

# GRAPE FARM BUSINESS SUMMARY

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**FINGER LAKES REGION  
1982**

**D.B. Whitaker  
G.B. White  
T.J. Zabadal**

Department of Agricultural Economics  
New York State College of Agriculture and Life Sciences  
A Statutory College of the State University  
Cornell University, Ithaca, New York 14853

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# FINGER LAKES REGION GRAPE FARM BUSINESS

## SUMMARY AND ANALYSIS, 1982

This is a summary and analysis of the 1982 farm business records from 15 commercial grape farms in the Finger Lakes Region of New York. The summary was prepared by Daniel B. Whitaker and Gerald B. White, Department of Agricultural Economics, Cornell University; and Thomas Zabadal, Finger Lakes Regional Grape Specialist.

The main purpose of this study is to help the cooperators in this project and other grape growers to improve their skills as farm managers. The objective is to demonstrate the importance of good business records and to show how they can be used as a base for sound management decisions.

The summary and analysis presented in this publication should also be useful to agribusinessmen and agricultural teachers. However, caution should be exercised in using data from this book. These data were not obtained by using a random or representative sample of all grape farms in the Finger Lakes Region. This publication, therefore, should not be used as an exact representation of the entire Finger Lakes Region grape farm industry.

This report has been prepared for use in a systematic study of individual farm business operations.

## TABLE OF CONTENTS

	Page
The 1982 Crop Year . . . . .	2
Summary of the Farm Business . . . . .	3
Physical Resources . . . . .	3
Capital Investment . . . . .	4
Sources of Income . . . . .	5
Where the Money Went . . . . .	6
Financial Summary . . . . .	7
Farm Family Financial Situation . . . . .	9
Analysis of the Farm Business . . . . .	10
Cost Control . . . . .	11
Capital and Capital Efficiency Factors . . . . .	13
Array of Business Factors . . . . .	14
Custom Harvesting Enterprise . . . . .	15

The 1982 Crop Year

Grape production in New York State was 154,000 tons in 1982, five percent above 1981 but well above the disastrous crop yields in 1977. The five counties which comprise the Finger Lakes Grape Region (Ontario, Schuyler, Seneca, Steuben, and Yates) had a seven percent increase in total production. Prices were, in general, down from 1981. The average price paid to New York growers decreased from \$249 to \$231 per ton for all varieties. The price for Concords decreased from \$197 to \$196 per ton.

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Tons of grapes produced, all varieties						
Finger Lakes Region	31,814	63,589	51,326	53,018	51,081	54,437
State of New York	97,209	181,911	158,966	171,000	146,500	154,000
Tons Concord grapes produced						
Finger Lakes Region	12,262	24,988	23,125	18,936	20,729	20,659
State of New York	67,407	125,243	119,875	123,121	103,077	105,840
Average price paid by wineries and processors						
Concords, NYS (\$/ton)	224	217	204	196	197	196
All varieties, NYS (\$/ton)	240	241	225	220	249	231

Source: New York Crop Reporting Service, Fruit, selected reports from 1979, 1980, 1981, 1982, 1983, and 1984.

A comparison of selected measures from the grape farm business summaries is shown below. Receipts per acre increased somewhat due to higher yields even though price per ton of grapes decreased slightly.

COMPARISONS OF SELECTED MEASURES, 1975-1982

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1981</u>	<u>1982</u>
Number of farms	5	12	15	17	15
Acres bearing grapes	48.8	86.2	56.8	47.6	64.3
Worker equivalent	3.7	4.5	2.9	2.5	4.4
Total farm investment	\$141,281	\$237,584	\$183,833	\$234,095	\$289,442
Investment/bearing acre	\$2,895	\$2,756	\$3,236	\$4,918	\$4,499
Tons of grapes harvested per worker	56	77	51	75	67
Grape yield/bearing acre (T)	4.3	4.0	2.6	4.0	4.6
Grape receipts per bearing acre	\$1,146	\$738	\$650	\$1,273	\$1,439
Average price/ton grapes	\$268	\$205	\$250	\$322	\$313
Cash expense/grape acre	\$730	\$601	\$625	\$1,026	\$1,130
Net cash farm income	\$22,448	\$10,305	\$9,716	\$10,944	\$23,581

### Summary of the Farm Business

The first part of this publication summarizes the fruit business in a systematic, orderly manner. It provides an opportunity to study physical resources, capital investment, receipts, and expenses.

#### Physical Resources

Knowledge of what resources are employed and how they are combined is fundamental to sound business planning. This includes both the physical and financial resources of the business. Below are listed the physical resources for this group of grape farms.

#### FARM ORGANIZATION 15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average	Range
<u>Labor:</u>			
Number of operators	_____	1.3	1.0 - 3.0
Months of:			
Operator's	_____	14.55	4.0 - 36.0
Family paid	_____	4.77	0.0 - 36.0
Family unpaid	_____	1.67	0.0 - 12.0
Regular hired	_____	16.01	0.0 - 80.0
Seasonal hired	_____	15.81	1.0 - 54.0
Total	_____	52.81	20.0 - 114.0
Worker equivalent (total months ÷ 12)	_____	4.40	1.67 - 9.5
<u>Land and Crops (acres)</u>			
Bearing grapes:			
Owned	_____	60.29	16.0 - 108.5
Rented	_____	4.05	0.0 - 18.0
Total Bearing Acres	_____	64.34	16.0 - 120.3
Nonbearing grapes	_____	7.17	0.0 - 25.0
Total Acres in Grapes	_____	71.51	26.0 - 134.6
Total Crop Acres	_____	93.31	26.0 - 220.0
Crop Acres Rented	_____	12.38	0.0 - 65.0
Total Acres Owned	_____	189.53	90.0 - 300.0

### Capital Investment

Management of the capital resources of a farm business is becoming increasingly important. To measure the complete financial progress of a farm, year to year changes in the capital structure must be considered. In this report, borrowed as well as owned capital is included, and the end-of-year farm inventory is used as the measure of capital investment.

#### FARM INVENTORY VALUES 15 Finger Lakes Region Grape Farms

Item	My Farm		Average per Farm	
	1/82	1/83	1/82	1/83
Land & buildings	\$ _____	\$ _____	\$212,099	\$217,023
Livestock	_____	_____	811	1,020
Machinery & equipment	_____	_____	60,452	63,767
Supplies & crops	_____	_____	7,590	7,632
TOTAL FARM INVENTORIES	\$ _____	\$ _____	\$280,952	\$289,442

In many farm businesses, poor capital efficiency is a major cause of low profits. The following measures of capital efficiency will help evaluate overall capital management.

#### INVESTMENT ANALYSIS 15 Finger Lakes Region Grape Farms, January 1983

Item	My Farm	Average per Farm
Total investment per worker equivalent	\$ _____	\$65,782
Total investment per acre of bearing grapes	\$ _____	\$4,499
Land & buildings per total acres owned	\$ _____	\$1,145
Capital Turnover*	_____ yrs.	2.77 yrs.

\* Calculated by dividing the total year-end investment by the total cash receipts for the year. Rapid capital turnover is more desirable than a slow rate of turnover when similar farm businesses are compared.

## Sources of Income

A successful farm business requires a level of gross earnings great enough to pay all costs, both operating and overhead, and leave a margin for the operator's labor and management. Here we examine the sources of receipts for this group of grape farms.

### FARM RECEIPTS 15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average per Farm	Percent of Total
Grapes:			
Primary market	\$ _____	\$ 84,807	81.2
Distress market	_____	<u>2,905</u>	<u>2.8</u>
Total 1982 Payments Received	\$ _____	\$ 87,712	84.0
Previous year's payments, certificates	_____	\$ 6,193	5.9
Machine work & trucking	_____	286	0.3
Other crop receipts	_____	3,640	3.5
Other fruit receipts	_____	2,039	2.0
Government payments (ACP)	_____	649	0.6
Livestock	_____	527	0.5
State gas tax refunds	_____	430	0.4
Rent	_____	267	0.3
Crop insurance proceeds	_____	223	0.2
Other	_____	<u>2,444</u>	<u>2.3</u>
Total Cash Receipts	\$ _____	\$104,410	100.0
Total Cash Receipts	\$ _____	\$104,410	
Less previous year's payments	- _____	- 6,193	
Plus anticipated 1982 payments	+ _____	+ <u>4,796</u>	
Total Current Receipts	\$ _____	\$103,013	

Grape income accounted for 90 percent of cash receipts. An average of 293 tons of grapes per farm were harvested and sold. Cash grape receipts for the 1982 crop totaled \$299 per ton.

Where the Money Went

With the large amount of cash flowing through a farm business today, it is important that the farm operator study expenses closely.

FARM EXPENSES  
15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average per Farm	Expense per acre of grapes (total)
Hired labor	\$ _____	\$27,082	\$ 379
Machine hire, freight & trucking	_____	4,300	60
Machinery repair	_____	4,397	61
Gasoline & oil	_____	4,628	65
Fungicides/insecticides - vineyard	_____	4,475	63
Herbicides - vineyard	_____	1,118	16
Fertilizer & lime	_____	2,926	41
Replacement roots	_____	948	13
Chemicals for crops other than grapes	_____	197	3
Vineyard supplies	_____	3,326	47
Other crop & livestock expense	_____	1,273	18
Building & real estate repair	_____	2,078	29
Property taxes	_____	4,068	57
Insurance	_____	3,953	55
Employee benefits	_____	1,884	26
Rent	_____	657	9
Storage & warehouse	_____	58	1
Utilities	_____	1,117	16
Land clearing	_____	200	3
Interest paid	_____	9,769	137
Conservation	_____	357	5
Miscellaneous	_____	2,018	28
TOTAL CASH & OPERATING EXPENSES	\$ _____	\$80,829	\$1,130
Machinery depreciation	_____	6,211	87
Real estate depreciation	_____	2,146	30
TOTAL FARM EXPENSES	\$ _____	\$89,186	\$1,247



### Financial Summary

The net returns for any business can be measured in several different ways. Each measure calculates the net return to a selected resource or group of resources such as labor or capital. Some of the common farm business measures are given below.

Net cash farm income reflects the cash available from the year's operation of the farm business for family living, payments on debt principal, and new purchases or investments. A family may have had additional cash available if members had nonfarm income.

#### NET CASH FARM INCOME 15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average per Farm
Total Cash Receipts	\$ _____	\$104,410
Total Cash and Operating Expenses	_____	<u>80,829</u>
NET CASH FARM INCOME	\$ _____	\$ 23,581
Family Living Expenses	_____	
CASH FOR INVESTMENT AND PRINCIPAL PAYMENTS ON DEBTS	\$ _____	

Net income is the amount left after paying all cash operating expenses, deducting charges for depreciation, and adjusting for changes in fruit and supply inventories and accounts payable and receivable.

#### NET INCOME 15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average per Farm
Total Current Receipts	\$ _____	\$103,013
Total Farm Expenses	_____	89,186
(+) or (-) Change in Crop/Supply Inventory	_____	+ 43
(+) or (-) Change in Accounts Receivable minus Accounts Payable	_____	- 1,047
NET INCOME PER FARM	_____	\$ 12,823

Net income per farm, \$12,823, is the return for the operator's labor and management and unpaid family labor, as well as the equity capital he or she has invested in the business. The growers who participated in this summary submitted balance sheets and net worth, or the amount of equity capital, was computed. Average equity capital was estimated as \$243,698 per farm.

Return on equity capital can be computed with or without real estate appreciation. To calculate return on equity capital (excluding real estate appreciation) the value of operator's labor and management and unpaid family labor is deducted from net income. This return to equity capital is divided by the owner's equity investment in the business to compute the rate of return on equity capital. Owner's equity investment used here is total end of year farm inventories less total farm liabilities.

RETURN ON EQUITY CAPITAL  
15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average per Farm
Return to Operator's Labor & Management & Equity	_____	\$12,823
Less: Unpaid Family Labor*	_____	835
Less: Value of Operator's Labor & Management**	_____	<u>16,134</u>
Return on Equity Capital	_____	\$-4,146
Rate of Return on Equity Capital (equity capital = \$243,968)	_____ %	-1.7%

\*Valued at \$500 per month.

\*\*Values estimated at \$750 per month for labor and 5 percent of cash receipts for management.

### Farm Family Financial Situation

The financial situation is an important part of the grape farm business summary. It has a direct effect on current cash outflow and future capital investment decisions. A grower may have a good labor income, but a high debt load may seriously restrict his management flexibility.

The balance sheet of the financial situation is provided below.

#### FARM FAMILY FINANCIAL SITUATION 15 Finger Lakes Region Grape Farms, 1982

Item	My Farm	Average per Farm
<u>Assets</u>		
Total farm inventory	\$ _____	\$289,442
Accounts receivable	_____	3,132
Co-op investment	_____	6,874
Cash & checking account	_____	12,531
TOTAL FARM ASSETS	\$ _____	\$311,979
<u>Liabilities</u>		
Real estate mortgage	\$ _____	\$ 31,645
Liens & secured loans	_____	27,435
Installment contracts	_____	396
Accounts payable	_____	1,586
Other farm debt	_____	6,949
TOTAL FARM LIABILITIES	\$ _____	\$ 68,011
FARM NET WORTH (Farm assets less liabilities)	\$ _____	\$243,968
Percent Equity (Farm net worth ÷ total farm assets)	_____ %	78.2%
Farm Debt Per Worker Equivalent	\$ _____	\$ 15,457
Farm Debt per Bearing Acre of Grapes	\$ _____	\$ 1,057

Payment ability is the most important consideration in determining if and how proposed investments should be financed. The farm business must produce enough cash income to meet operating expenses, to cover family living expenses and to make debt payments. The average farm in this study had a net cash flow, excluding interest paid, of \$33,350. This amount was available for family living expenses, debt payments, and cash for capital investments during the year.

### Analysis of the Farm Business

Some of the business factors which affect profits and which a farmer can control to some degree are: (1) size of enterprise, (2) labor efficiency, (3) yields, and (4) price.

A comparison of your farm with the averages of these factors for these farms can provide valuable clues to the strong and weak points of an individual grape farm business.

#### SELECTED FARM BUSINESS MEASURES 15 Finger Lakes Region Grape Farms, 1982

Item	Average per Farm	My Farm
<u>Measures of Size</u>		
1. Acres in bearing grapes	64.3	_____
2. Acres in nonbearing grapes	7.2	_____
3. Worker equivalent	4.4	_____
4. Tons of grapes harvested	293.3	_____
<u>Labor Efficiency</u>		
1. Acres in bearing grapes per worker	14.6	_____
2. Tons of grapes harvested per worker	66.7	_____
<u>Production Factors</u>		
1. Grape yield per acre (tons) of bearing grapes	4.6	_____
2. Grape receipts* per acre of bearing grapes	\$1,439	\$ _____
<u>Price</u>		
1. Average price per ton of grapes sold**	\$ 313	\$ _____

\* Cash receipts from sale of grapes plus anticipated payments from current grape crop.

\*\*Grape receipts ÷ tons of grapes harvested.

Cost Control

Power and machinery costs were major expenses on these grape farms. Net operating and investment costs averaged \$23,042.

POWER AND MACHINERY COSTS  
15 Finger Lakes Region Grape Farms, 1982

Item	Average per Farm	My Farm
Machinery depreciation	\$ 6,211	\$ _____
Interest at 5% average inventory	3,105	_____
Gas & oil	4,628	_____
Machinery repair	4,397	_____
Machine hire, freight & trucking	4,300	_____
Utilities	<u>1,117</u>	_____
Total Machinery Costs	\$23,758	\$ _____
Income from machine work	- 286	_____
State gasoline tax refund	<u>- 430</u>	_____
NET MACHINERY COSTS	\$23,042	\$ _____
<hr style="border-top: 1px dashed black;"/>		
Net Machinery Costs:		
Per acre of bearing grapes	\$358	\$ _____
Per worker equivalent	\$5,237	\$ _____
Per ton of grapes harvested	\$79	\$ _____

Since power and machinery costs represent a substantial portion of total costs, efficiency in use is an important factor affecting profitability of the business. Net machinery costs per acre of bearing grapes averaged \$358.

Most farm operators justify major machinery purchases as a way to save labor and increase productivity. How well labor and machinery are combined has an important bearing on farm profits.

LABOR AND MACHINERY COSTS  
15 Finger Lakes Region Grape Farms, 1982

Item	Average per Farm	My Farm
Value of operator's labor*	\$10,913	\$ _____
Hired labor	27,082	_____
Unpaid family labor	835	_____
TOTAL LABOR COSTS	\$38,830	\$ _____
<hr/>		
Labor cost:		
Per worker equivalent	\$8,825	\$ _____
Per acre of bearing grapes	\$604	\$ _____
Per ton of grapes harvested	\$132	\$ _____

\* Valued at \$750 per month for operator's labor (value of management and owned capital excluded).

MISCELLANEOUS COST MEASURES  
15 Finger Lakes Region Grape Farms, 1982

Item	Average per Farm	My Farm
Crop expense per acre of bearing grapes**	\$199	\$ _____
Spray expense per acre of bearing grapes	70	\$ _____
Taxes per total acres owned	21	\$ _____
Taxes per \$1,000 of end real estate inventory	19	\$ _____
Taxes & insurance per \$1,000 real estate inventory	37	\$ _____

\*\*Includes spray, fertilizer, replacement vines, herbicides, and supplies.

### Capital and Capital Efficiency Factors

The average investment in the farm business was \$289,442. About 75 percent of this total is represented by vineyards, land and buildings.

#### CAPITAL INVESTMENT AND CAPITAL EFFICIENCY FACTORS 15 Finger Lakes Region Grape Farms, 1982

Item	Average per Farm	Percent of Total	My Farm
Land & buildings	\$217,023	75.0	\$ _____
Livestock	1,020	0.4	_____
Machinery & equipment	63,767	22.0	_____
Supplies	<u>7,632</u>	<u>2.6</u>	_____
Total Farm Inventories	\$289,442	100.0	\$ _____
<hr/>			
Worker equivalent	4.4		_____
Investment per worker equiv.	\$65,782		\$ _____
Acres of bearing grapes	64.3		_____
Machinery & equipment investment per acre of bearing grapes	\$992		\$ _____
Land & building investment per acre owned	\$1,145		\$ _____
Total farm investment per acre of bearing grapes	\$4,501		\$ _____
Total farm investment per ton of grapes sold	\$987		\$ _____
Capital turnover (years for cash receipts to equal capital)	2.77		_____

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 factors calculated in the table above can help a farmer gauge the soundness of his capital investment. On these farms, investment per acre of bearing grapes ranged from \$2,350 to \$9,181.

### Array of Business Factors

Vineyardists in the management program can determine how their business stands relative to the others in the summary by encircling the factor measurement for their farm in each column of the table below.

#### ARRAY OF SELECTED BUSINESS FACTORS 15 Finger Lakes Region Grape Farms, 1982

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

Grape Acres Harv.	Tons Grapes Harv.	Worker Equiv.	Tons Grapes Harv./ Worker	Tons Grapes/ Grape Acre	Total Farm Invest./ Grape Acre	Grape Receipts/ Grape Acre	Total Cash Oper. Exp./ Total Crop Acres
120	662	9.5	141	6.4	6,062	1,861	2,857
109	615	8.9	90	5.4	5,650	1,841	1,316
100	492	8.0	87	5.3	5,628	1,627	1,206
96	340	5.0	77	4.9	5,066	1,495	1,130
80	312	4.3	74	4.7	4,626	1,295	1,060
77	294	4.0	74	4.5	4,216	1,274	1,016
70	285	4.0	74	4.1	4,214	1,260	1,014
61	262	3.6	73	3.8	4,214	1,256	926
53	253	3.5	70	3.7	3,888	1,235	851
42	199	3.4	67	3.7	3,747	1,118	723
42	179	3.1	64	3.5	3,662	1,114	633
39	165	3.1	63	3.2	2,830	1,036	629
31	164	2.3	59	3.1	2,784	1,023	618
30	146	1.8	38	2.7	2,525	1,006	462
16	32	1.7	8	1.2	2,350	922	349



Custom Harvesting Enterprise

Five of the farms in this summary had custom harvesting operations. The receipts, expenses, and machinery used were allocated to this enterprise, and are not included in the computations in the preceding pages.

CUSTOM HARVESTING ENTERPRISE  
Five Finger Lakes Region Grape Farms, 1982

	Average per Farm	Range
Receipts	\$11,818	\$5,200 to 21,832
Expenses		
Hired labor	\$2,231	
Machinery repair	2,159	
Gasoline & oil	566	
Buildings & real estate repair	9	
Insurance	352	
Utilities	39	
Vineyard supplies	16	
Interest paid	743	
Employee benefits	246	
Miscellaneous	<u>310</u>	
TOTAL CASH EXPENSES	\$6,671	
Machinery depreciation	<u>2,383</u>	
TOTAL EXPENSES	\$ 9,054	
Net Income for Enterprise	\$ 2,764	\$-61 to 7,729

The average net income was \$2,764. These growers had investments in machinery of \$23,829 allocated to custom harvesting. This is not the full value of all machinery used in custom harvesting, but rather it reflects these growers' estimation of what percentage of their machinery should be allocated to the enterprise. The same principle is used for the allocation of other expenses.