

# GREAT LAKES REGION 1983

L.D. Putnam G.B. White D.G. Himelrick

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

#### GREAT LAKES REGION GRAPE FARM BUSINESS

#### SUMMARY AND ANALYSIS, 1983

This is a summary and analysis of the 1983 farm business records from 13 commercial grape farms in the Great Lakes Region of New York. The summary was prepared by Linda D. Putnam and Gerald B. White, Department of Agricultural Economics, Cornell University; and David G. Himelrick, Great 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, <u>caution</u> <u>should be exercised in using data from this book</u>. These data were not obtained by using a random or representative sample of all grape farms in the Great Lakes Region. This publication, therefore, should not be used as an exact representation of the entire Great 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

	1 48	-
The 1983 Crop Year	• 2	
Summary of the Farm Business	• 3	
Physical Resources	. 3	
Capital Investment	• 4	
Sources of Income	• 5	
Where the Money Went	. 6	
Machinery and Real Estate Inventory Calculations	• 7	
Financial Summary	• 8	
Farm Family Financial Situation	• 11	
Analysis of the Farm Business	• 12	
Cost Control	. 13	
Capital and Capital Efficiency Factors	• 15	
1983 Production and Marketings	• 16	
Array of Business Factors	• 17	
Custom Harvesting Enterprise	. 18	

## The 1983 Crop Year

Grape production in New York State was 186,500 tons in 1983, 21 percent above 1982. The four counties which comprise the Great Lakes Grape Region (Chautauqua, Cattaraugus, Erie, and Niagara) had a 34 percent increase in total production. Prices were down from 1982. The average price paid to New York growers decreased from \$230 to \$223 per ton for all varieties, and the price for Concords decreased from \$194 to \$177 per ton.

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Tons of grapes produce all varieties	d					
Great Lakes Region	114,350	104,036	114,036	93,553	94,452	126,679
State of New York	181,911	158,966	171,000	146,500	154,000	186,500
Tons Concord grapes produced						
Great Lakes Region	98,657	94,959	102,304	82,015	83,244	111,273
State of New York	125,243	119,875	123,121	103,077	105,840	128,390
Average price paid by wineries and processor	S					
Concords, NYS (\$/to All varieties	on) 217	204	196	187	194	177
NYS (\$/ton)	241	225	220	243	230	223

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. Labor and management income per year was (-)\$2,480 compared with (-)\$7,398 in 1982. Much of this change can be attributed to a new method of assessing the cost of equity capital. (For further explanation, see the discussion of labor and management income on page 8.) Investment per acre increased. Cash expense per acre also increased in 1983, a change in trend from 1981 and 1982 where there were decreases.

#### COMPARISONS OF SELECTED MEASURES, 1979-1983

<u>1979</u>	<u>1980</u>	<u>1981</u>	1982	1983
12	10	15	16	13
85.8	84.6	71.0	67.7	67.2
3.5	3.6	2.8	2.8	2.8
\$290,728	\$328,696	\$264,197	\$271,267	\$269,897
\$3,388	\$3,884	\$3,719	\$4,005	\$4,016
120	110	121	109	154
4.9	4.7	4.7	4.5	6.3
\$1,138	\$1,057	\$1,085	\$1,079	\$1,195
\$232	\$225	\$229	\$238	\$189
\$881	\$983	\$937	\$926	\$967
\$34,317	\$16,841	\$19,680	\$26,193	\$23,091
\$413	\$-20,292	\$-17,005	\$-7,398	\$-2,480
. 6.4%	1.1%	-0.56%	0.63%	0.48%
	<u>1979</u> 12 85.8 3.5 \$290,728 \$3,388 120 4.9 \$1,138 \$232 \$881 \$34,317 \$413 . 6.4%	$\begin{array}{cccccccc} \underline{1979} & \underline{1980} \\ 12 & 10 \\ 85.8 & 84.6 \\ 3.5 & 3.6 \\ \$290,728 & \$328,696 \\ \$3,388 & \$3,884 \\ 120 & 110 \\ 4.9 & 4.7 \\ \$1,138 & \$1,057 \\ \$232 & \$225 \\ \$881 & \$983 \\ \$34,317 & \$16,841 \\ \$413 & \$-20,292 \\ \bullet & 6.4\% & 1.1\% \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

## 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.

Item	My Farm	Average	Range		
Labor:	an a	lan, 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 -			
Number of operators		1.0	1.0	-	1.0
Months of:					
Operator's Family paid Family unpaid Regular hired Seasonal hired Other		8.32 2.62 2.46 5.40 13.39 1.08	$ \begin{array}{c} 1.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\$		12.0 15.0 12.0 36.0 77.0 14.0
Total		33.27	4.6		94.0
Worker equivalent (total months ÷ 12) Land and Crops (acres)		2.77	0.39		7.83
Bearing grapes:					
Harvested		66.40	23.0	-	222.0
Not harvested	1.000000000000000000000000000000000000	0.81	0.0	-	8.4
Nonbearing grapes		2.01	0.0		10.7
Total Acres in Grapes		69.22	23.0	-	230.0
Total Crop Acres		91.72	23.0	-	300.0
Crop Acres Rented		9.94	0.0		70.0
Total Acres Owned		122.41	0.0	-	300.0

FARM ORGANIZATION 13 Great Lakes Region Grape Farms, 1983 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-ofyear farm inventory is used as the measure of capital investment.

	My Farm	Average	Average per Farm		
Item	1/83 1/84	1/83	1/84		
Land & buildings	\$\$	\$211,343	\$211,362		
Livestock	· · · · · · · · · · · · · · · · · · ·	0	0		
Machinery & equipment		58,680	55,180		
Supplies & crops		2,595	3,355		
TOTAL FARM INVENTORIES	\$\$	\$272,619	\$269,897		

## FARM INVENTORY VALUES 13 Great Lakes Region Grape Farms

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.

		]	INVESTME	ENT ANA	LYSIS		
13	Great	Lakes	Region	Grape	Farms,	January	1984

Item	My Farm	Average per Farm
Total investment per worker equivalent	\$	\$97,336
Total investment per acre of bearing grapes	\$	\$ 4,016
Land & buildings per total acres owned	\$	\$ 1,727
Capital Turnover*	yrs.	3.0 yrs.

\* Calculated by dividing the total year-end investment by the total <u>cash</u> 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.

Item	My Farm	Average per Farm	Percent of Total
Grapes:			
Primary market	\$	\$73,444	81.6
Distress market		351	0.4
Total 1983 Payments Received	\$	\$73,795	82.0
Previous year's payments, certificates		\$ 8,942	9.9
Machine work & trucking		717	0.8
Other crop receipts		1,595	1.8
Work off farm		1,866	2.1
Livestock & livestock product sales		673	0.7
Rent		979	1.1
Other		1,482	1.6
Total Cash Receipts	\$	\$90,049	100.0
Total Cash Receipts	\$	\$90,049	
Less previous year's payments		- 8,942	
Plus anticipated 1983 payments	+	+ 6,543	
Increase in crop & supply inventory	+	+ 759	
Total Farm Receipts	\$	\$88,408	

FARM RECEIPTS 13 Great Lakes Region Grape Farms, 1983

Grape income accounted for 92 percent of cash receipts. An average of 426 tons of grapes per farm were harvested and sold. Cash grape receipts for the 1983 crop totaled \$173 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.

Item	My Farm	Average per Farm	Expense per acre of grapes (total)		
Hired labor	\$	\$25,757	\$ 372		
Machine hire		5,523	80		
Machine repair & farm share of auto expense Gasoline & oil		4,432 2,407	64 35		
Spray		2,707	39		
Fertilizer		3,714	54		
Seeds & grape roots (replacements)		28	<1		
Posts and wire		684	10		
Other crop expense		2,446	35		
Real estate upkeep		687	10		
Taxes		4,157	60		
Insurance		2,275	33		
Rent		1,311	19		
Utilities		528	7		
Interest paid	-	8,007	116		
Miscellaneous		2,295	33		
TOTAL CASH & OPERATING EXPENSES	\$	\$66,958	\$ 967		
Machinery depreciation		6,568	95		
Real estate depreciation		4,830	70		
Decrease in supply inventory		0	0		
Unpaid family labor		1,231	18		
Interest on equity capital @ 5%		11,301	163		
TOTAL FARM EXPENSES	\$	\$90,888	\$1,313		

FARM EXPENSES 13 Great Lakes Region Grape Farms, 1983

#### Machinery and Real Estate Inventory Calculations

Capital outlays for machinery, buildings and land improvements (including drainage and vineyard establishment) usually occur in large, uneven amounts, but depreciate gradually over a period of time. Depreciation is the annual charge for the use of the machinery complement and real estate improvements in production. Depreciation was taken from the farm depreciation schedule. Appreciation, which results from inflation, is calculated as a residual.

	MACHIN	NERY A	ND	EQUII	PMENT	INVENTOR	R <b>Y</b>
13	Great	Lakes	Re	gion	Grape	Farms,	1983

Item		My Farm			Average			
End of year market value		(A)\$			\$55,180			
Beginning market value	\$		\$ !	5 <b>8,</b> 680				
Plus machinery purchases	+		+	3,527				
Less machinery sales	· •••		-	341				
Less depreciation*	·		-	6,568				
Net end investment		(B)\$			55,298			
APPRECIATION [(A)-(B)]		\$		(-	)\$ 118			

The average machinery depreciation of \$6,568 is 11 percent of the beginning inventory plus machinery purchases.

		REAL	ESTATE	INVENTO	ORY	
13	Great	Lakes	Region	Grape	Farms,	1983

Item	My Farm	Average
End of year market value	(A)\$	\$211,362
Beginning market value	\$	\$211,343
Plus cost of new real estate	+	+ 1,863
Less real estate sold		- 135
Less depreciation*		- 4,830
Net end investment	(B)	208,241
Appreciation [(A)-(B)]	\$	\$ 3,121

\*Depreciation (excluding additional first year depreciation) from tax records.

#### 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.

Item	My Farm	Average per Farm
Total Cash Receipts	\$	\$90,049
Total Cash Operating Expenses	A support of the supp	66,958
NET CASH FARM INCOME	\$	\$23,091
Family Living Expenses		
CASH FOR INVESTMENT AND PRINCIPAL PAYMENTS ON DEBTS	\$	

NET CASH FARM INCOME 13 Great Lakes Region Grape Farms, 1983

Labor and management income is the return to the farm operator for labor and management. It is the measure most commonly used when comparing the profitability of farm businesses. Labor and management income is the amount left after paying all cash operating expenses and deducting charges for depreciation, unpaid labor, interest on equity capital and losses in fruit and supply inventories. The business is charged a five percent real rate of interest or opportunity cost for the use of equity capital. This real rate of interest represents the long term average rate of return that a grower could expect to earn on investments with comparable risks to farming, in an economy with little or no inflation.

Labor and management income; labor, management and ownership income; and return on equity capital are computed in the following three tables. The computations are done by two different methods. These methods are as follows:

- Method (1) Total receipts is the sum of total cash receipts minus grape payments from previous years plus anticipated 1983 payments plus or minus the increase or decrease in the crop and supply inventory. This method is the one which has been used in the most recent years in Cornell grape farm business summaries.
- Method (2) Total receipts is the sum of total cash receipts in the calendar year (including grape payments from previous years) plus or minus the increase or decrease in crop and supply inventory. Using this method, net income did not depend on growers estimates of future receipts for the current crop.

Ttem	My Farm	Average	per Farm [Method 2]
Total Farm Receipts	Ś	\$88,408	\$90,808
Total Farm Expenses	* <u></u>	90 888	90,888
LABOR & MANAGEMENT INCOME PER FARM	\$	(-)\$ 2,480	(-)\$ 80

LABOR AND MANAGEMENT INCOME 13 Great Lakes Region Grape Farms, 1983

It is common to compute labor and management return per operator as well as per farm because most studies include some farms with more than one operator. However, the average number of operators for 1983 was 1.0; therefore labor and management income per operator was the same as labor and management income per farm.

In addition to labor and management income, the owner-operator of a farm business should receive income for his capital investment in the business. He receives this income in the form of interest on equity in the business and real estate and machinery appreciation. These three "owner-ship income" items are added to labor and management income to determine labor, management and ownership income. This indicates the total return the owner-operator receives for owning and operating the business.

The growers who participated in this summary submitted balance sheets and net worth or equity capital was easily computed. Average equity capital was estimated as \$226,021 per farm.

Item	My Farm	Averag [Method 1	e per Farm ] [Method 2]
Labor & Management Income Per Farm	\$	(-)\$ 2,480	(-)\$ 80
Add: Real Estate Appreciation	· · · · · · · · · · · · · · · · · · ·	3,121	3,121
Add: Machinery Appreciation		(-) 118	(-) 118
Add: Interest on Equity Capital @ 5%	The second s	11,301	11,301
LABOR, MANAGEMENT & OWNERSHIP INCOME			
PER FARM	\$	\$11,824	\$14,223
PER OPERATOR	\$	\$11,824	\$14,223

LABOR, MANAGEMENT AND OWNERSHIP INCOME 13 Great Lakes Region Grape Farms, 1983

<u>Return on equity capital</u> can be computed with or without real estate appreciation. To calculate return on equity capital (including real estate appreciation) the value of operator's labor and management is deducted from labor, management and ownership 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.

		Average	per Farm
Item	My Farm	[Method 1]	[Method 2]
Labor & Management & Ownership Income	\$	\$11,824	\$14,223
Less: Value of Operator's Labor & Management*		10,746	10,746
Return on Equity Capital		\$ 1,078	\$ 3,477
Rate of Return on Equity Capital (equity capital = \$226,021)	%	0.48%	1.54%

RETURN	ON EQUITY C	APITAL	
13 Great Lakes	Region Grap	e Farms, 198	3

\* 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 affect 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 13 Great Lakes Region Grape Farms, 1983

Item	My Farm	Average per Farm
Assets		
Total farm inventory Accounts receivable Co-op investment Cash & checking account	\$	\$269,897 6,780 17,645 7,024
TOTAL FARM ASSETS	\$	\$301,346
Liabilities		
Real estate mortgage Liens & secured loans Installment contracts Accounts payable Other farm debt TOTAL FARM LIABILITIES	\$  \$	\$ 42,624 15,131 346 4,642 <u>12,582</u> \$ 75,325
FARM NET WORTH (Farm assets less liabilities)	\$	\$226,021
Percent Equity (Farm net worth + total farm assets)	%	75.0%
Farm Debt Per Worker Equivalent	\$	\$ 27,165
Farm Debt per Bearing Acre of Grapes	\$	\$ 1,121

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 \$31,098. 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.

Item	Average per Farm	My Farm
Measures of Size		
l. Acres in bearing grapes	67.2	
2. Acres of grapes harvested	66.4	
3. Acres in nonbearing grapes	2.0	
4. Worker equivalent	2.8	
5. Tons of grapes harvested	426.0	
6. Tons of grapes grown	427.7	l <del>anna</del> a bhailte ann an tart an tart an
Labor Efficiency		
1. Acres in grapes harvested per worker	23.9	
2. Tons of grapes harvested per worker	153.6	· and the same with the probability of the
Production Factors		
<ol> <li>Grape yield per acre (tons) of bearing grapes</li> </ol>	6.3	<b>King and a set of a set of a set of a</b>
<ol> <li>Grape receipts* per acre of bearing grapes</li> </ol>	\$1,195	\$
Price		
1. Average price per ton of grapes sold**	\$ 189	\$

## SELECTED FARM BUSINESS MEASURES 13 Great Lakes Region Grape Farms, 1983

\*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 \$21,534.

Item	Average per Farm	My Farm
Machinery depreciation	\$ 6,568	\$
Interest at 5% average inventory	2,846	and the survey of the strength
Gas & oil	2,406	
Auto	296	
Truck, tractor & equipment repair	4,136	
Machine hire	5,523	
Utilities	528	
Total Machinery Costs	\$22,303	\$
Income from machine work	- 717	And the state of t
Gasoline tax refund	- 52	
NET MACHINERY COSTS	\$21,534	\$
Net Machinery Costs:		및 프로 에도 이상 수업 이상 가장 또는 가지 위하 수업 이가 가정 나라 가정 도움 가지 위상 수요
Per acre of bearing grapes	\$320	\$
Per worker equivalent	\$7,766	\$
Per ton of grapes harvested	\$51	\$

POWER AND MACHINERY COSTS 13 Great Lakes Region Grape Farms, 1983

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 \$320.

\_\_\_\_\_

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.

	LA	ABOR .	AND	MACH1	(NERY	COSTS	
13	Great	Lake	s Re	egion	Grape	Farms,	1983

Item	Average per Farm	My Farm
Value of operator's labor*	\$ 6,243	\$
Hired labor	25,757	
Unpaid family labor	1,231	
TOTAL LABOR COSTS	\$33,231	\$
Total net machinery cost	_21,534	
TOTAL LABOR & MACHINERY COSTS	\$54,765	\$
Labor cost:		999 4999 - Mar 1998 - Mar 1998 1999 - Mar 2008 - Ann 2009 - Mar 2008
Per worker equivalent	\$11 <b>,9</b> 84	\$
Per acre of bearing grapes	\$494	\$
Per ton of grapes harvested	\$78	\$
Labor & machinery cost:		
Per worker equivalent	\$19,750	\$
Per acre of bearing grapes	\$815	\$
Per ton of grapes harvested	\$129	\$

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

## MISCELLANEOUS COST MEASURES 13 Great Lakes Region Grape Farms, 1983

Item Aver	age per Farm	My Farm
Crop expense per acre of bearing grapes**	\$143	\$
Spray expense per acre of bearing grapes	40	\$
Taxes per total acres owned	34	\$
Taxes per \$1,000 of end real estate inventory	20	\$
Taxes & insurance per \$1,000 real estate inventor	<b>y 3</b> 0	\$

\*\*Includes spray, fertilizer, replacement vines, posts and wire, and other crop expenses.

#### Capital and Capital Efficiency Factors

The average investment in the farm business was \$269,897. About 78 percent of this total is represented by vineyards, land and buildings.

	Average	Percent	
Item	per Farm	of Total	My Farm
Land & buildings	\$211,362	78.3	\$
Livestock	0	0.0	
Machinery & equipment	55,180	20.5	
Supplies	3,355	1.2	
Total Farm Inventories	\$269,897	100.0	\$
Worker equivalent	2.8		
Investment per worker equiv.	\$97,336		\$
Acres of bearing grapes	67.2		
Machinery & equipment investment per acre of bearing grapes	\$821		\$
Land & building investment per acre owned	\$1,727		\$
Total farm investment per acre of bearing grapes	\$4,016		\$
Total farm investment per ton of grapes sold	\$634		\$
Capital turnover (years for cash receipts to equal capital)	3.0		

CAPITAL INVESTMENT AND CAPITAL EFFICIENCY FACTORS 13 Great Lakes Region Grape Farms, 1983

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 \$1,073 to \$8,944.

\_\_\_\_\_

## 1983 Production and Marketings

Item	Number of Growers Reporting	Average of All Growers	
Bearing vines:			
Harvested, sold in primary market	13	65.86	
Harvested, sold in distress market	3	0.53	
Not harvested	_2	0.81	
Total Bearing	13	67.20	
Nonbearing Vines	6	2.02	
Total Acres in Vi	lnes	69.22	

	ACRE	ZS	IN	VINES	AND	MARI	KETINGS	
13	Great	La	ikes	Regio	on Gi	rape	Farms,	1983

Total acress in vines averaged 69.22 acress per farm. Ninety-five percent of this total acreage produced a crop which was harvested and sold in the growers' primary or usual markets. The growers reported about 0.8 percent of the acreage in vines was harvested and sold in the open market. Three growers had sales in the open market.

GRAPES HARVESTED & SOLD IN THE USUAL MARKETS 13 Great Lakes Region Grape Farms, 1983

Variety	Acres	Tons	Average Yield/Acre
Concord	47.0	319.5	6.8 Tn.
All other varieties	18.9	104.4	<u>5.5</u> Tn.
Total <sup>.</sup>	65.9	423.9	6.4 Tn.

Concords were an important variety on all farms. This variety accounted for 71 percent of the acreage harvested and 75 percent of the tonnage. The average yield of Concords was 6.8 tons per acre, compared with 5.5 tons per acre for all other varieties.

# 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.

Note:	each colu	mn is in	dependent	of the o	thers. Do n	ot read ac	ross.
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 <u>Acres</u>
222	1,440	7.8	452	9.1	\$8,944	\$2,275	\$1,815
148	<b>9</b> 03	5.0	231	8.0	7,653	1,701	1,812
82	620	4.5	20 <b>9</b>	7.0	6,745	1,284	1,166
77	467	3.8	201	6.9	5,288	1,277	1,000
65	332	2.7	201	6.8	4,698	1,257	<b>9</b> 07
45	309	2.7	195	6.5	4,115	1,115	835
40	279	2.6	184	6.2	4,052	1,069	816
40	257	2.0	161	6.1	3,903	1,048	804
40	216	1.9	125	5.7	3,510	1,014	801
38	209	1.0	125	5.4	3,444	926	673
28	195	1.0	105	5.3	3,144	901	608
26	174	0.7	99	5.1	3,048	772	595
23	137	0.4	56	4.9	1,073	742	555

ARRAY OF SELECTED BUSINESS FACTORS 13 Great Lakes Region Grape Farms, 1983

#### 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.

Five Great Lakes Region Grape Farms, 1983					
		Average per Fa	arm Ra	nge	
Receipts		\$6,621	\$0	- 12,480	
Expenses					
Hired labor	\$2,234				
Machine hire	111				
Machine repair & farm share					
of auto expense	688				
Gasoline & oil	806				
Real estate upkeep	0				
Insurance	107				
Utilities	19				
Interest paid	0				
Miscellaneous	190				
TOTAL CASH EXPENSES	\$4,155				
Machinery depreciation	1,367				
TOTAL EXPENSES		\$5,522			
Net Income for Enterprise		\$1,099	(-)\$10,628	- 9,487	

CUSTOM HARVESTING ENTERPRISE Five Great Lakes Region Grape Farms, 1983

The average net income was 1,099. These growers had investments in machinery of 24,183 allocated to custom harvesting. This is <u>not</u> 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.