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Michigan State University
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Myron Kelsey, Stephen Harsh, and Harvey Belter
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Economics of Peach Production in Southwestern Michigan

by Myron Kelsey, Stephen Harsh, Harvey Belter¹

This cost evaluation of peach production in southwest Michigan was obtained through a small group discussion method at a half-day session with peach growers. Growers described common growing and harvesting practices and prices paid for inputs used by average peach growers of the area. They agreed upon the size of peach acreage, equipment and cultural practices generally used by an average peach grower.

It should be stressed that these figures do not reflect the average cost of peach production for all growers in the area because higher than average yields have been assumed. You should not assume the figures reflect your cost of production because costs vary considerably from farm to farm.

The data can help you develop costs and better evaluate your farm situation. Each of the appropriate tables in this report includes a "Your Farm Cost" column for you to note your own cost for particular operations for the total peach enterprise. For operations where your costs cannot be determined, you may wish to adjust and substitute the study data.

The data were assembled assuming equipment and labor available for a hypothetical farm of 80 acres of diversified tree fruit, including 20 acres of peaches. However, the data are presented for 10 acres of peaches since it may be easier for a grower to visualize many of the resource inputs on this basis. Per acre costs can be determined by dividing by 10.

The full time labor classification includes the working time of the operator and regular hired help devoted to peaches. 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 \$2.81 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 cost, salvage value, years of life, annual usage, repair costs, insurance, interest, and operating expenses such as gas and oil. The operating costs for each item 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 or yield of peaches.

Examples of such costs are spray material, fertilizer, hired labor, and machinery operating costs.

Fixed costs are those that do not change as the acreage or yield of peaches within the farm unit is increased or decreased. Such costs include taxes, interest on investment, and machinery depreciation. Total variable and fixed costs are shown as total growing, harvesting and overhead costs in Table 2.

Variable costs incurred in peach production are categorized by labor, machinery and materials in Table 3. 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 an individual 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 a sufficiently higher yield or improved quality.

The variable costs incurred in the harvesting of 10 acres with estimated total production of 1,750 bushels of peaches are shown in Table 4. Labor is the major cost. Therefore, good labor management will enhance the profit picture. In *most* cases, there will be some economies or diseconomies for *some* cost items associated with higher or lower yields.

The fixed cost for peach production (Table 5) includes allocation of machinery overhead on the basis of the proportion of total farm use in peaches, interest on orchard investment and orchard depreciation, and taxes. The fixed costs of machinery are allocated to peaches on the basis of hours of use on peaches 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 (investment, insurance and housing equal 8.2 percent). Orchard overhead includes orchard-depreciation, interest on investment in the orchard and land, and taxes.

You should evaluate your own situation and decide whether fixed costs should be considered as part of the total cost for decision-making purposes. Orchard overhead is a fixed cost to the owner, but a variable cost for the operator, if rented. *(Text continued on page 4)*

¹ Professor, Associate Professor, Department of Agricultural Economics, Michigan State University, and Berrien County Extension Agricultural Agent.

Table 1.
Growing operations and related variable costs for
10 acres of peach production
in southwestern Michigan, 1976
(88 trees/acre)

Operation	Labor			Machinery				Materials		Total Cost Per 10 Acres	Your Farm Cost
	Labor Hr. Per 10 Acres	Wage Rate	Cost	Equipment Used	Hours of Use	Cost per Hour of Use	Cost	Item	Cost per 10 Acres		
Hedging — Custom operation every other year (2 acres/hr. at \$30/hr.) — 1 yr. cost										\$ 75.00	_____
Removing dead wood (each year)	15	2.48	37.20	Chain saw	15	2.90	43.50			97.80	_____
				Small tractor	15	1.07	16.05				
				Trailer	15	.07	1.05				
Fine pruning (every other yr.)	80	2.81	224.80	Power pruner	50	.06	3.00	479.70 + 2	239.85	_____	
	80	2.48	198.40	Small tractor	50	1.07	53.50				
Brush removal - (every other yr.)	12	2.48	29.76	Small tractor	3	1.07	3.21	43.20 + 2	21.60	_____	
	3	2.81	8.43	Brush rake	3	.60	1.80				
Fertilizer	5	2.81	14.05	Large tractor Spreader	5	1.51	7.55	200# 33-0-0/acre at \$165/ton	\$165.00	188.35	_____
Fertilizer (spread every 3rd year)	2	2.81	5.62	Large tractor Spreader	2	1.51	3.02	300# Potash at \$105/ton	157.50	55.61	_____
					2	.35	.70				
Weed spray (1/3 area per spray)	6	2.81	16.86	Small tractor Weed sprayer	6	1.07	6.42	Paraquat at 1/2 pt. per acre sprayed at 4.50/pint	7.42	53.73	_____
					6	.18	1.08	1/2 pt. spreader/acre sprayed at 1.30/pt.	2.15		
								2# Simazin/acre sprayed at 3.00/lb.	19.80		
Second weed spray			16.86				7.50	29.37	53.73	_____	
Mowing	4	2.81	11.24	Large tractor Mower	4	1.51	6.04			18.72	_____
					4	.36	1.44				
Peach borer spray (annually)	5	2.81	14.05	Small tractor	5	1.07	5.35	Thiodan 50% w.p. 1.5 lbs/100 gal. at 2.75/lb. 1 gal. spray 1 tree	41.25	86.95	_____
	10	2.48	24.80	Pressure sprayer	5	.30	1.50				
Spray Program											
Dormant (125 gal/A)	2.5	2.81	7.02	Large tractor Air Bl. sprayer	2.5	1.51	3.78	Ferbam 1 1/2 lb/100 gal. at 1.22/lb.	\$ 22.88	\$ 40.08	_____
					2.5	2.56	6.40				
Pink (125 gal/A)	2.5	2.81	7.03	Large tractor Air Bl. sprayer	2.5	1.51	3.78	Parathion 1 lb/100 gal at .50/lb.	6.25	23.46	_____
Bloom spray (125 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Benlate 1 lb/acre at 8.30/lb.	83.00	103.64	_____
					3	2.56	7.68				
Dust during bloom	1	2.81	2.81	Small tractor Duster	1	1.07	1.07	Sulfur dust 20 lb/acre at \$.38/lb.	76.00	80.45	_____
Petal fall (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Benlate 1 lb/acre at 8.30/lb.	83.00	103.64	_____
					3	2.56	7.68				
Shuck split (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Captan 2 lb/100 gal. at .86/lb. Cyprex 1/2 lb/100 gal. at 3.55/lb.	34.40	90.54	_____
					3	2.56	7.68				

Table 1.

Operation	Labor			Machinery				Materials			Your Farm Cost
	Labor Hr. Per 10 Acres	Wage Rate	Cost	Equipment Used	Hours of Use	Cost per Hour of Use	Cost	Item	Cost per 10 Acres	Total Cost Per 10 Acres	
1st cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Wettable sulfur 5 lb/100 gal. at .17/lb.	17.00	115.64	_____
					3	2.56	7.68				
2nd Cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Wettable sulfur 5 lbs/100 gal. at .17/lb.	17.00	115.64	_____
					3	2.56	7.68				
3rd Cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Wettable sulfur 5 lbs/100 gal. at .17/lb.	17.00	110.84	_____
					3	2.56	7.68				
4th Cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Wettable sulfur 5 lb/100 gal. at .17 lb.	\$ 17.00	\$ 115.64	_____
					3	2.56	7.68		Sevin 2 lb/100 gal. at 1.95/lb.		
1st Pre-harvest cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Captan 2 lb/100 gal. at .86/lb.	34.40	90.54	_____
					3	2.56	7.68				
2nd Pre-harvest Cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Benlate 1 lb. per acre at 8.30/lb.	83.00	103.64	_____
					3	2.56	7.68				
3rd Pre-harvest Cover (200 gal/A)	3	2.81	8.43	Large tractor Air Bl. sprayer	3	1.51	4.53	Benlate 1 lb. per acre at 8.30/lb.	83.00	103.64	_____
					3	2.56	7.68				
Hand thinning	200	2.48	496.00							496.00	_____
Tying trees (40 trees/10 A)	10	2.48	24.80					4 clips per tree at .04 each.	16.80	41.60	_____
Tree replacement	5	2.81	14.05	Tree auger Small tractor	2.5	.15	.38	2 trees/acre at 2.00	40.00	57.10	_____
					2.5	1.07	2.67				
Late fall tree core	2	2.81	14.05	Chain saw	2.5	2.90	7.25			21.30	_____
Mice control	2	2.81	5.62	Small tractor Fertilizer spreader	2	1.07	2.14	50 lb. on selected area at .10/lb.	5.00	13.46	_____
					2	.35	.70				
Paint trees (every 8 yrs.)	20	2.48	49.60					7.5 gal paint at 6.00/gal. Pair gloves at 3.50	48.50	12.26	_____

Average yields per acre obtained are very important factors in determining production costs per bushel of peaches (Table 6). These figures are based on the assumption that preharvest costs per acre, such as spraying, pruning, cultivation, etc., do not vary greatly regardless of the yield obtained.

Table 2. Growing and harvesting cost for one acre of peaches, southwestern Michigan, 1976

	Total	Your farm cost
Cash growing cost	\$274.53	_____
Cash harvest cost	98.29	_____
Overhead cost	267.96	_____
Total	\$640.78	_____

Table 3. Cash cost per acre of growing peaches, southwestern Michigan, 1976

	Labor	Machin- ery	Materials	Total	Your farm cost
Pruning & brush removal	\$44.41	\$.50	\$	\$ 43.43	_____
Fertilization	1.59	1.06	21.75	24.49	_____
Weed Spray	4.50	2.24	5.88	12.62	_____
Spraying	14.01	15.10	99.34	128.43	_____
Thinning	49.60			49.60	_____
Tree main- tenance	5.29	1.03	5.68	12.00	_____
Other	1.17		1.10	2.57	_____
Total				\$273.05	_____

Table 4. Cash harvest cost for 175 bushels of peaches, southwestern Michigan, 1976

	Total	Your farm cost
Regular Labor (60 Hrs.)	\$16.86	_____
Piecework Labor (.40/Bu.)	70.00	_____
Equipment Use	11.43	_____
Total	\$98.29	_____
Cost Per Bushel	\$.56	_____

Table 5. Overhead cost for growing and harvesting one acre of peaches, southwestern Michigan, 1976

	Total	Your farm cost
Machinery	\$ 97.96	_____
Interest on Orchard (\$1000/Acre at 8%)	80.00	_____
Orchard Depreciation (\$600 ÷ 8 Yrs.)	75.00	_____
Taxes	15.00	_____
Total	\$267.96	_____

Table 6. Effect of varying yield on cost/bushel for peaches, southwestern Michigan, 1976

Harvest yield per acre	Cash growing cost	Cash harvest cost	Total cash cost	Your farm cash cost	Fixed cost	Total cost	Your farm total cost
	-----Bushel-----						
50	\$5.49	\$1.97	\$7.46		\$5.36	\$12.82	_____
100	2.74	.98	3.72		2.68	6.40	_____
150	1.83	.65	2.48		1.79	4.59	_____
175	1.57	.56	2.13		1.53	3.66	_____
200	1.37	.49	1.86		1.34	3.20	_____
250	1.10	.39	1.49		1.07	2.56	_____
300	.92	.33	1.25		.89	2.14	_____