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FRUIT FARM BUSINESS SUMMARY

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LAKE ONTARIO REGION 1979

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LAKE ONTARIO
FRUIT FARM
BUSINESS SUMMARY
1979
Ten Fruit Farms

This is a summary and analysis of the 1979 farm business records from ten commercial fruit farms in the Lake Ontario Region. The records were collected and checked in 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 68 percent of the cash receipts in 1979 was from the sale of apples. The data were not obtained by using a random or representative sample of all fruit farms in the Lake Ontario Region. Therefore, the analysis should not be used to represent the Lake Ontario 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.

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 Lake Ontario fruit farms.

FARM ORGANIZATION
Ten Lake Ontario Farms, 1979

Item	My Farm	Average	Range
<u>Land and crops (acres)*</u>			
Bearing fruit:			
Apples	_____	85.0(10)	
Peaches	_____	3.1(3)	
Pears	_____	5.8(5)	
Plums and prunes	_____	3.9(4)	
Other fruit	_____	31.0(9)	
Total bearing	_____	128.8	
Non-bearing	_____	22.2	
TOTAL FRUIT	_____	151.0	
Other crops	_____	2.0	
TOTAL CROP ACRES	_____	153.0	
Total acres owned	_____	190.0	
Crop acres rented	_____	28.2	
<u>Labor:</u>			
Number of operators	_____	1.3	1 - 2
Operator's age	_____	41.6	25 - 64
Months of: Operator's	_____	15.2	12 - 24
Family paid	_____	5.8	0 - 14
Family unpaid	_____	2.3	0 - 14
Regular hired	_____	17.2	0 - 40
Seasonal hired ^{1/}	_____	27.8	8.6 - 54.6
Total	_____	68.3	33.4 - 110.9
Man equivalent (total months ÷ 12)	_____	5.7	2.9 - 9.2

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

^{1/} Based on the assumptions that a seasonal worker picked 10 bu. of apples per hour, 5 bu. of peaches per hour, 10 bu. of pears per hour, and 5 bu. of plums and prunes per hour.

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 Lake Ontario Farms, 1979

Item	My Farm	Average per farm		Percent of total 1/80
		1/79	1/80	
Land & buildings	\$ _____	\$171,674	\$183,055	60.7
Machinery & equipment	_____	76,136	81,091	26.9
Fruit	_____	25,324	27,508	9.1
Production supplies	_____	5,407	6,840	2.2
Packing supplies	_____	1,230	1,590	.5
Other	_____	710	1,365	.4
 TOTAL FARM INVENTORIES	 \$ _____	 \$280,481	 \$301,449	 99.8

Depreciation Calculations

Capital outlays for machinery and buildings usually occur in large uneven amounts, but assets depreciate gradually over a period of time. Different accounting methods may be used to even-out capital expenditures. Including the capital outlay as a farm expense and the increase in inventory as a farm receipt tends to inflate total farm expenses as well as total farm receipts.

In the following table the net change in inventory value is calculated using beginning and end of year market values as well as the actual

cost of capital purchases and the amount received for capital sales. The beginning machinery inventory plus new purchases, will almost always be larger than the end inventory plus sales. The residue is machinery depreciation. However, the value of land and/or fruit trees may increase in value more than buildings depreciate during the year. This is called real estate appreciation.

MACHINERY DEPRECIATION AND REAL ESTATE BALANCE
Ten Lake Ontario Farms, 1979

	Machinery		Real Estate	
	My Farm	Average	My Farm	Average
Beginning inventory	\$ _____	\$76,136	\$ _____	\$171,674
Purchases	\$ _____	15,754	\$ _____	19,117
Total (A)	\$ _____	\$91,890	\$ _____	\$190,901
End inventory	\$ _____	81,091	\$ _____	183,055
Sales	\$ _____	1,010	\$ _____	0
Total (B)	\$ _____	\$82,101	\$ _____	\$183,055
DEPRECIATION (A minus B) or	\$ _____	9,789		
APPRECIATION on Land			\$ _____	\$ 0
DEPRECIATION on Buildings			\$ _____	1,566
Lost Capital			\$ _____	6,280

The average machinery depreciation of \$9,789 is 10.7 percent of the beginning inventory plus machinery purchased.

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

FARM FAMILY FINANCIAL SITUATION
Ten Lake Ontario Farms, January 1, 1979

Item	My Farm	Average per Farm
<u>Assets</u>		
Total farm inventory	\$ _____	\$301,449
Accounts receivable	_____	8,347
Cash and checking account	_____	6,466
Co-op stocks	_____	6,218
Total Farm Assets	\$ _____	\$322,480
Total Non-farm Assets	\$ _____	\$ 19,473
TOTAL ASSETS	\$ _____	\$341,953
<u>Liabilities</u>		
Real estate mortgage	\$ _____	\$ 26,412
Liens and secured notes	_____	11,020
Installment contracts	_____	0
Other farm debt	_____	6,770
Total Farm Liabilities	\$ _____	\$ 44,202
Non-farm Liabilities	\$ _____	\$ 0
TOTAL LIABILITIES	\$ _____	\$ 44,202
Farm Net Worth (Farm assets less farm liabilities)	\$ _____	\$278,278
Family Net Worth (Total assets less total liabilities)	\$ _____	\$297,251
Percent Equity (Family net worth ÷ total assets)	_____ %	87.1%
<u>Payment Ability</u>		
Cash for investment, principle pay- ments, and family living expenses	\$ _____	\$ 62,325
Interest paid	_____	3,368
CASH AVAILABLE FOR DEBT PAYMENT, CAPITAL INVESTMENT, & FAMILY LIVING EXPENSES	\$ _____	\$ 65,693
Debt Payments Planned this year	\$ _____	N/A

income, but a high debt payment schedule may seriously restrict his management flexibility.

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 Lake Ontario Farms, 1979

Item	My Farm	Average per Farm	Percent of Total
Apples	\$ _____	\$129,534	68.1
Cherries	_____	29,920	15.7
Peaches	_____	778	.4
Pears	_____	5,820	3.1
Plums and prunes	_____	3,434	1.8
Other fruits	_____	12,004	6.3
TOTAL FRUITS	\$ _____	\$181,490	95.4
Miscellaneous	_____	8,775	4.6
TOTAL CASH RECEIPTS	\$ _____	\$190,265	100.0
Increase in fruit inventory	_____	2,184	
Increase in supply inventory	_____	1,793	
TOTAL FARM RECEIPTS	\$ _____	\$194,242	

The apple crop is by far the most important commodity produced on these farms. Total apple sales averaged 68 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 Lake Ontario Farms, 1979

Item	My Farm	Average Per Farm	Percent of Total
Hired Labor (other than picking)	\$ _____	\$ 30,345	23.7
Picking labor	_____	30,084	23.5
Machine hire	_____	4,650	3.6
Machine repair & farm share of auto expense	_____	6,886	5.4
Gasoline and oil	_____	5,013	3.9
Spray	_____	15,392	12.0
Fertilizer	_____	3,156	2.5
Trees and plants (replacements)	_____	2,046	1.6
Other crop expense	_____	3,374	2.6
Packing supplies	_____	2,031	1.6
Marketing and storage	_____	2,320	1.8
Products bought for resale	_____	803	.6
Real estate repairs	_____	1,282	1.0
Taxes	_____	3,762	2.9
Insurance	_____	3,114	2.4
Rent	_____	2,820	2.2
Utilities	_____	1,821	1.4
Interest paid	_____	3,368	2.6
Miscellaneous	_____	5,673	4.4
TOTAL CASH OPERATING EXPENSES	\$ _____	\$127,940	99.7
Machinery depreciation*	_____	9,789	
Building depreciation	_____	1,566	
Decrease in fruit inventory	_____	0	
Decrease in supply inventory	_____	0	
Unpaid family labor @ \$450/month	_____	1,035	
Interest in equity capital @ 9%**	_____	25,045	
TOTAL FARM EXPENSES	\$ _____	\$165,375	

* Machinery and building depreciation are calculated on page five.

** Calculated as follows: Total Farm Assets at the end of the year less farm liabilities on 1/80 x 9% interest.

NET CASH FARM INCOME
Ten Lake Ontario Farms, 1979

Item	My Farm	Average per Farm
Total Cash Receipts	\$ _____	\$190,265
Total Cash Operating Expenses	_____	<u>127,940</u>
NET CASH FARM INCOME	\$ _____	\$ 62,325

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 Lake Ontario Farms, 1979

Item	My Farm	Average per Farm
Total Farm Receipts	\$ _____	\$194,242
Total Farm Expenses	_____	165,375
LABOR & MANAGEMENT INCOME PER FARM	\$ _____	28,867
Number of Operators	_____	1.3
LABOR & MANAGEMENT INCOME/ OPERATOR	\$ _____	\$ 22,205

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 appreciation. These two "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 Lake Ontario Farms, 1979

Item	My Farm	Average per Farm
Labor & Management Income per Farm	\$ _____	\$28,867
Add: Real Estate Appreciation	_____	0
Add: Interest on Equity Capital @ 9%	_____	<u>25,045</u>
LABOR, MANAGEMENT & OWNERSHIP INCOME PER FARM	\$ _____	\$53,912
Number of Operators	_____	1.3
LABOR, MANAGEMENT & OWNERSHIP INCOME PER OPERATOR	\$ _____	\$41,471

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 Lake Ontario Farms, 1979

Item	My Farm	Average per Farm
Labor, Management & Ownership Income	\$ _____	\$28,867
Less: Value of Operator's Labor & Management*	_____	<u>20,491</u>
Return on Equity Capital	\$ _____	\$49,358
Rate of Return on Equity Capital (equity capital = \$278,278)	_____ %	17.7%

* 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 Lake Ontario Farms, 1979

Item	My Farm	Average per Farm
<u>Measures of size</u>		
Acres in crops		153.0
Acres in fruit		151.0
Total bearing acres		128.8
Man equivalents		5.7
Bushels of apples produced		41,753
Bushels of other fruit produced		2,445
Total bushels of fruit sold		44,198
Fruit receipts		181,490
<u>Production efficiency</u>		
Bushels of apples per bearing acre		491
Bushels of peaches per bearing acre		73
Bushels of pears per bearing acre		229
Bushels of plums & prunes per bearing acre		229
<u>Labor efficiency</u>		
Acres in fruit/man equivalent		26.5
Fruit receipts/man equivalent		31,840
Bushels of apples produced per man equivalent		7,325
<u>Capital efficiency</u>		
Capital turnover		1.58 yrs.
Total investment per acre of bearing fruit		2,340
Total investment/man equivalent		52,886
Total investment/crop acre		1,970
Land and buildings/crop acre		1,196
Land and buildings/acre owned		963

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 Ten Lake Ontario Farms, 1979

Item	My Farm	Average per Farm	Percent
Depreciation	\$ _____	\$ 9,789	29.3
Interest @ 9% on average inventory	_____	7,075	21.2
Machine hire	_____	4,650	13.9
Machine repairs and auto	_____	6,886	20.6
Gasoline and oil	_____	5,013	15.0
TOTAL MACHINERY COSTS	\$ _____	\$33,413	100.0
Machinery cost:			
Per crop acre	\$ _____	218	
Per acre of bearing fruit	\$ _____	259	
Per dollar of fruit sold	\$ _____	.18	
Per bushel of fruit sold	\$ _____	.76	

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 Lake Ontario Farms, 1979

Item	My Farm	Average per Farm
Value of operator's labor*	_____	\$ 10,140
Hired labor	_____	60,429
Unpaid family labor	_____	<u>1,035</u>
TOTAL LABOR COSTS	_____	\$ 71,604
Total machinery cost	_____	<u>33,413</u>
TOTAL LABOR & MACHINERY COSTS	_____	\$105,017
<hr/>		
Labor cost:		
Per crop acre	_____	\$ 468
Per acre of bearing fruit	_____	556
Per dollar of fruit sold	_____	.39
Per bushel of fruit sold	_____	1.62
Labor and machinery costs:		
Per crop acre	_____	\$ 686
Per acre of bearing fruit	_____	815
Per dollar of fruit sold	_____	.59
Per bushel of fruit sold	_____	2.38

* Valued at \$7,800 per operator. Operator's labor does not include management and capital contributed.

Miscellaneous Cost Control Measures

MISCELLANEOUS COST MEASURES
Comparison of Eastern New York vs. Lake Ontario Region

Item	Average of 13 Eastern New York Fruit Farms, 1979	Average of 10 Lake Ontario New York Fruit Farms, 1979
Spray expense per fruit acre	\$131	\$102
Taxes per crop acre owned	49	25
Taxes per \$1,000 of end real estate inventory	16	21
Taxes and insurance per \$1,000 real estate inventory	45	38