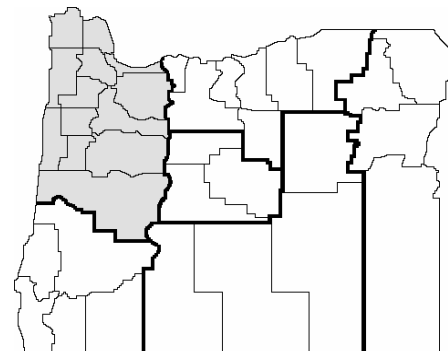


# Enterprise Budget

## Cauliflower, Organic, Processed Market, Willamette Valley Region

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This enterprise budget estimates the typical per-acre costs associated with processed market, organic cauliflower production in the Willamette Valley. It should be used as a guide to estimate your actual costs and does not represent any specific farm.

The major assumptions used in constructing this budget are discussed below. An attempt has been made to report typical cultural practices used in processed market, organic cauliflower production; however, this does not represent the only production method. Assistance provided by area producers is greatly appreciated.

### Typical Farm

The typical farm growing processed market vegetables, conventionally and organically in the Willamette Valley consists of 500 total tillable acres. Other crops include sweet corn, broccoli, and bush beans. It has four tractors pulling various pieces of equipment and mechanical harvester.

### Land and Irrigation

This budget is based on 50 acres of organic cauliflower production. Average production is 5 tons per acre at a gross price to the grower of \$480 per ton.

The land is owned, however, a \$175 per acre lease rate is charged as a return on investment to the owner for his/her investment in the land, and property taxes of \$35 per acre as fixed cash costs.

Irrigation equipment costs are based on a good used system with a \$25 per acre per year repair and maintenance cost. The irrigation system is composed of "overhead" types of systems such as travelers, linear pivots and/or permanent big guns. Pumping expenses are based on electricity costs of \$3.50 per inch of water applied during the growing season.

### Labor

General hand labor is hired at a rate of \$12 per hour, and tractor drivers are paid \$16.50 per hour, both of which include workers compensation, unemployment insurance, and other labor overhead expenses.

### Capital

Interest on operating capital (8 percent) is treated as a cash expense. One-half of the cash expenses are

borrowed for a 6 month period. Interest on intermediate and long term capital (8 percent) is treated as a non-cash opportunity cost to the owner.

### Machinery and Equipment

The machinery and equipment used in the budget reflect the typical machinery complement for a 500-acre farm growing processed market, organic cauliflower in the Willamette Valley.

A detailed breakdown of machinery values is shown in Table 2. Estimated machinery costs are shown in Table 3, assuming straight line depreciation. The machinery costs are estimated based on the total farm use of the machinery. Table 4 shows the per acre labor, variable, and fixed costs for certain machinery operations in the field.

Gasoline costs \$3.00 per gallon, and diesel costs \$3.30 per gallon.

### Operations

The cultural operations are listed approximately in the order in which they are performed. A 225-hp tractor is used to pull the moldboard plow and disk. A 150-hp tractor is used to pull the chisel plow, harrow/roller packer, rotovator, field cultivator, and flail mower. A 70-hp tractor is used to pull the row crop planter and grain drill. A 110-hp tractor is used to pull the fertilizer spreader. Table 1 shows operation rates and units. Fractional rates indicate operation applies to more than one crop cycle with costs allocated proportionally. Total costs for custom services such as liming are allocated as materials.

### Break even Analysis

Tables 5 and 6 show returns per acre for cash and total costs at various yields and prices. Refer to table footnotes for interpretations.

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**Table 1. Cauliflower, Organic, Processed Market, 2008, \$/acre economic costs and returns**

<b>GROSS INCOME</b>								
	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Price/Ton</u>	<u>Your Income</u>		
Cauliflower	5.00	Ton	\$480	\$2,400	\$480			
Total <b>gross</b> income				2,400	480			
<b>VARIABLE CASH COSTS</b>								
	<u>Rate</u>	<u>Units</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>	<u>Cost/Ton</u>	<u>Your Cost</u>
<i>Field Preparations &amp; Planting</i>								
Lime application, custom	0.25	x/acre	\$0.00	\$0.00	\$75.00	\$75.00	\$15.00	
Mold Board Plow	1.00	x/acre	2.13	6.44	0.00	8.58	1.72	
Rotovator	1.00	x/acre	3.81	12.68	0.00	16.49	3.30	
Fertilizer Application	2.00	x/acre	1.39	2.41	100.73	104.53	20.91	
Tandem Disk Harrow	2.00	x/acre	3.39	10.48	0.00	13.86	2.77	
Harrow/Roller Packer	1.00	x/acre	1.52	4.51	0.00	6.04	1.21	
Transplanter - Rent	1.00	x/acre	0.00	0.00	285.00	285.00	57.00	
Cultivating weeds	2.00	x/acre	1.69	4.43	0.00	6.13	1.23	
Weed control			90.00	0.00	0.00	90.00	18.00	
Hand labor	9.00	hours						
Chisel Plow	1.00	x/acre	2.13	6.07	0.00	8.21	1.64	
Row Crop Cultivation	4.00	x/acre	9.07	15.50	0.00	24.58	4.92	
Bin Trailer	1.00	x/acre	3.30	5.00	0.00	8.30	1.66	
Irrigation			50.00	0.00	67.00	117.00	23.40	
Labor, \$10.00	5.00	hours						
Electricity, \$3.50	12.00	acre-inch						
Maint. & Repairs, \$25.00	1.00	x/acre						
Organic Certification			0.00	0.00	12.00	12.00	2.40	
Fee per gross income	0.005	per \$						
<i>Harvesting</i>								
Cauliflower Custom Harvest	1.00	x/acre	0.00	0.00	310.00	310.00	62.00	
Truck	2.00	x/acre	16.50	24.77	0.00	41.27	8.25	
<i>Other Costs</i>								
Pickup & ATV	1.00	x/acre	0.00	15.45	0.00	15.45	3.09	
Interest: operating capital	6.0	months	<u>0.00</u>	<u>0.00</u>	<u>45.70</u>	<u>45.70</u>	<u>9.14</u>	
Total <b>variable</b> costs			184.95	107.75	895.43	1,188.12	237.62	
<b>FIXED CASH COSTS</b>								
				<u>Unit</u>	<u>Total</u>	<u>Cost/Ton</u>		
Property insurance	1.00	x/acre		acre	35.00	7.00		
Property taxes	1.00	x/acre		acre	35.00	7.00		
Land Rent	1.00	x/acre		acre	175.00	35.00		
Total <b>cash fixed</b> costs					245.00	49.00		
<b>FIXED NON-CASH COSTS</b>								
				<u>Unit</u>	<u>Total</u>	<u>Cost/Ton</u>		
Machinery and equip - depreciation, interest & insurance				acre	32.91	6.58		
Pickups, truck & ATV - depreciation, interest & insurance				acre	<u>13.81</u>	<u>2.76</u>		
Total <b>non-cash fixed</b> costs					46.72	9.34		
Total <b>fixed</b> costs					291.72	58.34		
<b>Total of all costs per acre</b>					<b>\$1,479.84</b>	<b>\$295.97</b>		
<b>Net projected returns</b>					<b>\$920.16</b>	<b>\$184.03</b>		

**Table 2. Machinery Cost Assumptions.**

<b>Machine</b>	<b>Size or description</b>	<b>Market value</b>	<b>Hours or miles of annual use</b>	<b>Expected life (years)</b>	<b>Salvage Value</b>
Tractor # 1	4 wheel dr 225 hp	\$155,000	600	20	\$19,888
Tractor # 2	4 Wheel dr 150 hp	92,000	1,370	20	11,804
Tractor # 3	4 Wheel Dr 110 hp	70,000	400	20	8,981
Tractor # 4	2 Wheel Dr 70 hp	40,000	980	20	5,132
Tandem Disk Harrow	21 ft	16,500	250	15	1,584
Mold Board Plow	15 ft	16,200	150	15	1,555
Field Cultivator	27 ft	10,000	350	15	960
Harrow/Roller Packer	15 ft	26,900	185	15	2,582
Rotovator	14 ft	15,700	200	15	1,507
Row Crop Cultivation	15 ft	5,900	200	15	566
Chisel Plow	15 ft	19,000	250	15	1,824
Fertilizer Spreader	40 ft spinner broadcast	5,400	200	10	954
Bin Trailer	Wagon	2,800	100	10	495
Pickup	3/4 ton 4x4	34,000	12,000	10	12,857
Truck	2 ton	20,000	20,000	20	7,563
ATV	4 wheeler	6,000	500	10	1,772

**Table 3. Machinery Cost Calculations.**

<b>Machine</b>	<b>Size or description</b>	<b>--- Variable costs --</b>		<b>---- Fixed costs ----</b>		<b>Total Cost</b>
		<b>Fuel &amp; Lube</b>	<b>Repairs &amp; Maint.</b>	<b>Depr. &amp; Interest</b>	<b>Insurance</b>	
		----- Costs per hour -----				
Tractor # 1	4 wheel dr 225 hp	\$37.95	\$5.58	\$22.92	\$1.31	\$67.76
Tractor # 2	4 Wheel dr 150 hp	30.36	7.56	5.96	0.34	44.22
Tractor # 3	4 Wheel Dr 110 hp	22.77	1.68	15.53	0.89	40.86
Tractor # 4	2 Wheel Dr 70 hp	18.98	5.49	3.62	0.21	28.29
Tandem Disk Harrow	21 ft	0	7.49	6.87	0.22	14.58
Mold Board Plow	15 ft	0	6.27	11.24	0.36	17.87
Field Cultivator	27 ft	0.00	5.24	2.97	0.09	8.31
Harrow/Roller Packer	15 ft	0.00	10.92	15.14	0.48	26.54
Rotovator	14 ft	0.00	16.96	8.17	0.26	25.39
Row Crop Cultivation	15 ft	0	3.75	3.07	0.10	6.92
Chisel Plow	15 ft	0.00	9.03	7.91	0.25	17.19
Fertilizer Spreader	40 ft spinner broadcast	0.00	4.19	3.49	0.10	7.78
Bin Trailer	Wagon	0	0.53	3.62	0.10	4.25
		----- Costs per mile -----				
Pickup	3/4 ton 4x4	\$0.29	\$0.05	\$0.33	\$0.11	\$0.78
Truck	2 ton	1.14	0.10	0.09	0.06	1.39
		----- Costs per acre -----				
ATV	4 wheeler	\$8.28	\$0.42	\$1.47	\$0.45	\$10.62

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

Operation	Tractor	Miles per hour	Acres per hour	Labor costs per acre	-- Machine costs --		Total costs per acre
					Variable costs per acre	Fixed costs per acre	
Tandem Disk Harrow	Tractor # 1	4.50	9.74	\$1.69	\$5.24	\$3.22	\$10.15
Mold Board Plow	Tractor # 1	5.00	7.73	2.13	6.44	4.63	13.21
Field Cultivator	Tractor # 2	7.00	19.48	0.85	2.22	0.48	3.54
Harrow/Roller Packer	Tractor # 2	7.00	10.82	1.52	4.51	2.02	8.06
Rotovator	Tractor # 2	3.00	4.33	3.81	12.68	3.40	19.89
Flail Mower	Tractor # 2	7.00	10.19	1.62	4.89	1.50	8.01
Chisel Plow	Tractor # 2	5.00	7.73	2.13	6.07	1.87	10.08
Fertilizer Spreader	Tractor # 3	7.00	23.77	0.69	1.21	0.84	2.74
Row Crop Planter	Tractor # 4	5.50	6.50	2.54	7.22	2.32	12.08
Grain Drill	Tractor # 4	5.00	5.09	3.24	6.86	2.23	12.33

**Table 5. Estimated Per Acre Returns Over CASH Costs at Varying Yields & Prices<sup>1</sup>.**

Price/Ton	----- Tons per Acre -----						
	3.00	3.67	4.34	5.00	5.67	6.34	7.00
<b>\$360</b>	(\$353)	(\$112)	\$130	\$367	\$608	\$850	\$1,087
<b>\$390</b>	(263)	(1)	260	517	779	1,040	1,297
<b>\$420</b>	(173)	109	390	667	949	1,230	1,507
<b>\$450</b>	(83)	219	520	817	1,119	1,420	1,717
<b>\$480</b>	7	329	650	967	1,289	1,610	1,927
<b>\$510</b>	97	439	781	1,117	1,459	1,801	2,137
<b>\$540</b>	187	549	911	1,267	1,629	1,991	2,347

**Table 6. Estimated Per Acre Returns Over TOTAL ECONOMIC Costs at Varying Yields & Prices<sup>2</sup>.**

Price/Ton	----- Tons per Acre -----						
	3.00	3.67	4.34	5.00	5.67	6.34	7.00
<b>\$360</b>	(\$399)	(\$158)	\$83	\$321	\$562	\$803	\$1,041
<b>\$390</b>	(309)	(48)	213	471	732	993	1,251
<b>\$420</b>	(219)	62	343	621	902	1,183	1,461
<b>\$450</b>	(129)	172	474	771	1,072	1,374	1,671
<b>\$480</b>	(39)	282	604	921	1,242	1,564	1,881
<b>\$510</b>	51	392	734	1,071	1,412	1,754	2,091
<b>\$540</b>	141	502	864	1,221	1,582	1,944	2,301

<sup>1</sup> Table 5 estimates the returns over cash costs per acre based on varying yields and prices. In this budget, a grower should expect \$967, based upon a yield of 5 tons at \$480 per ton. At this yield, breakeven occurs at approximately \$272 per ton for cash costs.

<sup>2</sup> Table 6 estimates the returns over total economic costs per acre based on varying yields and prices. In this budget a grower should expect \$921, based on 5 tons at \$480 per ton. At this yield, breakeven occurs at approximately \$283 per ton for total costs.