber tracked	4.0	23.03	0.52	2.91	2.99	6.42	
Field sprayer	Tractor, rubber tracked	4.0	41.46	0.29	2.34	2.43	5.06	
Grain drills	Tractor, rubber tracked	4.0	13.97	0.86	5.56	4.42	10.84	

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

Price/Pound	----- Pounds per Acre -----						
	2,200	2,300	2,400	2,500	2,600	2,700	2,800
\$ 0.120	\$ 85.14	\$ 97.14	\$ 109.14	\$ 121.14	\$ 133.14	\$ 145.14	\$ 157.14
\$ 0.150	\$ 151.14	\$ 166.14	\$ 181.14	\$ 196.14	\$ 211.14	\$ 226.14	\$ 241.14
\$ 0.170	\$ 195.14	\$ 212.14	\$ 229.14	\$ 246.14	\$ 263.14	\$ 280.14	\$ 297.14
\$ 0.200	\$ 261.14	\$ 281.14	\$ 301.14	\$ 321.14	\$ 341.14	\$ 361.14	\$ 381.14
\$ 0.230	\$ 327.14	\$ 350.14	\$ 373.14	\$ 396.14	\$ 419.14	\$ 442.14	\$ 465.14
\$ 0.250	\$ 371.14	\$ 396.14	\$ 421.14	\$ 446.14	\$ 471.14	\$ 496.14	\$ 521.14
\$ 0.280	\$ 437.14	\$ 465.14	\$ 493.14	\$ 521.14	\$ 549.14	\$ 577.14	\$ 605.14
\$ 0.300	\$ 481.14	\$ 511.14	\$ 541.14	\$ 571.14	\$ 601.14	\$ 631.14	\$ 661.14

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

Price/Pound	----- Pounds per Acre -----						
	2,200	2,300	2,400	2,500	2,600	2,700	2,800
\$ 0.120	\$ (45.01)	\$ (33.01)	\$ (21.01)	\$ (9.01)	\$ 2.99	\$ 14.99	\$ 26.99
\$ 0.150	\$ 20.99	\$ 35.99	\$ 50.99	\$ 65.99	\$ 80.99	\$ 95.99	\$ 110.99
\$ 0.170	\$ 64.99	\$ 81.99	\$ 98.99	\$ 115.99	\$ 132.99	\$ 149.99	\$ 166.99
\$ 0.200	\$ 130.99	\$ 150.99	\$ 170.99	\$ 190.99	\$ 210.99	\$ 230.99	\$ 250.99
\$ 0.230	\$ 196.99	\$ 219.99	\$ 242.99	\$ 265.99	\$ 288.99	\$ 311.99	\$ 334.99
\$ 0.250	\$ 240.99	\$ 265.99	\$ 290.99	\$ 315.99	\$ 340.99	\$ 365.99	\$ 390.99
\$ 0.280	\$ 306.99	\$ 334.99	\$ 362.99	\$ 390.99	\$ 418.99	\$ 446.99	\$ 474.99
\$ 0.300	\$ 350.99	\$ 380.99	\$ 410.99	\$ 440.99	\$ 470.99	\$ 500.99	\$ 530.99