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FRUIT FARM BUSINESS SUMMARY

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LAKE ONTARIO REGION 1980

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LAKE ONTARIO
FRUIT FARM
BUSINESS SUMMARY
1980
Ten Fruit Farms

This is a summary and analysis of the 1980 farm business records from ten commercial fruit farms in Western New York State. The records were collected and checked by Richard L. Pease, Cooperative Extension Fruit 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 73 percent of the cash receipts in 1980 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 Gerald B. White, Department of Agricultural Economics, Cornell University, for use in a systematic study of individual farm business operations.

The 1979 and 1980 Crop Years

Apple production in New York State was 24.6 million bushels in 1979 and 26.2 million bushels in 1980, a record crop. Growers had enjoyed a combination of favorable prices and relatively high yields in 1979. For the 1980 season, the average fresh market prices increased slightly, but lower processing apple prices led to a weakened average price for all sales.

The 1979 and 1980 Crop Years

	<u>1979</u>	<u>1980</u>
Bushels of apples produced, all varieties, mil. bu.		
Western New York	16.2	17.4
State of New York	24.6	26.2
Average price received per bushel		
All apples	4.20	3.95
Fresh apples	7.35	7.56
Processing apples	2.16	1.81

Source: New York Crop Reporting Service, Fruit series, selected reports from 1979 and 1980.

A comparison of selected measures from the fruit farm business summaries is shown below. Labor and management income was down sharply in 1980 reflecting in part a change in the method of handling depreciation of machinery and real estate depreciation which began this year. Yield per acre for these fruit farms increased from 1979, but price received per bushel of fruit was down, reflecting lower prices for processing apples in 1980.

	<u>1979</u>	<u>1980</u>
No. of farms	10	10
Acres of bearing apples	85.0	82.9
Man equivalents	5.7	6.1
Total farm investment (\$)	301,449	332,886
Investment per bearing acre (\$)	2,340	2,785
Bu. of apples harvested/man	7,325	7,617
Apple yield/bearing acre (bu.)	491	560
Fruit receipts/bearing acre (\$)	1,409	1,403
Average price per bu. of apples (\$)	3.10	2.81
Cash expense/bearing acre (\$)	993	1,180
Labor and mgt. income/farm (\$)	53,912	9,417
Rate of return on equity capital (%)	17.7	5.7

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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average	Range
<u>Land and crops (acres)*</u>			
Bearing fruit:			
Apples	_____	82.9(10)	9 - 183
Cherries	_____	15.0(8)	0 - 33
Peaches	_____	3.8(6)	0 - 16
Pears	_____	6.2(6)	0 - 11
Plums and prunes	_____	3.7(2)	0 - 22
Grapes	_____	5.6(2)	0 - 56
Other fruit	_____	2.3(2)	0 - 22
Total bearing	_____	119.5	51 - 258
Non-bearing	_____	23.9	0 - 55
TOTAL FRUIT	_____	143.4	51 - 276
Other crops	_____	2.3	
TOTAL CROP ACRES	_____	145.7	51 - 276
Total acres owned	_____	188.6	80 - 540
Crop acres rented	_____	17.0	0 - 101
<u>Labor:</u>			
Number of operators	_____	1.3	1 - 3
Operator's age	_____	42.0	25 - 65
Months of: Operator's	_____	13.8	12 - 30
Family paid	_____	5.5	0 - 12
Family unpaid	_____	2.2	0 - 14
Regular hired	_____	23.1	0 - 47
Seasonal hired	_____	28.6	0 - 60
Total	_____	73.2	40 - 117
Man equivalent (total months ÷ 12)	_____	6.1	3.3 - 9.8

* 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 Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per farm		Percent of total 1/81
		1/80	1/81	
Land & buildings	\$ _____	\$175,140	\$175,370	52.7
Machinery & equipment	_____	80,732	87,382	26.3
Fruit	_____	47,881	63,121	19.0
Production supplies	_____	6,920	5,001	1.5
Packing supplies	_____	680	812	.2
Other	_____	880	1,200	.4
TOTAL FARM INVENTORIES	\$ _____	\$312,233	\$332,886	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 Ten Western New York Fruit Farms, 1980

Item	My Farm	Average
End of year market value	(1)\$ _____	\$87,382
Beginning market value	\$ _____	\$80,732
Plus machinery purchased	+ _____	+18,269
Less machinery sold	- _____	- 150
Less depreciation	- _____	-13,193
Net end investment	(2)\$ _____	\$85,658
APPRECIATION (1 minus 2)	\$ _____	\$ 1,724

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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average
Beginning market value	\$ _____	\$175,140
Cost of new real estate	\$ _____	\$ 5,141
Less lost capital	- _____	- 1,303
Value of new added	+ _____	+ 3,838
Less building depreciation	- _____	- 2,304
Less real estate sold	- _____	- 502
Total without appreciation	\$ _____	\$176,172
Appreciation of beginning real estate	+ _____	+ -0-
End of year market value	\$ _____	\$175,370

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm
<u>Assets</u>		
Total farm inventory	\$ _____	\$332,886
Accounts receivable	_____	8,214
Cash and checking account	_____	5,107
Co-op stocks	_____	7,545
Total Farm Assets	\$ _____	\$353,752
Total Non-farm Assets	\$ _____	\$ 35,080
TOTAL ASSETS	\$ _____	\$388,832
<u>Liabilities</u>		
Real estate mortgage	\$ _____	\$ 26,126
Liens and secured notes	_____	21,807
Installment contracts	_____	0
Other farm debt	_____	16,223
Total Farm Liabilities	\$ _____	\$ 64,156
Non-farm Liabilities	\$ _____	0
TOTAL LIABILITIES	\$ _____	\$ 64,156
Farm Net Worth (Farm assets less farm liabilities)	\$ _____	\$289,596
Family Net Worth (Total assets less total liabilities)	\$ _____	\$324,676
Percent Equity (Family net worth ÷ total assets)	_____ %	84%
<u>Payment Ability</u>		
Cash for investment, principle pay- ments, and family living expenses	\$ _____	\$ 38,008
Interest paid	_____	2,101
CASH AVAILABLE FOR DEBT PAYMENT, CAPITAL INVESTMENT, & FAMILY LIVING EXPENSES	\$ _____	\$ 40,109
Debt Payments Planned this year	\$ _____	\$ 5,930

Payment Ability is the most important consideration in determining if and how proposed investment 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 Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm	Percent of Total
Apples	\$ _____	\$130,379	72.8
Cherries	_____	14,625	8.1
Peaches	_____	4,241	2.4
Pears	_____	5,438	3.0
Plums and prunes	_____	3,160	1.8
Grapes	_____	4,274	2.4
Other fruits	_____	5,545	3.1
TOTAL FRUITS	\$ _____	\$167,662	93.6
Miscellaneous	_____	11,320	6.3
TOTAL CASH RECEIPTS	\$ _____	\$178,982	99.9
Increase in fruit inventory	_____	15,240	
Increase in supply and other inventory	_____	0	
TOTAL FARM RECEIPTS	\$ _____	\$194,222	

The apple crop is by far the most important commodity produced on these farms. Total apple sales averaged 73 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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average Per Farm	Percent of Total
Hired Labor (other than picking)	\$ _____	\$ 26,509	18.8
Picking labor	_____	37,695	26.7
Machine hire	_____	9,909	7.0
Machine repair & farm share of auto expense	_____	5,840	4.1
Gasoline and oil	_____	5,874	4.2
Spray	_____	15,185	10.8
Fertilizer	_____	3,086	2.2
Trees and plants (replacements)	_____	2,076	1.5
Other crop expense	_____	1,304	.9
Packing supplies	_____	2,624	1.9
Marketing and storage	_____	3,954	2.8
Products bought for resale	_____	5,242	3.7
Real estate repairs	_____	1,342	1.0
Taxes	_____	3,452	2.4
Insurance	_____	2,928	2.1
Rent	_____	3,549	2.5
Utilities	_____	2,117	1.5
Interest paid	_____	2,101	1.5
Miscellaneous	_____	6,187	4.4
TOTAL CASH OPERATING EXPENSES	\$ _____	\$140,974	100.0
Machinery depreciation	_____	13,193	
Building depreciation	_____	2,304	
Decrease in fruit inventory	_____	0	
Decrease in supply & other inventory	_____	1,467	
Unpaid family labor @ \$500/mo.	_____	1,100	
Interest on equity capital @ 9%*	_____	26,064	
TOTAL FARM EXPENSES	\$ _____	\$185,102	

* Calculated as follows: Total farm assets at the end of the year less farm liabilities @ 9% interest.

NET CASH FARM INCOME
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Total Cash Receipts	\$ _____	\$178,982
Total Cash Operating Expenses	_____	<u>140,974</u>
NET CASH FARM INCOME	\$ _____	\$ 38,008

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 nine percent interest rate, or opportunity cost, for the use of equity capital, assuming an alternative investment would return as much.

LABOR AND MANAGEMENT INCOME
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Total Farm Receipts	\$ _____	\$194,222
Total Farm Expenses	_____	<u>185,102</u>
LABOR & MANAGEMENT INCOME PER FARM	\$ _____	\$ 9,120
Number of Operators	_____	1.3
LABOR & MANAGEMENT INCOME/ OPERATOR	\$ _____	\$ 7,015

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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Labor & Management Income per Farm	\$ _____	\$ 9,120
Add: Real Estate Appreciation	_____	0
Add: Machinery Appreciation	\$ _____	1,724
Add: Interest on Equity Capital @ 9%	_____	26,064
LABOR, MANAGEMENT & OWNERSHIP INCOME PER FARM	\$ _____	\$36,908
Number of Operators	_____	1.3
LABOR, MANAGEMENT & OWNERSHIP INCOME PER OPERATOR	\$ _____	\$28,391

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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm
		<u>Including Appreciation</u>
Labor, Management & Ownership Income	\$ _____	\$36,908
Less: Value of Operator's Labor & Management*	_____	20,269
Return on Equity Capital	\$ _____	\$16,639
Rate of Return on Equity Capital (equity capital = \$289,596)	_____ %	5.7%
		<u>Excluding Appreciation</u>
Return on Equity Capital (from above)	\$ _____	\$16,639
Less: Real Estate Appreciation	_____	0
Less: Machinery Appreciation	_____	1,724
Return on Equity Capital	_____	14,915
Rate of Return on Equity Capital	_____ %	5.2%

* 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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm
<u>Measures of size</u>		
Acres in crops	_____	145.7
Acres in fruit	_____	143.4
Total bearing acres	_____	119.5
Man equivalents	_____	6.1
Bushels of apples produced	_____	46,464
Fruit receipts	_____	167,662
<u>Production efficiency</u>		
Bushels of apples per bearing acre	_____	560
Bushels of peaches per bearing acre	_____	145
Bushels of pears per bearing acre	_____	145
Bushels of plums & prunes per bearing acre	_____	109
<u>Labor efficiency</u>		
Acres in fruit/man equivalent	_____	23.5
Fruit receipts/man equivalent	_____	27,486
Bushels of apples harvested per man equivalent	_____	7,617
<u>Capital efficiency</u>		
Capital turnover	_____	1.9 yrs.
Total investment per acre of bearing fruit	_____	2,785
Total investment/man equivalent	_____	54,571
Total investment/crop acre	_____	2,285
Land and buildings/crop acre	_____	1,204
Land and buildings/acre owned	_____	929

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm	Percent
Depreciation	\$ _____	\$13,193	13.1
Interest @ 9% on average inventory	_____	7,565	17.8
Machine hire	_____	9,909	23.4
Machine repairs and auto	_____	5,840	13.8
Gasoline and oil	_____	5,874	13.9
TOTAL MACHINERY COSTS	\$ _____	\$42,381	100.0
Machinery cost:			
Per crop acre	\$ _____	\$290	
Per acre of bearing fruit	\$ _____	355	
Per dollar of fruit sold	\$ _____	.25	

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
Ten Western New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Value of operator's labor*	_____	\$ 11,700
Hired labor	_____	64,204
Unpaid family labor	_____	1,100
TOTAL LABOR COSTS	_____	\$ 77,004
Total machinery cost	_____	42,381
TOTAL LABOR & MACHINERY COSTS	_____	\$119,385
<hr/>		
Labor cost:		
Per crop acre	_____	\$ 529
Per acre of bearing fruit	_____	644
Per dollar of fruit sold	_____	.46
Labor and machinery costs:		
Per crop acre	_____	\$ 819
Per acre of bearing fruit	_____	999
Per dollar of fruit sold	_____	.71

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

Miscellaneous Cost Control Measures

MISCELLANEOUS COST MEASURES
Eastern and Western New York Fruit Farms, 1980

Item	Average of 14 Eastern New York Fruit Farms, 1980	Average of 10 Western New York Fruit Farms, 1980
Spray materials per fruit acre	\$109	\$105
Taxes per crop acre owned	43	24
Taxes per \$1,000 of end real estate inventory	16	19
Taxes and insurance per \$1,000 real estate inventory	41	37