



Costs of Tart Cherry Production in Western Michigan

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THIS COST EVALUATION of tart cherry production in western Michigan is a projection of costs developed through small group discussions with cherry growers. Growers described common growing and harvesting practices of average cherry growers in the area. They agreed upon the size of cherry acreage, equipment and cultural practices generally used by an average grower.

These figures do not reflect the average cost of tart cherry production for all growers in the state because costs vary considerably by area and from farm to farm.

The data can help a grower to develop his costs and better evaluate his farm situation. Each of the appropriate tables in this report includes a "Your Farm Cost" column for the grower to note the costs for a particular operation. Where costs cannot be determined, the grower may wish to adjust and substitute the study data.

The data were assembled assuming equipment and labor available for a hypothetical farm of 100 acres of diversified tree fruit, including 40 acres of tart cherries. However, the data in Table 1 are presented for 10 acres of tart cherries since it may be easier for a grower to visualize many of the resource inputs on this basis. Per-acre costs, as shown in Table 2 through 6, can be determined from Table 1, by dividing by 10.

(See Table 1 on pages 2-3.)

The full-time labor classification includes the working time of the operator and regular hired help devoted to cherries. Operator labor is not considered a cash expense by producers; but to allow for differences in the proportion of work performed by regular hired help, which is a cash expense, or the operator, both have been included at the same rate. As a result, producers who do a major portion of the work may have a lower cash labor cost than the figures indicate. This rate is a base rate of \$3.50 per hour plus Social Security at 6.13% and Workers Compensation Insurance at the proposed rate of 16%. Hand labor was paid the minimum wage of \$2.90 per hour, which equals \$3.54 with Social Security and Workers Compensation.

Some major factors considered in the computation of equipment costs are initial costs, salvage value, years of life, annual usage, repair costs, insurance, interest and

operating expenses such as gas and oil. The operating costs which include only gas and oil and repairs for each piece of equipment are charged to the crop in Table 1 on the basis of direct use of the equipment.

Variable costs are those that change directly with increases or decreases in the acreage of tart cherries. Examples of such costs are spray material, fertilizer, hired labor and machinery operating costs.

Variable costs incurred in cherry production are categorized by labor, machinery and materials in Table 2. The details of hours and type of labor, machinery used and hours of use, and kinds and amounts of material used by operation are shown in Table 1. If a grower's costs for particular items are substantially higher than those shown, he may need to closely analyze those components to see if they can be reduced. A high cost for a particular component may be justified if it contributes to sufficiently higher yield or improved quality.

The variable costs incurred in the harvesting of an acre with estimated total production of 3 tons of cherries are shown in Table 3. At this level, a custom harvest charge of 7.5 cents per pound was computed.

The overhead, or fixed cost, for cherry production (Table 4) includes allocation of machinery overhead on the basis of the proportion of total farm use in cherries, interest on orchard investment, orchard depreciation

Table 2. Cash cost per acre of growing tart cherries, western Michigan, 1979

Operation	Labor	Machinery	Materials	Total	Your Farm Cost
Hedging, trimming & brush removal	\$ 9.50	\$ 7.79	\$ 0.00	\$ 17.29	_____
Fertilizer—lime	2.99	1.97	39.33	44.29	_____
Weed control	7.69	4.66	6.42	18.77	_____
Mowing—discing	12.39	15.71	0.00	28.10	_____
Spraying	14.00	20.26	79.58	113.84	_____
Tree replanting & orchard clean-up	5.13	1.64	5.92	12.69	_____
Management & misc. repairs	29.89	9.00	0.00	38.89	_____
Other	0.00	4.56	13.80	18.36	_____
Totals	\$81.59	\$65.59	\$145.05	\$292.23	_____

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Table 1.
 Growing Operations and Related Variable Costs For
 10 Acres of Red Tart Cherries
 in Western Michigan, 1979
 (108 Trees Per Acre)

Operation	Labor			Equipment			Materials				
	Labor Hr. per 10 Acres	Wage Rate	Cost per 10 Acres	Equipment Used	Hours of Use	Cost per Hour	Cost per 10 Acres	Item	Cost per 10 Acres	Total Cost Per 10/A	Your Farm Cost
Dormant Hedging-- Custom hired, one year in five			1 year cost @ \$32/Acre				\$ 64.00		\$ 64.00		
Trimming (per year, average cost)	22	\$3.54	\$ 77.88	Chain Saw	2	\$.57	1.14			79.02	
Removing Brush	4	4.27	17.08	Large Tractor (new) Brush Rake or Mower	4	2.95 .25	11.80 1.00			29.88	
Fertilizer	5	4.27	21.35	Small Tractor Fertilizer Spreader	5	2.21 .40	11.05 2.00	33-0-0 @ 500#/A. @ \$120/ton.	\$300.00	334.30	
Fertilizer (appl'd every third yr.)	2	4.27	8.54	Large Tractor (new) Fertilizer Spreader	2	2.95 .40	5.90 .80	250# Potash every 3rd year @ \$125/T.	50.00	65.24	
Lime (appl'd every third year)								1 Ton every 3rd yr. Custom Applied at \$13/Ton.	43.33	43.33	
Weed Control (Spray 3 times, 1/3 of area)	18	4.27	76.86	Small Tractor Weed Sprayer	15	2.21 .90	33.15 13.50	1 Pint Paraquat/A. Sprayed @ \$11.50/qt. Sticker--1/2 Pint @ \$1.32	57.60 6.60	187.71	
Mowing (3 times)	30	3.54	106.20	Large Tractor (used) Rotary Mower	30	2.95 1.70	89.50 51.00			245.70	
Discing or rototilling	5	3.54	17.70	Large Tractor (used) Disc or Rototiller	5	2.95 .58	14.75 2.90			35.35	
Bee Rental								1 Hive per 2 Acres @ \$22/Hive	110.00	110.00	
<u>SPRAY PROGRAM</u>											
Bloom	3	4.27	12.81	Large Tractor (new) Air Blast Sprayer	3	2.95 4.53	8.95 13.59	Phygon - 1.25#/Acre @ \$4.95/lb. Thiodan-1 qt. @ \$3.54	61.90 35.40	132.55	
Petal Fall	4	4.27	17.08	Large Tractor (new) Air Blast Sprayer	4	2.95 4.53	11.80 18.12	Cyprax - 1#/A Spray @ \$4.21/lb. Guthion 50% W.P. 1.5#/A @ \$4.25/lb.	42.10 53.10	142.20	

Table 1.

Operation	Labor		Equipment		Materials		Total Cost Per 10/A Cost		
	Labor Hr. per 10 Acres	Wage Rate	Cost per 10 Acres	Equipment Used	Hours of Use	Cost per Hour		Cost per 10 Acres	
Growth Regulator (1/3 acreage)	1.5	4.27	6.41	Large Tractor Air Blast Sprayer	1.5	2.95	4.42	Alar-5#/Acre @ \$13.00/lb. 243.75	261.38
1st & 2nd Cover Sprays (300 gal/A)	8	4.27	34.16	Large Tractor (new) Air Blast Sprayer	8	2.95	23.60	Cyrex - 1#/A @ \$4.21/lb. 94.20	283.35
					8	4.53	36.34	1/2# Guthion @ 100 gal 4.25/lb. 63.75	
								Sulphur 3#/100 gal. @ .23/lb. 41.40	
3rd Cover Spray	4	4.27	17.08	Large Tractor Air Blast Sprayer	4	2.95	11.80	Cyrex-1#/A @ 4.21/lb. 42.10	149.10
					4	4.53	18.12	Imidan-3#/A @ 2.00/lb. 60.00	
Post Harvest Spray	4	4.27	17.08	Large Tractor (new) Air Blast Sprayer	4	2.95	11.80	DiFolitan-3.75 pts./A @ 10.75/gal. 50.40	97.40
					4	4.53	18.12		
Lesser Peach Borer Spray (1/4 acreage)	10	3.54	35.40	Large Tractor (new) High Pressure Sprayer	5	2.95	14.75	Thiodan - .5 gal/A @ 14.15/gal. 17.69	72.54
					5	.90	4.50		
Well & Pump Operation				Electricity & Repairs	10A	1.06/A	10.60		10.60
Mousebaiting (Custom Applied)				Airplane @ \$3.50/A.			35.00	Zinc Phosphide Corn 28.00	63.00
Tree Replanting (Annual Cost during 1st 1/2 orchard life)	2.5	3.54	8.85	Small Tractor Trailer	1	2.21	2.21	Trees 1.5/A @ 3.00 45.00	56.24
					1	.18	.18		
Orchard Clean-Up	12	3.54	42.48	Small Tractor (used) Trailer	6	2.21	13.26	Grafting Emulsion-.1gal 11.50	70.69
					4	.18	.72	/A @ \$11.50/gal. 2.48	
								1/2# Phygon/Gal. @ 4.95/lb. .25	
								1/8# Thiodan/Gal. @ 2.03/lb. .25	
Pick-Up Operation				Pick-up	750 mi	.12/mi	90.00		90.00
Management & Labor Supervision	50	4.27	213.50						213.50
Miscellaneous Repairs	20	4.27	85.40						85.40
TOTALS			\$ 815.86				\$ 656.07	\$ 1450.55	\$ 2922.48

and taxes. The fixed costs of machinery are allocated to tart cherries on the basis of hours of use relative to the total hours of use of the equipment on the farm. Fixed costs on machinery include depreciation, interest on investment, insurance and housing costs (interest, insurance and housing equal 9.7 percent of average value).

A grower should evaluate his own farm situation and decide whether fixed costs should be considered as part of the total cost for his decision-making purposes. One example of this type of consideration is the fact that

Table 3. Cash harvest cost for 60 cwt. of tart cherries, western Michigan, 1979

	Total	Your farm cost
Full-time labor (4 hrs.)	\$ 17.08	_____
Custom shaking (\$.075/lb)	450.00	_____
Well and Pad, 3 T @ \$1.60/T.	4.80	_____
Total	\$471.88	_____

Table 4. Overhead costs for growing and harvesting one acre of tart cherries, western Michigan, 1979

	Total	Your farm cost
Machinery	\$113.41	_____
Interest on average value		
a) \$1500 orchard value + 2 x .08	60.00	_____
b) \$ 800 land value x .05	40.00	_____
Orchard depreciation \$1500 + 15 years	100.00	_____
Taxes	15.00	_____
Total	\$328.41	_____

orchard overhead is a fixed cost to the owner, but if the orchard is rented, it is a variable cost for the operator.

Per-acre yields are very important factors in determining production costs per hundredweight (Table 6). In computing per hundredweight costs, it was assumed that preharvest costs per acre, such as spraying, pruning, cultivation, etc., do not vary greatly regardless of the yield obtained. Custom harvest rates were charged at 7.5 cents per pound harvested. This rate might change with heavier or lighter yields.

Table 5. Total costs for growing and harvesting one acre of tart cherries, western Michigan, 1979

	Total	Your farm cost
Variable		
Growing	\$292.23	_____
Harvesting	471.88	_____
Overhead costs	328.41	_____
Total	\$1,092.52	_____

Table 6. Effect of varying yield on cost/hundredweight for tart cherries, western Michigan, 1979

Yield per acre	Variable growing cost	Variable harvest cost	Total variable cost	Your farm variable cost	Over-head cost	Total cost	Your farm total cost
----- Per hundredweight -----							
20	\$14.61	\$7.86	\$22.47	_____	\$16.42	\$38.88	_____
30	9.74	7.86	17.60	_____	10.95	28.55	_____
40	7.31	7.86	15.17	_____	8.21	23.38	_____
50	5.84	7.86	13.70	_____	6.57	20.27	_____
60	4.87	7.86	12.73	_____	5.47	18.20	_____
70	4.17	7.86	12.03	_____	4.69	16.72	_____
80	3.65	7.86	11.51	_____	4.11	15.62	_____