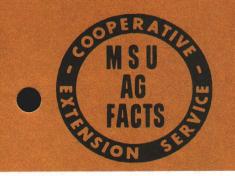
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Costs of Pear Production in Western Michigan Michigan State University Cooperative Extension Service Myron P. Kelsey, Professor, Department of Agricultural Economics Archie Johnson, Specialist, Department of Agricultural Economics June 1979 4 pages

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Costs of Pear Production In Western Michigan

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Revised June 1979

BY MYRON P. KELSEY AND ARCHIE JOHNSON¹

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

It should be stressed that these figures do not reflect the average cost of pear production for all growers in the state because costs vary considerably by area in the state and from farm to farm.

The data were assembled, assuming equipment and labor available for a hypothetical farm of 100 acres of diversified tree fruit, including 10 acres of pears. However, the data in Table 1 are presented for 10 acres of pears 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 to 6, can be determined from Table 1 (p. 2-3) by dividing by 10.

The full-time labor classification includes the working time of the operator and regular hired help devoted to pears. 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 by the operator, both have been included at the \$4.27 per hour rate. This rate is a basic wage of \$3.50 per hour plus social security (6.13%) and workers' compensation (16%). Hourly labor was paid a basic wage of \$2.90 which equals \$3.54 with S.S. and W.C. 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 computing 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 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 hours of use of the equipment.

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

Variable costs incurred in pear production are categorized by labor, machinery and operating materials in Tables 1 and 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 an individual grower's costs for particular items are substantially higher than those shown, he may need to analyze those components closely 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 harvesting an acre with estimated total production of 200 bushels of pears are shown in Table 3. These costs totaled \$1.04 per bushel.

The overhead, or fixed cost, for pear production (Table 4) includes allocation of machinery overhead on the basis of the proportion of total farm use in pears, interest on orchard investment, orchard depreciation, and taxes. The fixed costs of machinery are allocated to pears 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 orchard overhead is a fixed cost to the owner, but if the orchard is rented, it is a variable cost for the operator.

Yield per acre is a very important factor in determining production costs per bushel (Table 6). In computing per bushel costs, it was assumed that pre-harvest costs per acre, such as spraying, pruning, cultivation, etc., do not vary greatly regardless of the yield obtained.

¹Professor and Specialist, Department of Agricultural Economics.

COOPERATIVE EXTENSION SERVICE . MICHIGAN STATE UNIVERSITY

2		Labor			Machinerv			Materiale		Tatal
Operation	Labor Hr. Per 10 Acres		Cost	Equipment Used	Hours of Use	Cost Per Hour of Use	Cost	I tem	Cost Per 10 Acres	Cost Per 10 Acres
Hedging - Custom hired	Custom hired every 4 years:	ars: (1.5	.5 acres/hr at	at \$40/hr)	1 yr Cost		\$ 66.67		10103	\$ 66.67
Trimming & Blight Limb Removal	660	\$4.27	\$2818.20	Pruning Tower Chain Saw	220 22	\$.72	158.40 12.54			2989.14
Brush Removal	25 5	3.54	88.50 21.35	60 HP Tractor Brush Rake	ى ى	2.95	14.75 1.25			125.85
Fertilize-Nitrogen	7	4.27	29.89	40 HP Tractor Fert. Spreader	~ ~	2.21	15.47 2.80	400# 33-0-0 @ \$181.70/ton	\$363.40	411.56
<pre>Fertilize-Potash (1/3 of cost)</pre>	m	4.27	12.81	40 HP Tractor Fert. Spreader	ოო	2.21	6.63 1.20	180#/3 0-0-60 @ \$132/ton	39.60	60.24
Weed Control	2	4.27	21.35	40 HP Tractor Lleed Sprayer	വ വ	2.21 •38	11.05 1.90	.5 lb/A Simizin @ \$3.50/lb. l qt/A Paraquat @ \$10.50/qt.	17.50	156.80
Spray Program 0il Spray	7	4.27	29.89	60 HP Tractor	. 2	2.95	20.65	2 gal/100 gal. Oil @	105 60	187 85
400 gal dilute/A				Air Blast Sprayer	7	4.53	31.71			CO- /01
Cluster Bust 300 gal dilute/A	ى ا	4.27	21.35	60 HP Tractor Air Blast Sprayer	ى ي	2.95	14.75 22.65	1 1b/100 gal. Guthion @ \$4.25/1b. 2 1b/100 gal. Copper 53 @ \$1.17/1b. 4 1b/100 gal. Lime @ \$.05/1b.	127.50 70.20 6.00	262.45
Petal Fall 300 gal dilute/A	2	4.27	21.35	60 HP Tractor Air Blast Sprayer	ט ט	2.95 4.53	14.75 22.65	1 1b/100 gal. Guthion @ \$4.25/1b. 1.5 1b/100 gal. Ferbam @ \$1.15/1b.	127.50 51.75	238.00
lst Cover Spray 300 gal dilute/A	a	4.27	21.35	60 HP Tractor Air Blast Sprayer	പറ	2.95 4.53	14.75 22.65	1 1b/100 gal. Guthion @ \$4.25/1b. 1.5 1b/100 gal. Ferbam @ \$1.15/1b.	127.50 51.75	238.00
2nd Cover Spray 300 gal dilute/A	a	4.27	21.35	60 HP Tractor Air Blast Sprayer	പറ	2.95 4.53	14.75 22.65	1 lb/100 gal. Guthion @ \$4.25/1b. 1.5 lb/100 gal. Ferbam @ \$1.15/1b.	127.50 51.75	238.00
3rd Cover Spray 300 gal dilute/A	a	4.27	21.35	60 HP Tractor Air Blast Sprayer	വ വ	2.95 4.53	14.75 22.65	1 1b/100 gal. Guthion @ \$4.25/1b. 1.5 1b/100 gal. Ferbam @ \$1.15/1b.	127.50 51.75	238.00
4th Cover Spray 300 gal dilute/A	ы	4.27	21.35	60 HP Tractor Air Blast Sprayer	ما ما	2.95	14.75 22.65	l lb/100 gal. Guthion @ \$4.25/1b. 1.5 lb/100 gal. Ferbam @ \$1.15/1b. 1 lb/100 gal. Sevin @ \$1.60/1b.	127.50 51.75 48.00	286.00

Table 1. Growing operations and related variable costs for 10 acres of pear production in western Michigan, 1979

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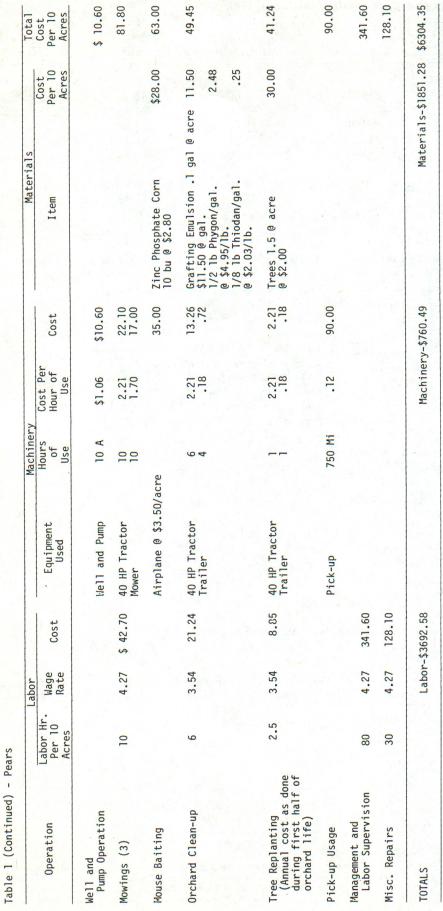




Table 2. — Variable costs per acre for growing pears, western Michigan, 1979.

Operation	Labor	Machinery	Materials	Total	Your farm cost
Hedging, trimming				S. C. A.	
and brush removal	\$292.80	\$25.36	\$ 0.00	\$318.16	
Fertilizer	4.27	2.61	40.30	47.18	
Weed spray	2.13	1.30	12.25	15.68	
Spraying	15.81	27.68	125.36	168.84	
Mowing	4.27	3.91	0.00	8.18	
Management and					
misc. repair	46.97	0.00	0.00	46.97	
Other & mouse bait	3.01	15.20	7.22	25.43	
TOTALS	\$369.25	\$76.06	\$185.13	\$630.44	

Table 3. — Variable harvest costs for 200 bushels of pears, western Michigan, 1979.

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

	Total Your farm cost
Regular full-time labor (6.25 hrs.)	\$ 26.69
Piecework labor (\$.80/bu)	160.00
Equipment use	22.16
TOTAL	\$ 208.85
Cost per bushel	\$ 1.04

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

	Total	Your farm cost		
Cash growing cost	\$ 630.44			
Cash harvest cost	208.85			
Overhead cost	331.98	and the second second		
TOTAL	\$1171.27			

	Total	Your farm cost
Machinery	\$105.98	
Interest on land ($\$800 \times 5\%$)	40.00	
Interest on average orchard value (\$1200 ÷ 2 × 8%) Orchard depreciation	48.00	
(\$1200 ÷ 10 yrs)	120.00	and the second second
Property Taxes	18.00	
TOTAL	\$331.98	

Table 6. - Effect of varying yields on cost/bushel for pears, western Michigan, 1979.

Harvest yield per acre	Variable growing cost	Variable harvest cost	Total cash cost	Your farm cash cost	Overhead cost	Total cost	Your farm total cost
Bu.				Per bushel			
50	\$12.61	\$1.04	\$13.65		\$6.64	\$20.29	
100	6.30	1.04	7.34	and the state of the	3.32	10.66	100
150	4.20	1.04	5.24		2.21	7.45	and the second
200	3.15	1.04	4.19		1.66	5.85	
250	2.52	1.04	3.56		1.33	4.89	and the second second
300	2.10	1.04	3.14		1.11	4.25	

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