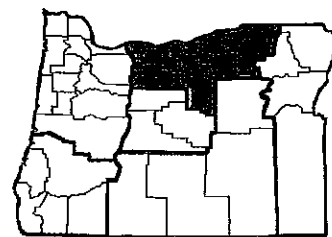


# Enterprise Budget

## Cherries, Sweet, Brine-Market, North Central Region

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EM 8815, October 2002

This enterprise budget estimates the typical per acre costs associated with brine-market sweet cherry production in Wasco County. It should be used as a guide to estimate actual costs and is not representative of any particular farm. The major assumptions used in constructing this budget are discussed below. An attempt has been made to report typical cultural practices used in brine-market sweet cherry production; however, this does not represent the only production method. Assistance provided by area producers and agribusinesses is greatly appreciated.

### Typical Sweet Cherry Farm

The typical sweet cherry orchard in Wasco County, as used in this budget, consists of 100 total productive acres. Bearing acres include 55 acres of mature, standard-density, fresh-market sweet cherries, 15 acres of high-density, fresh-market sweet cherries, 20 acres of mature, standard-density, brine-market sweet cherries, and approximately 10 percent, or 10 acres, of the orchard under establishment. It is assumed this farm complies with the Integrated Fruit Production (IFP) program established by the Wasco County Fruit and Produce League. To review the IFP guidelines, please visit: [http://osu.orst.edu/dept/mcarec/ifp/ifp\\_guide\\_2000.html](http://osu.orst.edu/dept/mcarec/ifp/ifp_guide_2000.html)

### Land and Irrigation

This budget is based on 20 producing acres of standard-density, brine-market sweet cherries with 91 trees per acre. The trees are mature, ranging in age from 25 to 75 years, and therefore establishment costs are assumed to be fully amortized. Average production is 6,000 pounds per acre at a gross price to the grower of \$0.27 per pound. The land is owned and valued at \$4,000 per acre with \$42 per acre property taxes. The sweet cherry orchard has a microirrigation system, which is valued at \$1,000 per acre.

### Labor and Housing

General labor is hired at a rate of \$10.00 per hour, and picking labor costs \$3.60 per bucket, all of which include worker's compensation, unemployment insurance, and other labor overhead expenses. Housing for migrant pickers is valued at \$5,000 per unit and has a productive life of 30 years; each unit houses 5 pickers. Utilities, repairs, and maintenance costs for these units are \$2,000 per year, or \$20 per acre, plus \$0.01 per pound of sweet cherries produced. Sixteen units are

required for this orchard. Foreman housing is also provided year-round at no cost to the employee and valued at \$450 per month. The foreman housing is treated as a noncash opportunity cost to the owner. All labor and foreman housing charges are split equally across the 100 acres.

### Capital

Interest on operating capital (10 percent) is treated as a cash expense. One-half of the cash expenses are borrowed for a 6-month period. Interest on intermediate (10 percent) and long-term capital (8 percent) is treated as a noncash opportunity cost to the owner.

### Machinery and Equipment

The machinery and equipment used in the budget reflect the typical machinery complement of a 100-acre orchard in Wasco County. A detailed breakdown of machinery values is shown in Table 1. Estimated machinery costs are shown in Table 2, assuming the machinery is half depreciated. The machinery costs are estimated based on the total farm use of the machinery. Gasoline costs \$1.70 per gallon, and diesel costs \$1.40 per gallon. Table 3 shows the per-acre labor, variable, and fixed costs for certain machinery operations in the orchard.

### Operations

The cultural operations are listed approximately in the order in which they are performed. A 70-hp tractor is used for shredding brush, flailing, and pulling the air-blast sprayer; it's also used during harvest. A 50-hp tractor is used to auger holes for new trees, spread fertilizer, mow, spray weeds, and assist during harvest. Herbicides are applied to 20 percent of each acre as strips between trees.

### Break-even Analysis

Tables 4 and 5 show the returns per acre for cash and total costs at various yields and prices. These returns do reflect the changes in harvesting costs with changes in yield.



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**EM 8815 Enterprise Budget**  
**ECONOMIC COSTS and RETURNS**  
**NORTH CENTRAL REGION**  
Cherries, Sweet, Brine Market, 100-acre farm

<u>GROSS INCOME Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Total</u>	<u>Your Income</u>
Brine-market Sweet Cherries	6,000	lb	0.27	<u>1,620</u>	_____
Total GROSS Income				1,620	_____

<u>VARIABLE CASH COSTS Description</u>	<u>Labor</u>	<u>Machinery</u>	<u>Materials</u>	<u>Total</u>		<u>Your Cost</u>
				<u>¢/Lb</u>	<u>\$/Acre</u>	
Pruning Trees	150.00	0.00	0.00	0.025	150.00	_____
Shredding Brush	10.31	12.23	0.00	0.004	22.54	_____
Fertilizer (broadcast applied)	1.96	2.27	25.00	0.005	29.23	_____
Herbicide Strip Maintenance (0.30x)	6.28	7.07	14.00	0.005	27.36	_____
Disease Control	10.31	19.52	21.00	0.008	50.83	_____
Insecticides (ground applied)	10.31	19.52	60.00	0.015	89.83	_____
Insecticides (aerial applied)	0.00	0.00	48.00	0.008	48.00	_____
Bee Rental	0.00	0.00	48.00	0.008	48.00	_____
Mowing Orchard Floor	16.17	20.27	0.00	0.006	36.44	_____
Rodent Control	15.00	0.00	3.00	0.003	18.00	_____
Irrigation	35.00	10.00	0.00	0.008	45.00	_____
Ladders, Pruning, & Picking Equipment	0.00	17.10	0.00	0.003	17.10	_____
Harvesting Costs	1,080.00	41.81	12.00	0.189	1,133.81	_____
Pickup, Truck, & ATV	0.00	55.12	0.00	0.009	55.12	_____
Housing Facilities	0.00	0.00	80.00	0.013	80.00	_____
Miscellaneous & Overhead	0.00	0.00	75.00	0.013	75.00	_____
Interest: Operating Capital	<u>0.00</u>	<u>0.00</u>	<u>76.42</u>	<u>0.013</u>	<u>76.42</u>	_____
Total VARIABLE COSTS	1,335.36	204.89	462.42	0.334	2,002.67	_____

GROSS INCOME minus VARIABLE COSTS

-0.064 -382.67

**FIXED COSTS**

	<u>Unit</u>	<u>¢/Lb</u>	<u>\$/Acre</u>	<u>Your Cost</u>
<b>CASH Costs</b>				
Machinery & Equipment Insurance	acre	0.001	6.14	_____
Pickup, Truck, & ATV Insurance	acre	0.000	1.87	_____
Foreman Housing	acre	0.009	54.00	_____
Water Assessment	acre	0.018	110.00	_____
Property Insurance	acre	0.008	50.00	_____
Property Taxes	acre	<u>0.007</u>	<u>42.00</u>	_____
Total CASH Costs		0.044	264.01	_____
<b>NONCASH Costs</b>				
Machinery & Equipment - Depreciation & Interest	acre	0.041	248.61	_____
Pickup - Depreciation & Interest	acre	0.006	37.84	_____
Housing Facilities	acre	0.011	66.67	_____
Land Interest Charge	acre	<u>0.053</u>	<u>320.00</u>	_____
Total NONCASH Costs		0.112	673.11	_____
Total FIXED COSTS		0.156	937.12	_____
Total of ALL Costs per Acre		0.490	2,939.79	_____
<b>Net Projected Returns</b>		-0.220	-1,319.79	_____

## EM 8815 Enterprise Budget

Table 1. Machinery Cost Assumptions

Machine	Size	Market Value	Hours or Miles of Annual Use	Expected Life (yrs)
Tractor	4-wheel-dr. 75 hp, New	\$30,000	907	10
Tractor	2-wheel-dr. 50 hp, Older	17,000	362	20
Air-blast sprayer	400-Gallon Unit, PTO	15,000	430	10
Flail chopper	8' Unit	6,000	143	7
Mower	9' Unit	5,000	134	10
Weed sprayer	100-Gallon Unit	2,000	88	15
Tank sprayer for ATV		1,500	34	10
Fertilizer spreader		2,300	25	20
Pickup	1/2-Ton 4X4, New	20,000	12,000	10
Truck	2-Ton, Used	15,000	3,500	20
ATV	4 Wheeler, New	5,500	3,000	5
Auger		1,700	N/A	20
Bin trailer	2 Units	5,000	N/A	10
Ladders	80 Units	9,000	N/A	10
Picking buckets	1,600 Buckets	10,000	N/A	5
Pruning & power saws	2 Ch, 3PP, 3PS, 3HL, 1PL	3,000	N/A	3
Microirrig. system & main.	Solid Set, per acre	1,000	N/A	25
Housing facilities	16 Units	80,000	N/A	30

Table 2. Machinery Cost Calculations

Machine	Size	Variable		Fixed		Total
		Fuel & Lube	Repair & Maint.	Depreciation & Interest	Insurance	
<b>Costs per Hour</b>						
Tractor	4-wheel-dr. 75 hp	\$9.66	\$0.82	\$4.28	\$0.30	\$15.05
Tractor	2-wheel-dr. 50 hp	9.66	0.86	4.69	0.42	15.63
Air-blast sprayer	400-Gallon Unit, PTO	0.00	9.52	4.55	0.21	14.28
Flail chopper	8' Unit	0.00	2.17	7.26	0.25	9.68
Mower	9' Unit	0.00	3.08	5.25	0.22	8.55
Weed sprayer	100-Gallon Unit	0.00	0.89	2.59	0.14	3.62
Tank sprayer for ATV		0.00	0.44	6.04	0.26	6.75
Fertilizer spreader		0.00	1.17	9.37	0.56	11.10
<b>Costs per Mile</b>						
Pickup	1/2-Ton 4X4, New	0.20	0.05	0.21	0.02	0.47
Truck	2-Ton, Used	0.39	0.29	0.34	0.04	1.07
ATV	4 Wheeler, New	0.04	0.02	0.04	0.02	0.12
<b>Costs per Acre</b>						
Auger		0.00	0.17	1.70	0.00	1.87
Bin trailer	2 Units	0.00	0.50	7.50	0.00	8.00
Ladders	80 Units	0.00	5.40	13.50	0.00	18.90
Picking buckets	1,600 Buckets	0.00	6.00	25.00	0.00	31.00
Pruning & power saws	2Ch, 3PP,3PS,3HL,1PL	3.40	1.80	11.50	0.00	16.70
Microirrig. system & main.	Solid Set, per acre	0.00	10.00	80.00	0.00	90.00
Housing facilities	16 Units	0.00	20.00	58.67	0.00	78.67

**EM 8815 Enterprise Budget**

**Table 3. Estimated Cost of Each Operation with Power Unit in a Standard-density Orchard**

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	
Air-blast sprayer	4-wheel-dr.	2.0	1.94	\$5.16	\$9.76	\$6.42	\$21.34
Flail chopper	4-wheel-dr.	2.0	0.97	10.31	12.23	16.79	39.33
Mowing	4-wheel-dr.	3.0	3.09	3.23	4.05	4.33	11.62
Weed sprayer	2-wheel-dr.	3.5	3.18	3.14	3.54	2.95	9.63
Tank sprayer for ATV		3.5	3.18	3.14	1.10	2.86	7.10
Fertilizer spreader	2-wheel-dr.	3.0	5.09	1.96	2.27	3.53	7.76

**Table 4. Estimated per-Acre Returns Over Cash Costs at Varying Yields and Prices**

Price per Lb	Lb per Acre						
	2,000	4,000	6,000	8,000	10,000	12,000	14,000
\$ 0.10	-\$1,229	-\$1,406	-\$1,584	-\$1,762	-\$1,940	-\$2,118	-\$2,296
\$ 0.15	-1,129	-1,206	-1,284	-1,362	-1,440	-1,518	-1,596
\$ 0.20	-1,029	-1,006	-984	-962	-940	-918	-896
\$ 0.25	-929	-806	-684	-562	-440	-318	-196
\$ 0.30	-829	-606	-384	-162	60	282	504
\$ 0.35	-729	-406	-84	238	560	882	1,204
\$ 0.40	-629	-206	216	638	1,060	1,482	1,904

**Table 5. Estimated per-Acre Returns Over Total Costs at Varying Yields and Prices**

Price per Lb	Lb per Acre						
	2,000	4,000	6,000	8,000	10,000	12,000	14,000
\$ 0.25	-\$1,638	-\$1,516	-\$1,394	-\$1,271	-\$1,149	-\$1,027	-\$905
\$ 0.30	-1,538	-1,316	-1,094	-871	-649	-427	-205
\$ 0.35	-1,438	-1,116	-794	-471	-149	173	495
\$ 0.40	-1,338	-916	-494	-71	351	773	1,195
\$ 0.45	-1,238	-716	-194	329	851	1,373	1,895
\$ 0.50	-1,138	-516	106	729	1,351	1,973	2,595
\$ 0.55	-1,038	-316	406	1,129	1,851	2,573	3,295

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