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Costs of Tart Cherry Production in Western Michigan

By Myron Kelsey¹ and Scott VanDerbeck²

THIS COST EVALUATION of tart cherry production in western Michigan is an update 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 Tables 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 \$3.50 per hour rate. As a result, producers who do a major portion of the work may have a lower cash labor cost than the figures indicate.

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 8.6¢ per pound was computed.

The overhead, or fixed cost, for cherry production

Table 2. Cash cost per acre of growing tart cherries, western Michigan, 1976.

Operation	Labor	Machinery	Materials	Total	Your farm cost
Hedging, trimming & brush removal	\$ 6.86	\$10.64	\$ 0.00	\$ 17.50	_____
Fertilizer — lime	2.45	1.38	31.63	35.46	_____
Weed control	2.10	.84	1.68	4.62	_____
Mowing — discing	8.68	10.27	0.00	18.95	_____
Spraying	16.57	19.34	45.09	81.00	_____
Tree replanting & orchard clean-up	3.59	1.67	5.73	10.99	_____
Management & misc. repairs	49.00	0.00	0.00	49.00	_____
Other	0.00	8.95	12.20	21.15	_____
Totals	\$89.25	\$53.09	\$96.33	\$238.67	_____

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Table 1.
 Growing Operations and Related Variable Costs For
 10 Acres of Red Tart Cherries
 in Western Michigan, 1976
 (108 Trees Per Acre)

Operation	Labor			Equipment			Materials			Your Farm Cost
	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	
Hedging - Custom Hired One Year in Five @ \$47.50/Acre - 1 Year Cost			\$ 95.00							\$ 95.00
Trimming (Per Year Average Cost)	22	2.48	54.56	Chain Saw	2	.52	1.04			55.60
Removing Brush	4	3.50	14.00	Large Tractor (New) Brush Rake or Mower	4	2.37	9.48			24.40
Fertilizer	5	3.50	17.50	Small Tractor Fertilizer Spreader	5	1.46	7.30	33-0-0 @ 300#/Acre @ \$158.65/Ton	\$237.97	264.02
Fertilizer (Applied Every Third Year)	2	3.50	7.00	Large Tractor (New) Fertilizer Spreader	2	2.37	4.74	250# of Potash Every Third Year @ \$108/Ton	45.00	57.24
Lime (Applied Every Third Year)								1 Ton Every Third Year Custom Applied at \$10.00 Per Ton	33.33	33.33
Weed Control (Spray .25 Area)	6	3.50	21.00	Small Tractor Weed Sprayer	5	1.46	7.30	Simazine @ .5# Per Acre Sprayed @ \$3.20/Lb. 1 Pint Paraquat Per Acre Sprayed @ \$9.13/Qt. Sticker-1/2 Pint @ \$1.15/Pt.	4.00	46.25
Mowing (3 Times)	30	2.48	74.40	Large Tractor (Used) Rotary Mower	30	2.41	72.30			162.60
Discing	5	2.48	12.40	Large Tractor (Used) Disc	5	.53	15.90			26.85
Bee Rental								1 Hive Per 2 Acres @ \$18.00/Hive	90.00	90.00

Table 1.

Operation	Labor			Equipment			Materials			Your Farm Cost
	Labor Hr. per 10 Acres	Wage Rate	Cost per 10 Acres	Equipment Used	Hours of Use	Cost per Hour	Cost per 10 Acres	Item	Total Cost Per 10 Acres	
<u>SPRAY PROGRAM</u>										
Bloom	3	3.50	10.50	Large Tractor (New) Air Blast Sprayer	3	2.37 4.04	7.11 12.12	Phygon - 1.25#/Acre @ \$3.82/lb.	\$47.80	\$77.53
Petal Fall	4	3.50	14.00	Large Tractor (New) Air Blast Sprayer	4	2.37 4.04	9.48 16.16	Cyprex - 1#/Acre @ \$3.66/Lb. Guthion 50% W.P. 1.5#/Acre @ \$3.10/Lb.	36.60 46.50	122.74
1st & 2nd Cover Sprays	8	3.50	28.00	Large Tractor (New) Air Blast Sprayer	8	2.37 4.04	18.96 32.32	Cyprex - 1#/Acre/Spray @ \$3.66/Lb. Ferbam - 1/2#/100 Gal. @ \$1.22/Lb. Lead 1 1/2#/100 Gal. @ \$.37/Lb. Sulphur 3#/100 Gal. @ \$.20/Lb.	73.20 48.80 44.40 48.00	293.68
Post Harvest Spray	4	3.50	14.00	Large Tractor (New) Air Blast Sprayer	4	2.37 4.04	9.48 16.16	Difolitan - 3.75 Pints Per Acre @ \$9.40/Gal.	44.07	83.71
Lesser Peach Borer Spray	40	2.48	99.20	Large Tractor (New) High Pressure Sprayer	20	2.37 .75	47.40 15.00	Thiodan - .5 Gal. Per Acre @ \$12.30/Gal.	61.50	223.10
Well & Pump Operation				Electricity & Repairs	10A	.92/A	9.20			9.20
Mousebaiting (Custom Applied)				Airplane @ \$1.45/Acre			14.50	Zinc Phosphide Corn	32.00	46.50
Tree Replanting (Annual Cost During First Half of Orchard Life)	2.5	2.48	6.20	Small Tractor Trailer	1 1	1.46 .16	1.46 .16	Trees 1.5/Acre @ \$3.00	45.00	52.82
Orchard Clean-Up	12	2.48	29.76	Large Tractor (Used) Trailer	6 4	2.41 .16	14.46 .64	Grafting Emulsion .1 Gal./ Acre @ \$10.00/Gal. 1/2# Phygon/Gal. @ \$3.82/Lb. 1/8# Thiodan/Gal. @ \$2.66/Lb.	10.00 1.92 .33	57.11
Pick-Up Operation				Pick-Up	750 Mi.	.10/Mi.	75.00			75.00
Management & Labor Supervision	100	3.50	350.00							350.00
Miscellaneous Repairs	40	3.50	140.00							140.00
TOTALS			<u>\$892.52</u>				<u>\$530.89</u>		<u>\$963.27</u>	<u>\$2386.68</u>

(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 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.

Table 3. Cash harvest cost for 60 cwt. of tart cherries, western Michigan, 1976.

	Total	Your farm cost
Full-time labor (4 hrs.)	\$ 14.00	_____
Custom shaking (\$.086/lb.)	516.00	_____
Equipment	12.00	_____
Total	\$542.00	_____

Table 4. Overhead costs for growing and harvesting one acre of tart cherries, western Michigan, 1976.

	Total	Your farm cost
Machinery	\$ 80.62	_____
Interest on average value of orchard [$\$600 \text{ orchard value} \div 2 + \500 land value] $\times .08$	64.00	_____
Orchard depreciation $\$600 \div 15 \text{ years}$	40.00	_____
Taxes	12.00	_____
Total	\$196.62	_____

poses. One example of this type of consideration is the fact that 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 ranged from 4.5 to 11 cents per pound harvested for 108 and 32 hundredweight respectively.

Table 5. Total costs for growing and harvesting one acre of tart cherries, western Michigan, 1976.

	Total	Your farm cost
Variable		
Growing	\$238.67	_____
Harvesting	542.00	_____
Overhead costs	196.62	_____
Total	\$977.29	_____

Table 6. Effect of varying yield on cost/hundredweight for tart cherries, western Michigan, 1976.

Yield per acre	Variable growing cost	Variable Harvest cost	Total variable cost	Your farm variable cost	Overhead cost	Total cost	Your farm total cost
Per hundredweight							
20	\$11.93	\$10.50	\$22.43	_____	\$9.83	\$32.26	_____
30	7.96	11.73	19.69	_____	6.55	26.24	_____
40	5.97	10.89	16.86	_____	4.92	21.78	_____
50	4.77	9.93	14.70	_____	3.93	18.63	_____
60	3.98	9.03	13.01	_____	3.28	16.29	_____
70	3.41	8.16	11.57	_____	2.81	14.38	_____
80	2.98	7.25	10.23	_____	2.46	12.69	_____