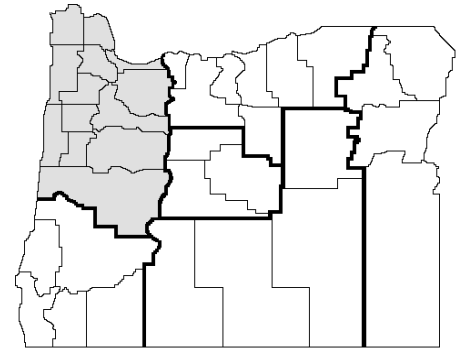


# Enterprise Budget

## Sweet Corn, Processed Market, Willamette Valley Region

Jim Julian, Faculty Research Assistant, NWREC  
Clark Seavert, Agricultural Economist, NWREC  
Dan McGrath, Extension Horticulture, Linn County  
Robert McReynolds, Extension Horticulture, NWREC  
Ed Peachey, Horticulture, Corvallis  
Oregon State University



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This enterprise budget estimates the typical per-acre costs for producing sweet corn in the Willamette Valley for the processed market. 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, sweet corn 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 1000 total tillable acres. Other crops include bush beans, broccoli, cauliflower, and grass seed. It has four tractors pulling various pieces of equipment and mechanical harvester.

### Land and Irrigation

This budget is based on 175 acres of sweet corn production. Average production is 10 tons per acre at a gross price to the grower of \$105 per ton.

The land is owned, however, a \$200 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 \$20 per acre are charges as a fixed cash cost.

Irrigation equipment costs are based on a good used system with a \$50 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 \$11 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 1000-acre farm growing processed market vegetables 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 \$2.50 per gallon, and diesel costs \$2.50 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 v-ripper and disk. A 150-hp tractor is used to pull the harrow/roller packer and field cultivator. A 110-hp tractor is used to pull the fertilizer spreader. A 70-hp tractor is used to pull the row crop planter. The corn is harvested using a self-propelled corn picker. 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.

**Table 1. Sweet Corn, Processed Market, 2010, \$/acre economic costs and returns**

<b>GROSS INCOME</b>		<b>Quantity</b>	<b>Unit</b>	<b>\$/Unit</b>	<b>Total</b>	<b>Price/Ton</b>	<b>Your Income</b>		
Sweet Corn		10.00	Ton	105.00	1,050.00	105.00			
<b>VARIABLE CASH COSTS</b>		<b>Descript.</b>	<b>Units</b>	<b>Labor</b>	<b>Machinery</b>	<b>Materials</b>	<b>Total</b>	<b>Cost/Ton</b>	<b>Your Cost</b>
<i>Field Preparations &amp; Planting</i>									
	V-Rip	1.00	x/acre	2.54	5.77	0.00	8.31	0.83	
	Harrow/Roller Packer	2.00	x/acre	3.05	7.67	65.00	75.72	7.57	
	Pre-plant Fert.	\$65							
	Tandem Disk Harrow	1.00	x/acre	1.69	4.29	0.00	5.99	0.60	
	Plant Corn	1.00	x/acre	2.54	6.57	170.00	179.10	17.91	
	Seed	\$100							
	Sidedress Fert.	\$70							
<i>Preharvest</i>									
	Cultivating weeds	1.00	x/acre	0.85	1.84	0.00	2.69	0.27	
	Pest Control, Boom Sprayer	2.00	x/acre	0.86	0.93	70.00	71.79	7.18	
	Herbicide	\$30							
	Insecticide	\$40							
	Fertilize	1.00	x/acre	0.69	0.97	60.00	61.67	6.17	
	Top Dress	\$60							
	Custom Topping	1.00	x/acre	0.00	0.00	10.00	10.00	1.00	
	Irrigation			33.00	0.00	85.00	118.00	11.80	
	Labor, \$11.00	3.00	hours						
	Electricity, \$3.50	10.00	acre-inch						
	Maint. & Repairs, \$50.00	1.00	x/acre						
<i>Harvesting</i>									
	Corn Picker	1.00	x/acre	4.32	27.02	0.00	31.34	3.13	
	Truck	2.00	x/acre	0.00	7.45	0.00	7.45	0.75	
<i>Postharvest</i>									
	Soil Test	1.00	x/acre	0.00	0.00	2.00	2.00	0.20	
	Lime application, custom	0.25	x/acre	0.00	0.00	75.00	75.00	7.50	
	Disk	2.00	x/acre	3.05	8.59	0.00	11.64	1.16	
<i>Other Costs</i>									
	Pickup & ATV	1.00	x/acre	0.00	5.31	0.00	5.31	0.53	
	Interest: operating capital	6.0	months	<u>0.00</u>	<u>0.00</u>	<u>24.04</u>	<u>24.04</u>	<u>2.40</u>	
	<b>Total variable costs</b>			52.60	76.40	561.04	690.03	69.00	
<b>FIXED CASH COSTS</b>						<b>Unit</b>	<b>Total</b>	<b>Cost/Ton</b>	
	Property insurance	1.00	x/acre			acre	25.00	2.50	
	Property taxes	1.00	x/acre			acre	20.00	2.00	
	Land Rent	1.00	x/acre			acre	<u>200.00</u>	<u>20.00</u>	
	<b>Total fixed cash costs</b>						245.00	24.50	
<b>FIXED NON-CASH COSTS</b>						<b>Unit</b>	<b>Total</b>	<b>Cost/Ton</b>	
	Machinery and equip - depreciation, interest & insurance					acre	32.73	3.27	
	Pickup, truck & ATV - depreciation, interest & insurance					acre	<u>14.29</u>	<u>1.43</u>	
	<b>Total fixed non-cash costs</b>						47.02	4.70	
	<b>Total fixed costs</b>						292.02	29.20	
<b>Total of all costs per acre</b>							<b>\$982.05</b>	<b>98.21</b>	
<b>Net projected returns</b>							<b>\$67.95</b>	<b>6.79</b>	

**Table 2. Machinery Cost Assumptions**

Machine	Size or description	Market value	Hours or <i>miles</i> of annual use	Expected life (years)	Salvage Value
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
V-Ripper	14 ft	12,500	200	15	432
Tandem Disk Harrow	21 ft	16,500	250	15	1,584
Field Cultivator	27 ft	10,000	350	15	960
Harrow/Roller Packer	15 ft	26,900	185	15	2,582
Sidedresser attachment	12 ft	2,000	200	10	353
Fertilizer Spreader	40 ft spinner broadcast	5,400	200	10	954
Row Crop Planter	15 ft	21,000	200	15	2,016
Self-propelled Boom Sprayer	60 ft	135,000	200	10	5,658
Self-propelled Corn Picker	15 ft	135,000	800	15	13,824
Pickup	3/4 ton 4x4	25,000	12,000	10	9,857
Truck	2 ton	30,000	2,000	20	4,515
ATV	4 wheeler	6,000	500	10	1,772

**Table 3. Machinery Cost Calculations**

Machine	Size or description	--- Variable costs ---		---- Fixed costs ----		Total Cost
		Fuel & Lube	Repairs & Maint.	Depr. & Interest	Insurance	
----- Costs per hour -----						
Tractor # 1	4 Wheel dr 225 hp	28.75	5.58	22.92	1.31	58.56
Tractor # 2	4 Wheel dr 150 hp	23.00	7.56	5.96	0.34	36.86
Tractor # 3	4 Wheel dr 110 hp	17.25	1.68	15.53	0.89	35.34
Tractor # 4	2 Wheel dr 70 hp	14.38	5.49	3.62	0.21	23.69
V-Ripper	14 ft	0	3.14	6.61	0.19	9.95
Tandem Disk Harrow	21 ft	0.00	7.49	6.87	0.22	14.58
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
Sidedresser attachment	12 ft	0.00	0.26	1.29	0.04	1.58
Fertilizer Spreader	40 ft spinner broadcast	0.00	4.19	3.49	0.10	7.78
Row Crop Planter	15 ft	0.00	22.50	10.93	0.35	33.78
Self-propelled Boom Sprayer	60 ft	8.63	9.09	92.80	7.38	117.91
Self-propelled Corn Picker	15 ft	20.13	83.08	17.54	1.95	122.70
----- Costs per mile -----						
Pickup	3/4 ton 4x4	0.24	0.05	0.24	0.08	0.62
Truck	2 ton	0.86	1.00	1.33	0.79	3.98
----- Costs per acre -----						
ATV	4 wheeler	1.73	0.11	1.47	0.45	3.75

**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	
V-Ripper	Tractor # 1	4.5	6.49	2.54	5.77	4.78	13.09
Tandem Disk Harrow	Tractor # 1	4.5	9.74	1.69	4.29	3.22	9.20
Field Cultivator	Tractor # 2	7.0	19.48	0.85	1.84	0.48	3.17
Harrow/Roller Packer	Tractor # 2	7.0	10.82	1.52	3.83	2.02	7.38
Fertilizer Spreader	Tractor # 3	7.0	23.77	0.69	0.97	0.84	2.51
Row Crop Planter	Tractor # 4	5.5	6.50	2.54	6.57	2.32	11.38
Self-propelled Boom Sprayer		7.0	38.20	0.43	0.46	2.62	3.52
Self-propelled Corn Picker		3.0	3.82	4.32	27.02	5.10	36.44

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

Price/Ton	----- Tons per Acre -----						
	8.50	9.00	9.50	10.00	10.50	11.00	11.50
\$ 70.00	\$ (340)	\$ (305)	\$ (270)	\$ (235)	\$ (200)	\$ (165)	\$ (130)
\$ 80.00	\$ (255)	\$ (215)	\$ (175)	\$ (135)	\$ (95)	\$ (55)	\$ (15)
\$ 90.00	\$ (170)	\$ (125)	\$ (80)	\$ (35)	\$ 10	\$ 55	\$ 100
\$ 105.00	\$ (43)	\$ 10	\$ 62	\$ 115	\$ 167	\$ 220	\$ 272
\$ 115.00	\$ 42	\$ 100	\$ 157	\$ 215	\$ 272	\$ 330	\$ 387
\$ 120.00	\$ 85	\$ 145	\$ 205	\$ 265	\$ 325	\$ 385	\$ 445
\$ 130.00	\$ 170	\$ 235	\$ 300	\$ 365	\$ 430	\$ 495	\$ 560

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

Price/Ton	----- Tons per Acre -----						
	8.50	9.00	9.50	10.00	10.50	11.00	11.50
\$ 70.00	\$ (387)	\$ (352)	\$ (317)	\$ (282)	\$ (247)	\$ (212)	\$ (177)
\$ 80.00	\$ (302)	\$ (262)	\$ (222)	\$ (182)	\$ (142)	\$ (102)	\$ (62)
\$ 90.00	\$ (217)	\$ (172)	\$ (127)	\$ (82)	\$ (37)	\$ 8	\$ 53
\$ 105.00	\$ (90)	\$ (37)	\$ 15	\$ 68	\$ 120	\$ 173	\$ 225
\$ 115.00	\$ (5)	\$ 53	\$ 110	\$ 168	\$ 225	\$ 283	\$ 340
\$ 120.00	\$ 38	\$ 98	\$ 158	\$ 218	\$ 278	\$ 338	\$ 398
\$ 130.00	\$ 123	\$ 188	\$ 253	\$ 318	\$ 383	\$ 448	\$ 513

<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 a net return of \$115 per acre, based upon a yield of 10 tons at \$105 per ton. At this yield, the breakeven price with respect to cash costs is approximately \$94 per ton.

<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 a net return of \$68 per acre, based on 10 tons at \$105 per ton. At this yield, the breakeven price is approximately \$99 per ton.