

May 1972

A.E. Ext. 72-11



**FINGER LAKES GRAPE FARM
BUSINESS SUMMARY AND ANALYSIS**

31 Grape Farms

1971

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FARM BUSINESS SUMMARY AND ANALYSIS

31 FINGER LAKES GRAPE FARMS

1971

This is a summary and analysis of the 1971 farm business records of 31 commercial grape farms in the Finger Lakes Area of New York State. The records were obtained on a survey form by Gilbert C. Smith, Cooperative Extension Specialist, Grape Industry, Penn Yan, New York, and T. W. Markham, Cooperative Extension Agent, Steuben County, Bath, New York. The summarization was done by Edna Wheeler under the direction of C. D. Kearl.

The 31 farms included in this report are among the largest and most highly specialized grape farms in the Finger Lakes Area. Only a few of them had farm enterprises other than grapes. The 31 farms produced and sold 10,260 tons of grapes in 1971. This is 17 percent of the total Finger Lakes Area crop, produced by about 5 percent of the growers.

Eleven of these 31 farms owned and operated grape harvesters in 1971 either alone or in partnership with other growers. Most of the others had at least a part of their 1971 crop harvested by machine. Custom rates for grape harvest ranged from \$27.50 to \$30 per ton, with \$30 per ton the most common rate. Costs and returns on some of these farms are, therefore, influenced by their involvement in custom grape harvesting.

Although this is not an average or typical group of growers, this report does provide a framework which any grape grower can use to summarize and analyze his own farm business. It also provides useful standards for comparison.

The years 1969, 1970 and 1971 were relatively good for Finger Lakes Area grape growers. The weighted average price of grapes increased from \$156 per ton in 1968 to more than \$200 in 1969, 1970 and 1971. The total Finger Lakes Area grape crop delivered to processors was 41,011 tons in 1969 and 46,898 tons in 1970 and 60,400 tons in 1971. The total Finger Lakes Area crop delivered to processors during the 15 previous years (1954-1968) ranged from 14,314 tons in 1957 to 35,797 tons in 1967 and averaged 28,532 tons.

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Measuring The Profit From The Farm Business In 1971

Labor Income is the return to the farm operator for his work and management. In addition he has the use of a house and products from the farm. It is the amount left after paying all farm expenses, making allowance for depreciation of capital investments, and deducting a charge for the interest and for unpaid family labor other than that of the operator.

The average labor income per farm on the 31 farms was \$32,362.

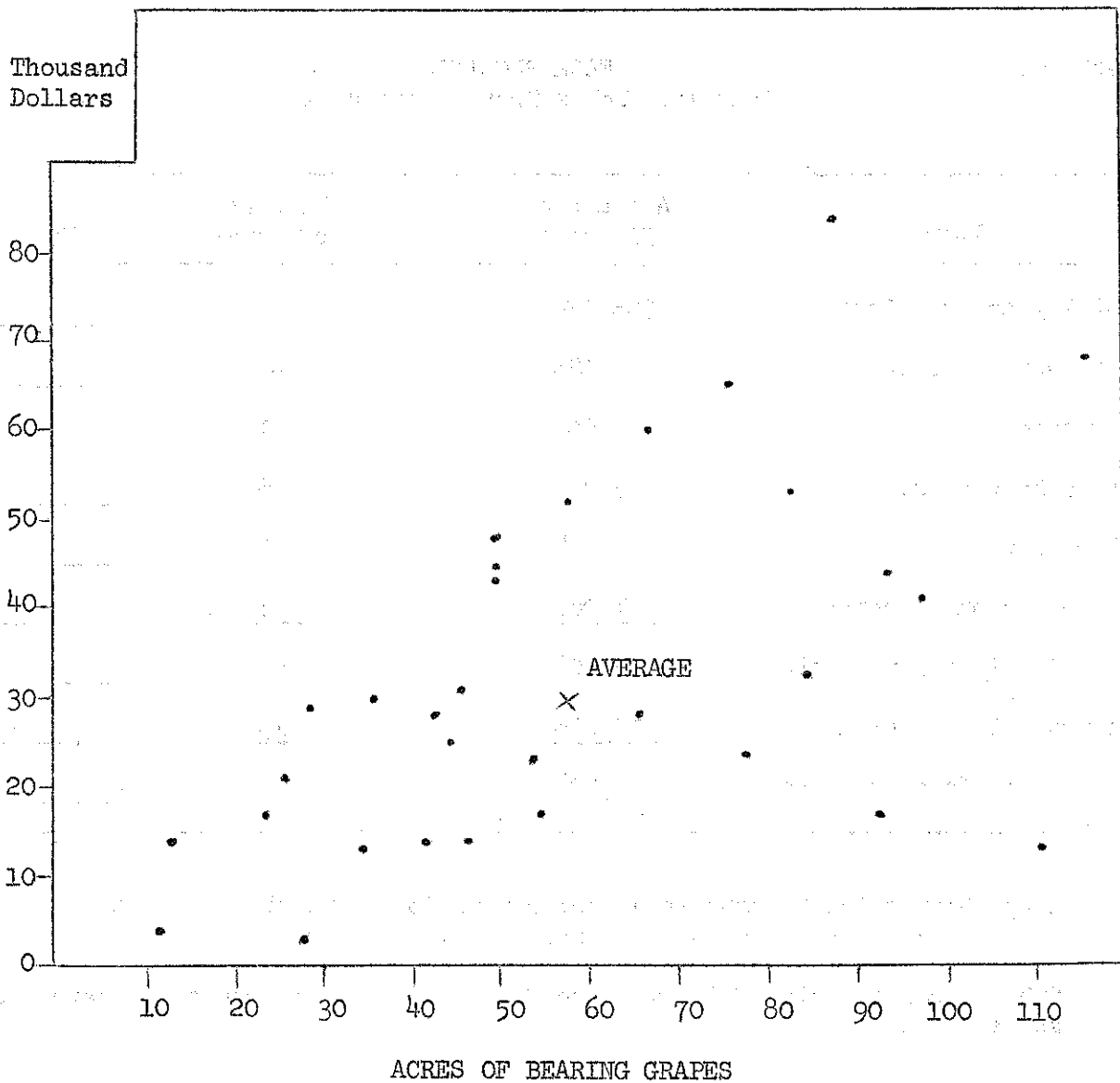
Table 1. MEASURING THE PROFIT FROM THE FARM BUSINESS IN 1971
31 Finger Lakes Grape Growers

Item	Average of 31 farms	My farm
Average farm inventory	\$119,007	\$ _____
Farm receipts, grapes	\$66,970	\$ _____
Farm receipts, other	<u>18,864</u>	_____
Total farm receipts	\$85,834	\$ _____
Farm expenses	45,142	_____
Farm income	\$40,692	\$ _____
Interest on capital @ 7 percent	<u>8,330</u>	_____
Labor income per farm	\$32,362	\$ _____
Number of operators	36	_____
Labor income per operator	\$29,546	\$ _____

Three farms had more than one operator. There were 36 operators on the 31 farms, and the average labor income per operator was \$29,546.

There was a wide range in the labor incomes earned by 31 Vineyardists. The largest was \$84,000 and the smallest \$2,600 (Figure 1).

Figure 1. DISTRIBUTION OF LABOR INCOME PER OPERATOR OF GRAPE FARMS OF DIFFERENT SIZES
31 Finger Lakes Grape Growers, 1971



Labor income tended to increase as the size of the enterprise increased. However, although all of the large farms made good returns, there was more variation of this measure of returns to farmers as the number of acres of bearing vineyard increased.

Grape sales comprised 78 percent of the total farm income (Table 2).

The second most important item was the increase in farm inventory. Although not an item of cash income, the increase in inventory could be converted to cash if the farmer wished and is a form of savings which accrued to the farmer during the year. It may have been the result of purchases which were included in the cash expenditures or it may have resulted from a production activity such as growing a vineyard.

Table 2.

FARM RECEIPTS
31 Finger Lakes Grape Growers, 1971

Item	Average of 31 farms	Percent of total	My farm
Total grape receipts	\$66,970	78	\$ _____
Other crop receipts	288	--	_____
Livestock	605	1	_____
Grape harvesting	5,333	6	_____
Other work	744	1	_____
Miscellaneous receipts	<u>1,068</u>	<u>1</u>	_____
Total cash receipts	\$75,008	87	\$ _____
Increase in inventory	<u>10,826</u>	<u>13</u>	_____
Total farm receipts	\$85,834	100	\$ _____

Grape harvesting brought in a good return for farms where mechanical harvesters were owned and used for custom work.

Other small amounts of income came from government payments, livestock sales, crop sales, etc.

Total farm expenses averaged \$45,142 in 1971 (Table 3). This included about \$11,000 in capital investments in the farm business.

Table 3. FARM EXPENSES
31 Finger Lakes Grape Growers, 1971

Item	Average of 31 farms	Percent of total	My farm
<u>Operating Expenses</u>			
Hired labor	\$13,319	30	\$ _____
Unpaid family labor	1,611	4	_____
Livestock expense	485	1	_____
Lime and fertilizer	2,402	5	_____
Seeds and plants	37	*	_____
Storage and containers	11	*	_____
Spray materials	1,675	4	_____
Vineyard and other crop expense	2,073	5	_____
Gas and oil	1,246	3	_____
Auto and truck	595	1	_____
Equipment repair	1,789	4	_____
Machine hire	3,665	8	_____
Real estate upkeep	281	*	_____
Telephone and insurance	403	*	_____
Taxes and insurance	2,305	5	_____
Miscellaneous farm expense	<u>2,137</u>	<u>5</u>	_____
Total Operating Expenses	\$34,034	75	\$ _____
<u>Capital Expenses</u>			
New buildings	\$ 1,020	2	\$ _____
New land	2,579	6	_____
New machinery	7,509	17	_____
Livestock bought	<u>-----</u>	<u>--</u>	_____
Total Capital Expenses	<u>\$11,108</u>	<u>25</u>	\$ _____
TOTAL FARM EXPENSES	\$45,142	100	\$ _____

* Less than one percent.

Hired labor was the largest operating expense and averaged \$13,319 per farm or 30 percent of the total cash expenditures. The combined equipment costs of gas and oil, auto and truck, equipment repair and new machinery totaled \$14,804, or 33 percent of all expenses.

The Labor Force

The average total work force on the 31 Finger Lakes grape farms was the equivalent of 3.8 full time workers (Table 4). There were 36 farm operators on the 31 farms. These and other family workers made up about 39 percent of the labor force. Seasonal employees accounted for about 40 percent of the labor force.

Table 4. LABOR FORCE
31 Finger Lakes Grape Growers, 1971

Category	Months	
	Average	My farm
Operators	13.9	_____
Other family	3.6	_____
Regular hired	8.7	_____
Seasonal hired	18.2	_____
Other hired	<u>1.0</u>	_____
Total	45.4	_____

Man Equivalent (Total ÷ 12)	3.8	_____

Acres of bearing grapes per man	15	_____
Tons of grapes sold per man	82	_____

The growers averaged 15 acres of bearing vineyard and produced 82 tons of grapes per man.

Capital and Capital Efficiency

The average investment in the farm business was \$119,007 (Table 5). This was mostly in the vineyards and farm buildings but there was a sizable amount of capital tied up in equipment. Livestock were kept on only a few of these farms.

Table 5. CAPITAL INVESTMENT AND CAPITAL EFFICIENCY FACTORS
31 Finger Lakes Grape Growers, 1971

Item	Average of 31 farms	Percent of total	My farm
Land and buildings	\$ 90,410	76	\$ _____
Machinery and equipment	24,299	20	_____
Supplies	3,760	3	_____
Livestock	538	1	_____
Total farm inventories	\$119,007	100	\$ _____
<hr style="border-top: 1px dashed black;"/>			
Man equivalent	3.8		_____
Investment per man	31,318		\$ _____
Number of acres of grapes	58		_____
Total farm investment per acre of grapes	2,052		\$ _____
Total farm investment per ton of grapes sold	383		\$ _____
Capital turnover (years for cash receipts to equal capital)	1.4		_____

Investment costs such as depreciation and interest are part of the total cost of operating a farm business. Obtaining efficiency in the use of capital, as measured by investment relative to productive capacity and income is an important part of managing a farm. The four factors calculated above can help a farmer gauge the soundness of his capital investment.

Power and equipment costs are major expenses on grape farms (Table 6). Efficiency in the use of equipment is an important factor affecting profits.

Table 6.

POWER AND MACHINERY COSTS*
31 Finger Lakes Grape Growers, 1971

Item	Average of 31 farms	My farm
Beginning inventory	\$22,216	\$ _____
New machinery bought	<u>4,934</u>	_____
Total	\$27,150	\$ _____
Ending inventory	26,184	\$ _____
Machinery sold	<u>-----</u>	_____
Total	\$26,184	\$ _____
Depreciation	\$ 966	\$ _____
Interest at 7% av. inventory	1,694	_____
Gas and oil	1,246	_____
Machinery repairs*	2,087	_____
Machine hire	3,665	_____
Auto expenses (farm share)	199	_____
Electricity (farm share)	<u>243</u>	_____
TOTAL MACHINERY COSTS	\$10,100	\$ _____
Acres of bearing grapes	58	_____
Machinery cost per acre of grapes	\$174	\$ _____
Man equivalent	3.8	_____
Machinery cost per man	\$2,657	\$ _____

* Does not include housing or repair labor costs.

Equipment and power are brought into a farm business to supplement and substitute for farm labor. How well the labor and equipment are combined is important in determining the efficiency and profitableness of the business.

Table 7. LABOR AND MACHINERY COSTS
31 Finger Lakes Grape Growers, 1971

Item	Average of farms	My farm
Value of operator's labor and management*	\$10,548	\$ _____
Hired labor	13,319	_____
Unpaid family labor	1,611	_____
TOTAL LABOR COSTS	\$25,478	\$ _____
Power and machinery costs	\$10,100	_____
TOTAL LABOR AND MACHINERY COSTS	\$35,578	\$ _____
<hr/>		
Acres of grapes	58	_____
Total labor and machinery cost per acre in bearing grapes	\$613	\$ _____
Total labor and machinery cost per ton of grapes sold	\$115	\$ _____
Man equivalent	3.8	_____
Total labor and machinery cost per man	\$9,363	\$ _____

* Valued at a rate of \$5,400 per operator per year plus 5 percent of the cash receipts. There were 36 operators on the 31 farms included in this study.

To be justified from a business point of view the purchase of equipment must result in enough labor saving or increased income to more than equal the annual operating costs of the equipment including depreciation, interest and repairs.

Factors Affecting Efficiency and Profits

A large farm enterprise can enable labor and cost efficiency as well as providing a large base on which to profit. As noted in considering Figure 1 the large farm businesses tended to have larger labor incomes and had greater variation in their profits than did the smaller ones.

Another way to look at the relationship of size of business to other factors of the 31 Finger Lakes grape farms is to divide into 3 groups according to their acreage of bearing grapes and see the changes in measures of efficiency and profits (Table 8).

Table 8.

RELATION OF ACRES OF GRAPES
TO COSTS AND RETURNS
31 Finger Lakes Grape Growers, 1971

Item	Acres of Bearing Grapes		
	Small	Middle	Large
Number of farms	10	11	10
Acres of grapes	29	53	92
Yield per acre	5.6	5.5	5.2
Cost per ton	\$184	\$141	\$150
Price per ton	\$229	\$221	\$208
Tons per Man Equivalent	64	91	91
Labor income	\$16,526	\$32,217	\$39,627

The "small acreage" group averaged 29 acres of grapes and made labor incomes averaging \$16,526. The "large acreage" group averaged 92 acres of grapes and made labor incomes which averaged \$39,627.

There was a tendency for yield to decrease slightly as acreage went up. Cost per ton and tons of grapes produced per man did not improve from the middle sized to the large farms. The combination of good labor and production efficiency on the "large farms" offset the somewhat lower yields and prices and enabled the farmers to make higher returns for their time than did their competitors.

Yield of grapes per acre also had an effect on profits (Table 9).

Table 9.

RELATION OF YIELD OF
GRAPES TO COSTS AND RETURNS
31 Finger Lakes Grape Growers, 1971

Item	Tons per Acre		
	Small	Middle	Large
Number of farms	10	11	10
Acres of grapes	63	64	47
Yield per acre	4.4	5.5	6.3
Cost per ton	\$193	\$142	\$140
Price per ton	\$212	\$225	\$220
Tons per Man Equivalent	70	84	93
Labor Income	\$19,228	\$33,329	\$35,702

High yields helped to enable farmers to have lower cost per ton and greater labor efficiency. Low yields, particularly, were associated with low labor efficiency, high costs and lower incomes.

The relation of output per man to other measures of efficiency and to profits was especially marked (Table 10). Farmers with high labor output, averaging 106 tons of grapes per man. They had good sized enterprises, high yields and a low cost per ton.

Table 10. RELATIONSHIP OF OUTPUT PER MAN
TO COSTS AND RETURNS
31 Finger Lakes Grape Growers, 1971

Item	Yield per Man		
	Small	Middle	Large
Number of farms	10	11	10
Yield per man	58	83	106
Acres of grapes	46	61	67
Yield per acre	5.2	5.3	5.8
Cost per ton	\$201	\$155	\$117
Price per ton	\$225	\$223	\$210
Labor Income	\$14,892	\$28,524	\$45,324

The labor incomes showed a very strong relationship to labor efficiency. The efficient farmers had three times as much return for their time as did their less successful competitors.

Farm Operating Efficiency

An analysis of the records for all 31 farms shows that among the farm business factors which affect profits and which a farmer can control are: (1) size of enterprise, (2) labor efficiency, (3) yields and (4) price.

A comparison with the averages of these factors for other farms provides valuable clues to the strong and weak points of an individual grape farm business (Table 11).

Table 11.

SELECTED FARM BUSINESS MEASURES 31 Finger Lakes Grape Growers, 1971

Item	Average of 31 farms	My farm
<u>Measures of Size</u>		
1. Acres in bearing grapes	58	_____
2. Acres in non-bearing grapes	5	_____
3. Man equivalent	3.8	_____
4. Tons grapes produced	310	_____
<u>Labor Efficiency</u>		
1. Acres in grapes per man	15	_____
2. Tons grapes produced per man	82	_____
<u>Production Factors</u>		
1. Grape yield per acre (tons)	5.4	_____
2. Grape receipts per acre of bearing grapes	1,149	\$ _____
<u>Price</u>		
1. Price per ton of grapes sold	215	\$ _____

Table 12.

AN ARRAY OF SELECTED BUSINESS FACTORS
31 Finger Lakes Grape Growers, 1971

Note: Each column is independent of the others. Do not read across.

Acres bearing grapes	Man equivalent	Tons grapes produced per man	Yield per acre of grapes	Investment per acre of grapes	Average price per ton	Cost of production per ton	Capital turnover (year for receipt to equal cap)
116	9.0	128	6.9	892	259	74	.7
111	8.0	119	6.7	1,103	257	92	.9
98	7.1	116	6.5	1,153	257	102	1.0
94	5.7	112	6.5	1,318	250	104	1.0
93	5.0	104	6.4	1,399	248	106	1.0
88	4.6	103	6.2	1,446	241	107	1.0
85	4.4	96	6.1	1,526	237	116	1.1
83	4.3	94	6.1	1,562	236	118	1.1
78	4.0	94	6.1	1,600	231	126	1.2
76	4.0	94	5.8	1,656	230	128	1.2
67	4.0	89	5.8	1,700	225	140	1.3
66	3.9	89	5.7	1,838	222	141	1.3
58	3.6	88	5.7	1,992	220	149	1.3
55	3.4	86	5.6	2,039	220	151	1.4
54	3.3	84	5.6	2,107	219	152	1.4
50	3.3	83	5.6	2,119	218	153	1.4
50	3.2	80	5.6	2,144	218	153	1.4
50	3.2	80	5.5	2,183	216	164	1.5
47	3.2	79	5.4	2,347	215	165	1.5
46	3.2	78	5.3	2,363	211	173	1.6
45	3.1	77	5.1	2,383	209	179	1.6
43	3.1	72	4.8	2,547	208	180	1.6
42	3.0	72	4.7	2,730	206	182	1.7
36	3.0	71	4.7	3,035	205	189	1.7
35	2.8	63	4.7	3,146	203	191	1.8
29	2.5	60	4.6	3,231	203	192	1.9
28	2.3	60	4.5	3,397	202	195	2.0
26	2.2	57	4.4	3,468	191	202	2.0
24	1.8	48	4.1	3,596	190	229	2.1
13	1.5	44	4.0	3,700	190	260	2.3
12	1.2	33	3.9	3,736	160	287	2.9

More exactly where a vineyardist stands relative to other growers can be seen by encircling the factor measurement for his farm in each column of the table above.

Over the years, if a farmer is making progress he should improve his efficiency relative to his own business and relative to his competitors.

The averages for grape farmers studied have shown a gradual improvement in most farm business factors (Table 13).

Table 13.

CHANGES IN FARM BUSINESS FACTORS
31 Finger Lakes Grape Growers, 1971

Item	1969		1970		1971	
	Average	My Farm	Average	My Farm	Average	My Farm
Number of farms	26	XXX	28	XXX	31	XXX
Acres of bearing grapes	56		57		58	
Man equivalent	3.9		3.6		3.8	
Tons of grapes produced per farm	230		258		310	
Tons of grapes produced per acre	4.1		4.5		5.4	
Average price	\$209		\$206		\$215	
Gross receipts per acre	\$860		\$931		\$1,149	
Tons produced per man	59		72		82	
Returns to labor and management	\$20,378		\$ 21,419		\$ 29,546	
Farm investment	\$92,450		\$110,421		\$119,007	
Capital turnover	1.7		1.8		1.4	

Varieties of Grapes

Concord grapes were the most common variety produced on these farms. These and the Elvira brought the lowest prices (Table 14). The most common other varieties were Catawba, Delaware and Aurora (Seibel 5279).

Table 14. ACREAGES, YIELDS AND PRICES
OF PRODUCING GRAPES
31 Finger Lakes Grape Growers, 1971

Variety	All Farms			My Farm		
	Total acres	Tons per acre	Price per ton	Total acres	Tons per acre	Price per ton
Concord	753.6	5.9	\$176			\$
Catawba	287.7	4.8	245			
Delaware	223.4	4.5	256			
Aurora (Seibel 5279)	216.8	5.0	225			
Ives	92.9	4.2	370			
Niagara	60.8	7.8	185			
Rougeon (Seibel 5898)	39.4	6.8	272			
Baco Noir (Baco #1)	35.9	2.6	224			
Elvira	24.8	6.8	172			
Dutchess	19.8	5.8	305			
Cascade (Seibel 13053)	16.5	4.6	219			
Isabella	11.2	7.3	305			
Other*	16.1	2.5	---			

* Includes Diamond, Rosette (Seibel 1000), VanBuren, Clinton and unidentified Vinifera varieties.

Yields of most varieties were higher than average in 1971. Where less than 50 acres are involved, the above yields should not be considered average or typical. Yield of any one such variety may be unduly influenced by one or more vineyards which are either on poor sites or not yet of full bearing age.

Non-Bearing Grapes

A total of 152 acres of new vineyard were planted on these 31 farms during the past four years (Table 15). Most if not all of the new plantings were made and the variety or varieties selected on the basis of agreements with processors.

Table 15.

ACREAGES OF NON-BEARING GRAPES
31 Finger Lakes Grape Growers, 1971

Variety	Year Planted			
	1968	1969	1970	1971
	- Total Acres - All Farms -			
Aurora (Seibel 5279)	6.5	19.0	3.5	5.0
Baco Noir (Baco #1)			26.6	10.5
Catawba	8.0		13.8	12.2
Delaware	5.8		4.8	6.0
Rougeon (Seibel 5898)			6.0	8.0
DeChaunac (Seibel 9549)			5.8	
Vignoles (Ravat 51)			2.0	
Elvira			2.0	
Cascade (Seibel 13053)		2.0		
Isabella		1.9		
Niagara	1.0			
Pinot Chardonnay				1.0
Other Vinifera				1.0