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FRUIT FARM BUSINESS SUMMARY

LAKE ONTARIO REGION 1983

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LAKE ONTARIO
FRUIT FARM
BUSINESS SUMMARY
1983
16 Fruit Farms

This is a summary and analysis of the 1983 farm business records from 16 commercial fruit farms in Western New York State. The records were collected and checked by and Alison Wolanyk, Cooperative Extension Fruit Economics Specialist for the Lake Ontario Region.

The main objectives of this study were to assist cooperators in this project and other fruit growers to: (1) develop skills in summarizing and analyzing data from their farm businesses; and (2) use the analysis to improve managerial decision-making. The purpose of the study was to provide a useful framework for analysis of the farm business. A grower may use the data to compare the farm operation with other similar farm businesses.

The farms in this study are primarily apple farms. An average of 72 percent of the cash receipts in 1983 was from the sale of apples. The data were not obtained by using a random or representative sample of all fruit farms in Western New York. Therefore, the analysis should not be used to represent the Western New York fruit industry.

This report was prepared in workbook form by Alison Wolanyk for use in a systematic study of individual farm business operations.

The 1981, 1982, and 1983 Crop Years

Apple production in New York State was 26.2 million bushels in 1983. This was down about three percent from the record 1982 crop of 26.9. Prices for fresh apples were about seven percent higher than in 1982, but the average price of processing apples declined for the third year in a row. The average price for all apples was \$3.65 per bushel compared with \$3.74 in 1982.

The 1981, 1982, and 1983 Crop Years

	<u>1982</u>	<u>1983</u>	<u>1983</u>
Bushels of apples produced, all varieties, mil. bu.			
Western New York	12.6	17.3	17.4
State of New York	19.0	26.9	26.2
Average price received per bushel			
All apples	5.38	3.74	3.65
Fresh apples	8.82	6.09	6.51
Processing apples	2.67	2.39	2.02

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

A comparison of selected measures from the fruit farm business summaries is shown below. Labor and management income was \$14,891 in 1983. Apple yields per acre increased by 14 percent from 1982 for the growers in this study. The price per bushel was down, reflecting lower processing prices in 1983.

	<u>1981</u>	<u>1982</u>	<u>1983</u>
Number of farms	18	14	16
Acres of bearing apples	75.7	84.7	90.6
Worker equivalents	5.0	5.2	5.8
Total farm investment (\$)	353,571	392,690	411,468
Investment per bearing acre (\$)	3,426	3,433	3,348
Bushels of apples harvested per worker	6,614	8,008	8,771
Apple yield per bearing acre (bushels)	437	492	562
Fruit receipts per bearing acre (\$)	1,324	1,429	1,490
Average price per bushel of apples (\$)	3.17	3.08	2.77
Cash expense per bearing acre (\$)	1,087	1,172	1,182
Labor & management income per farm (\$)	3,076	-7,230	14,891
Rate of return on equity capital (%)	9.7	0.1	9.9
Percent of acreage in nonbearing fruit	19.2	18.6	18.3

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 investments, 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 fruit farms.

FARM ORGANIZATION
16 Western New York Fruit Farms, 1983

Item	My Farm	Average	Range
<u>Land and crops (acres)*</u>			
Bearing fruit:			
Apples	_____	90.6(16)	11 - 183
Tart Cherries	_____	10.7(14)	0 - 32
Peaches	_____	5.3 (8)	0 - 45
Pears	_____	7.9(12)	0 - 32
Plums and prunes	_____	1.5 (4)	0 - 11
Grapes	_____	4.3 (4)	0 - 55
Sweet Cherries	_____	2.5 (8)	0 - 14
Other fruit	_____	0.1 (2)	0 - 1
Total bearing	_____	122.9	44 - 209
Non-bearing	_____	27.6	1.5 - 105
TOTAL FRUIT	=====	150.5	53 - 296
Other crops	_____	0.75	0 - 8
TOTAL CROP ACRES	_____	151.3	45 - 254
Total acres owned	_____	184.1	0 - 401
Crop acres rented	_____	23.2	0 - 101
<u>Labor:</u>			
Number of operators	_____	1.1	1 - 3
Operator's age	_____	45.4	29 - 83
Months of: Operator's	_____	13.4	8 - 34
Family paid	_____	4.1	0 - 17
Family unpaid	_____	2.5	0 - 9
Regular hired	_____	18.3	0 - 48
Seasonal hired	_____	31.1	10 - 63
Total	_____	69.4	24 - 119
Worker equivalent (total months ÷ 12)	_____	5.8	2 - 9.92

* Number of growers that reported each crop are in parentheses; average acreage is for all growers.

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 16 Western New York Fruit Farms, 1983

Item	My Farm	Average per farm		Percent of total 1/84
		1/83	1/84	
Land & buildings	\$ _____	\$213,940	\$228,340	55.5
Machinery & equipment	_____	118,549	138,520	33.7
Fruit	_____	29,865	40,364	9.8
Production supplies	_____	3,490	3,885	0.9
Packing supplies	_____	445	359	0.1
TOTAL FARM INVENTORIES	\$ _____	\$366,289	\$411,468	100.0

Machinery and Real Estate Inventory Calculations

Capital outlays for machinery, buildings, land and land improvements usually occur in large uneven amounts, but depreciate gradually over a period of time. Machinery depreciation is a charge for use of the machinery complement in production. Appreciation in the value of the machinery complement results from inflation in the value of used machinery; it is calculated as a residual.

MACHINERY & EQUIPMENT INVENTORY 16 Western New York Fruit Farms, 1983

Item	My Farm	Average
End of year market value	(1)\$ _____	\$138,520
Beginning market value	\$ _____	\$118,549
Plus machinery purchased	+ _____	+ 22,264
Less machinery sold	- _____	- 860
Less depreciation	- _____	- 19,066
Net end investment	(2)\$ _____	\$120,887
APPRECIATION (1 minus 2)	\$ _____	\$ 17,633

The end of year market value of real estate can be verified by starting with the beginning of year value, making adjustments for purchases and sales, depreciation of buildings and any appreciation in land. Lost capital is the difference between the cost of new buildings or land improvements and the amount these improvements added to the value of the farm. It is not included in farm expenses, since building depreciation is based on the full cost of new buildings and will account for lost capital over the life of the investments. Building depreciation was taken from the farm depreciation schedule and is included as a farm expense. Real estate appreciation was estimated by each farm operator. It is the increase in value of real estate caused by demand and inflation.

REAL ESTATE INVENTORY CALCULATIONS
16 Western New York Fruit Farms, 1983

Item	My Farm	Average
Beginning market value	\$ _____	\$213,940
Cost of new real estate	\$ _____	\$ 12,306
Less lost capital	- _____	- 26
Value of new added	+ _____	+ 12,280
Less real estate depreciation	- _____	- 5,973
Less real estate sold	- _____	- 0
Total without appreciation	\$ _____	\$220,247
Appreciation of beginning real estate	+ _____	+ 8,093
End of year market value	\$ _____	\$228,340

Farm Family Financial Situation

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

FARM FAMILY FINANCIAL SITUATION 16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
<u>Assets</u>		
Total farm inventory	\$ _____	\$411,655
Accounts receivable	_____	22,984
Cash and checking account	_____	22,838
Co-op stocks	_____	8,241
Total Farm Assets	\$ _____	\$465,718
Total Non-farm Assets	\$ _____	\$ 29,108
TOTAL ASSETS	\$ _____	\$494,826
<u>Liabilities</u>		
Real estate mortgage	\$ _____	\$ 48,566
Liens and secured notes	_____	17,514
Installment contracts	_____	4,967
Other farm debt	_____	14,689
Total Farm Liabilities	\$ _____	\$ 85,736
Non-farm Liabilities	\$ _____	0
TOTAL LIABILITIES	\$ _____	\$ 85,736
Farm Net Worth (Farm assets less farm liabilities)	\$ _____	\$379,982
Family Net Worth (Total assets less total liabilities)	\$ _____	\$409,090
Percent Equity (Family net worth ÷ total assets)	_____ %	83%
<u>Payment Ability</u>		
Cash for investment, principle pay- ments, and family living expenses	\$ _____	\$ 49,371
Interest paid	_____	6,825
CASH AVAILABLE FOR DEBT PAYMENT, CAPITAL INVESTMENT, & FAMILY LIVING EXPENSES	\$ _____	\$ 56,196
Debt Payments Planned this year	\$ _____	\$ 21,158

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 or personal living expenses, and to make debt payments.

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 fruit farms.

FARM RECEIPTS 16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm	Percent of Total
Apples	\$ _____	\$140,775	72.3
Tart Cherries	_____	19,187	9.9
Peaches	_____	5,812	3.0
Pears	_____	9,128	4.7
Plums and prunes	_____	1,112	0.6
Grapes	_____	4,049	2.1
Sweet Cherries	_____	3,008	1.5
Other fruits	_____	37	0.0
TOTAL FRUITS	\$ _____	\$183,108	94.1
Miscellaneous	_____	11,476	5.9
TOTAL CASH RECEIPTS	\$ _____	\$194,584	100.0
Increase in fruit inventory	_____	10,499	
Increase in supply and other inventory	_____	309	
TOTAL FARM RECEIPTS	\$ _____	\$205,392	

The apple crop is by far the most important commodity produced on these farms. Total apple sales averaged 72 percent of total cash receipts.

The increases in fruit and supply inventories are included as farm receipts when measuring total farm income. The expenses associated with increasing fruit and supply inventories are included on the next page. The increase in supplies includes both production and packing supplies. Decreases in fruit and supply inventories are charged as overhead expenses.

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.

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 non-farm income.

FARM EXPENSES
16 Western New York Fruit Farms, 1983

Item	My Farm	Average Per Farm	Percent of Total
Hired Labor (other than picking)	\$ _____	\$ 26,273	18.1
Picking labor	_____	36,799	25.3
Machine hire	_____	2,312	1.6
Machine repair & farm share of auto expense	_____	8,989	6.2
Gasoline and oil	_____	6,944	4.8
Trucking	_____	925	0.6
Spray	_____	21,911	15.1
Fertilizer	_____	4,467	3.1
Trees and plants (replacements)	_____	941	0.6
Other crop expense	_____	2,755	1.9
Packing supplies	_____	864	0.6
Storage	_____	4,427	3.1
Marketing	_____	1,269	0.9
Products bought for resale	_____	2,082	1.4
Real estate repairs	_____	1,833	1.3
Taxes	_____	3,850	2.7
Insurance	_____	3,106	2.1
Rent	_____	2,974	2.0
Electric	_____	1,607	1.1
Telephone	_____	523	0.4
Interest paid	_____	6,825	4.7
Miscellaneous	_____	3,537	2.4
TOTAL CASH OPERATING EXPENSES	\$ _____	\$145,213	100.0
Machinery depreciation	_____	19,066	
Building depreciation	_____	2,641	
Orchard depreciation	_____	3,332	
Decrease in fruit inventory	_____	0	
Decrease in supply & other inventory	_____	0	
Unpaid family labor @ \$500/mo.	_____	1,250	
Interest on equity capital @ 5%*	_____	18,999	
TOTAL FARM EXPENSES	\$ _____	\$190,501	

* Calculated as follows: Total farm assets at the end of the year less farm liabilities @ 5% interest.

NET CASH FARM INCOME
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
Total Cash Receipts	\$ _____	\$194,584
Total Cash Operating Expenses	_____	<u>145,213</u>
NET CASH FARM INCOME	\$ _____	\$ 49,371

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
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
Total Farm Receipts	\$ _____	\$205,392
Total Farm Expenses	_____	<u>190,501</u>
LABOR & MANAGEMENT INCOME PER FARM	\$ _____	\$ 14,891
Number of Operators	_____	1.1
LABOR & MANAGEMENT INCOME PER OPERATOR	\$ _____	\$ 13,537

In addition to labor and management income, the owner-operator of a farm business should receive income from the capital investment in the business. This income is received in the form of interest on equity in the business and real estate and machinery appreciation. These three "ownership 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.

LABOR, MANAGEMENT, AND OWNERSHIP INCOME
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
Labor & Management Income per Farm	\$ _____	\$13,537
Add: Real Estate Appreciation	_____	8,093
Add: Machinery Appreciation	\$ _____	17,633
Add: Interest on Equity Capital @ 5%	_____	<u>18,999</u>
LABOR, MANAGEMENT & OWNERSHIP INCOME PER FARM	\$ _____	\$58,262
Number of Operators	_____	1.1
LABOR, MANAGEMENT & OWNERSHIP INCOME PER OPERATOR	\$ _____	\$52,965

Return on equity capital can be computed with or without real estate appreciation. To calculate return on equity capital (including real estate appreciation), the value of the 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 assets less total farm liabilities.

RETURN ON EQUITY CAPITAL
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
	<u>Including Appreciation</u>	
Labor, Management & Ownership Income	\$ _____	\$58,262
Less: Value of Operator's Labor & Management*	_____	<u>20,710</u>
Return on Equity Capital	\$ _____	\$37,552
Rate of Return on Equity Capital (equity capital = \$379,982)	_____ %	9.9%

* Values estimated by farmers.

Analysis of the Farm Business

Size and Efficiency

In analyzing a farm business, size is usually the first factor to be examined. Size of farm can have an important effect on many of the other factors such as labor efficiency, cost control, and capital efficiency. The prices received and paid by a farmer are often affected by the volume involved which is a function of the size factor.

In general, larger farm businesses make larger incomes. There are at least two basic reasons for this. Larger businesses make possible more efficient use of inputs such as equipment, the regular labor force, and other overhead items. Secondly, there are more units of production on which to make a profit. However, some small farms make greater incomes than larger farms. This happens when management ability is not in balance with the size of the business.

High rates of crop production are very important to the success of a farm business. However, when high crop yields are achieved without regard to quality or cost, net income can be reduced.

Labor is one of the limiting resources on many farms. Efficient use of labor tends to add to the profitability of a farm business. The productivity of labor can be increased by use of modern equipment, buildings and materials. However, one must be careful not to invest in technology that adds little to productivity in relation to cost.

In many businesses, poor capital efficiency is a major cause of low profits. The measures of capital efficiency shown in the following table include owned as well as borrowed capital. It is possible for the business to be under-capitalized, but investing too much capital per production unit is a more common problem.

SELECTED FARM BUSINESS MEASURES
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
<u>Measures of size</u>		
Acres in crops	_____	151.3
Acres in fruit	_____	150.5
Total bearing acres	_____	122.9
Worker equivalents	_____	5.8
Bushels of apples produced	_____	50,872
Fruit receipts (\$)	_____	183,108
<u>Production efficiency</u>		
Fruit receipts per bearing acre (\$)	_____	1,490
Bushels of apples per bearing acre	_____	562
Bushels of peaches per bearing acre	_____	158
Bushels of pears per bearing acre	_____	305
Bushels of plums & prunes per bearing acre	_____	245
<u>Labor efficiency</u>		
Acres in fruit per worker equivalent	_____	26.0
Fruit receipts per worker equivalent (\$)	_____	31,570
Bushels of apples harvested per worker equivalent	_____	8,771
<u>Capital efficiency</u>		
Capital turnover	_____	2.1 yrs.
Total investment per acre of bearing fruit (\$)	_____	3,348
Total investment/worker equivalent (\$)	_____	70,943
Total investment per crop acre (\$)	_____	2,720
Land and buildings per crop acre (\$)	_____	1,509
Land and buildings per acre owned (\$)	_____	1,240

Cost Control

The control of costs is a big factor in the success of modern commercial fruit operations. The exact level of production items to be used to obtain the greatest net return is difficult to determine.

Successful farm managers have substituted power and machinery for labor to a large degree. As this process continues, it is vitally important to retain control of the costs associated with owning and operating farm equipment.

MACHINERY COSTS 16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm	Percent
Depreciation	\$ _____	\$19,066	43.6
Interest @ 5% on average inventory	_____	6,427	14.7
Machine hire	_____	2,312	5.3
Machine repairs and auto	_____	8,989	20.5
Gasoline and oil	_____	6,944	15.9
TOTAL MACHINERY COSTS	\$ _____	\$43,738	100.0
Machinery cost:			
Per crop acre	\$ _____	\$ 289	
Per acre of bearing fruit	\$ _____	356	
Machinery investment per fruit acre	\$ _____	920	
Per dollar of fruit sold	\$ _____	0.24	

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
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
Value of operator's labor*	_____	\$ 9,900
Hired labor	_____	63,072
Unpaid family labor	_____	1,250
TOTAL LABOR COSTS	_____	\$ 74,222
Total machinery cost	_____	43,738
TOTAL LABOR & MACHINERY COSTS	_____	\$117,960

Labor cost:

Per crop acre	_____	\$491
Per acre of bearing fruit	_____	\$604
Per dollar of fruit sold	_____	\$.41

Labor and machinery costs:

Per crop acre	_____	\$780
Per acre of bearing fruit	_____	\$960
Per dollar of fruit sold	_____	\$.64

* Valued at \$9,000 per operator. Operator's labor does not include management and capital contributed.

Miscellaneous Cost Control Measures

MISCELLANEOUS COST MEASURES
16 Western New York Fruit Farms, 1983

Item	My Farm	Average per Farm
Spray materials per fruit acre	_____	\$146
Taxes per crop acre owned	_____	25
Taxes per \$1,000 of end real estate inventory	_____	17
Taxes and insurance per \$1,000 real estate inventory	_____	30