

FRUIT FARM BUSINESS SUMMARY

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**EASTERN NEW YORK
1980**

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The 1979 and 1980 Crop Years

Nine growers included in the summary this year reported on a calendar year basis. Therefore, some receipts and expenses from both 1979 and the 1980 crop years are included. Five growers were on a crop-year reporting basis; therefore, only the 1979 crop year receipts and expenses are included. Thus, both the 1979 and the 1980 crop year yields and prices affected the statistics in this summary, but primarily the 1979 crop.

Apple production in New York State was 24.6 million bushels in 1979 and 25.5 million bushels in 1980, somewhat lower than the 26.4 million bushel record crop of 1978. The production in Eastern New York was also down from 1978. Growers enjoyed a combination of favorable prices and relatively high yields in 1979. For the 1980 season, although final figures on prices are not yet available, average prices are expected to be down considerably from 1979, especially for processing apples.

The 1979 and 1980 Crop Years

	<u>1978</u>	<u>1979</u>	<u>1980</u>
Bushels of apples produced, all varieties, mil. bu.			
Eastern New York	9.5	8.5	8.7
State of New York	26.4	24.6	25.5
Average price received per bushel			
All apples	3.57	4.20	4.07
Fresh apples	5.67	7.35	N.A.

Source: New York Crop Reporting Service, Fruit series, selected reports from 1978, 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 mainly a change in the method of handling depreciation of machinery and real estate depreciation which began this year.) Yield per acre was down in 1980, but the prices received per bushel of fruit was up, reflecting favorable prices for fresh market apples from the 1979 crop.

	<u>1978</u>	<u>1979</u>	<u>1980</u>
No. of farms	15	13	14
Acres of bearing apples	127	166	160
Man equivalents	11.3	14.1	14.5
Total farm investment (\$)	665,019	932,075	1,017,331
Investment per bearing acre (\$)	4,733	5,385	6,052
Bu. of apples harvested/man	4,774	4,785	4,290
Apple yield/bearing acre (bu.)	424	407	389
Fruit receipts/bearing acre (\$)	2,026	2,214	2,549
Average price per bu. of apples (\$)	5.06	5.64	6.72
Cash expense/bearing acre (\$)	1,590	1,962	2,218
Labor and mgt. income/farm (\$)	51,384	3,856	(-)27,862
Rate of return on equity capital (%)	13.3	8.1	4.4

EASTERN NEW YORK
FRUIT FARM
BUSINESS SUMMARY
1980
Fourteen Fruit Farms

This is a summary and analysis of the 1980 farm business records from fourteen commercial fruit farms in Eastern New York State. The records were collected and checked in cooperation with the Farm Credit Service and William D. Gerling, Fruit Management and Marketing Specialist, Eastern New York.

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 94 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 Eastern New York. Therefore, the analysis should not be used to represent the Eastern 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.

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average	Range
<u>Land and crops (acres)*</u>			
Bearing fruit:			
Apples	_____	159.8(14)	28 - 435
Peaches	_____	1.3(5)	0 - 7
Pears	_____	5.8(11)	0 - 19
Plums and prunes	_____	.4(2)	0 - 5
Other fruit	_____	.8(2)	0 - 10
Total bearing	_____	168.1	31 - 435
Non-bearing	_____	58.1	0 - 135
TOTAL FRUIT	=====	226.2	39 - 570
Other crops	_____	0.0	
TOTAL CROP ACRES	=====	226.2	39 - 570
Total acres owned	_____	252.7	39 - 570
Crop acres rented	_____	38.0	0 - 119
<u>Labor:</u>			
Number of operators	_____	1.9	1 - 4
Operator's age	_____	41.3	23 - 61
Months of: Operator's	_____	23.1	12 - 48
Family paid	_____	7.1	0 - 22
Family unpaid	_____	5.1	0 - 18
Regular hired	_____	92.2	1 - 346
Seasonal hired	_____	46.9	2 - 114
Total	=====	174.4	31 - 510
Man equivalent (total months ÷ 12)	_____	14.5	2.6 - 52.5

* 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 Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per farm		Percent of total 1/81
		1/80	1/81	
Land & buildings	\$ _____	\$542,521	\$ 614,483	60.4
Machinery & equipment	_____	181,536	210,536	20.7
Fruit	_____	170,914	168,276	16.6
Production supplies	_____	7,828	6,457	.6
Packing supplies	_____	14,710	17,579	1.7
Other	_____	216	-0-	0.0
TOTAL FARM INVENTORIES	\$ _____	\$917,725	\$1,017,331	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 Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average
End of year market value	(1)\$ _____	\$210,536
Beginning market value	\$ _____	\$181,536
Plus machinery purchased	+ _____	+ 31,236
Less machinery sold	- _____	- 429
Less depreciation	- _____	- 22,116
Net end investment	(2)\$ _____	\$190,227
APPRECIATION (1 minus 2)	\$ _____	\$ 20,309

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average
Beginning market value	\$ _____	\$542,521
Cost of new real estate	\$ _____	\$ 64,439
Less lost capital	- _____	- -0-
Value of new added	+ _____	+ 64,439
Less building depreciation	- _____	- 4,882
Less real estate sold	- _____	- -0-
Total without appreciation	\$ _____	\$602,078
Appreciation of beginning real estate	+ _____	+ 12,405
End of year market value	\$ _____	\$614,483

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	\$ _____	\$1,017,331
Accounts receivable	_____	28,423
Cash and checking account	_____	11,465
Co-op stocks	_____	22,711
Total Farm Assets	\$ _____	\$1,079,930
Total Non-farm Assets	\$ _____	\$ 18,321
TOTAL ASSETS	\$ _____	\$1,098,251
<u>Liabilities</u>		
Real estate mortgage	\$ _____	\$ 207,334
Liens and secured notes	_____	120,622
Installment contracts	_____	2,849
Other farm debt	_____	5,660
Total Farm Liabilities	\$ _____	\$ 336,465
Non-farm Liabilities	\$ _____	527
TOTAL LIABILITIES	\$ _____	\$ 336,992
Farm Net Worth (Farm assets less farm liabilities)	\$ _____	\$ 743,465
Family Net Worth (Total assets less total liabilities)	\$ _____	\$ 761,259
Percent Equity (Family net worth ÷ total assets)	_____ %	69%
<u>Payment Ability</u>		
Cash for investment, principle pay- ments, and family living expenses	\$ _____	\$ 69,940
Interest paid	_____	18,237
CASH AVAILABLE FOR DEBT PAYMENT, CAPITAL INVESTMENT, & FAMILY LIVING EXPENSES	\$ _____	\$ 88,177
Debt Payments Planned this year	\$ _____	\$ 49,127

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 Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm	Percent of Total
Apples	\$ _____	\$417,688	94.3
Cherries	_____	195	0.0
Peaches	_____	1,396	.3
Pears	_____	6,511	1.5
Plums and prunes	_____	527	.1
Other fruits	_____	2,107	.5
TOTAL FRUITS	\$ _____	\$428,424	96.7
Miscellaneous	_____	14,335	3.2
TOTAL CASH RECEIPTS	\$ _____	\$442,759	99.9
Increase in fruit inventory	_____	N.A.	
Increase in supply and other inventory	_____	1,282	
TOTAL FARM RECEIPTS	\$ _____	\$444,041	

The apple crop is by far the most important commodity produced on these farms. Total apple sales averaged 94 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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average Per Farm	Percent of Total
Hired Labor (other than picking)	\$ _____	\$ 97,542	26.2
Picking labor	_____	35,497	9.5
Machine hire	_____	7,108	1.9
Machine repair & farm share of auto expense	_____	13,151	3.5
Gasoline and oil	_____	15,207	4.1
Spray	_____	24,758	6.6
Fertilizer	_____	11,368	3.0
Trees and plants (replacements)	_____	4,326	1.2
Other crop expense	_____	13,824	3.7
Packing supplies	_____	46,058	12.4
Marketing and storage	_____	8,451	2.3
Products bought for resale	_____	9,436	2.5
Real estate repairs	_____	12,207	3.3
Taxes	_____	9,625	2.6
Insurance	_____	15,715	4.2
Rent	_____	7,289	2.0
Utilities	_____	14,657	3.9
Interest paid	_____	18,237	4.9
Miscellaneous	_____	8,366	2.2
TOTAL CASH OPERATING EXPENSES	\$ _____	\$372,819	100.0
Machinery depreciation	_____	22,116	
Building depreciation	_____	4,882	
Decrease in fruit inventory	_____	2,638	
Decrease in supply & other inventory	_____	N/A	
Unpaid family labor @ \$500/mo.	_____	2,536	
Interest on equity capital @ 9%*	_____	66,912	
TOTAL FARM EXPENSES	\$ _____	\$471,903	

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

	My Farm	Average per Farm
Total Cash Receipts	\$ _____	\$442,759
Total Cash Operating Expenses	_____	<u>372,819</u>
NET CASH FARM INCOME	\$ _____	\$ 69,940

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Total Farm Receipts	\$ _____	\$444,041
Total Farm Expenses	_____	<u>471,903</u>
LABOR & MANAGEMENT INCOME PER FARM	\$ _____	(-) \$ 27,862
Number of Operators	_____	1.9
LABOR & MANAGEMENT INCOME/ OPERATOR	\$ _____	(-) \$ 14,664

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Labor & Management Income per Farm	\$ _____	(-) \$27,862
Add: Real Estate Appreciation	_____	12,405
Add: Machinery Depreciation	\$ _____	20,309
Add: Interest on Equity Capital @ 9%	_____	66,912
LABOR, MANAGEMENT & OWNERSHIP INCOME PER FARM	\$ _____	\$71,764
Number of Operators	_____	1.9
LABOR, MANAGEMENT & OWNERSHIP INCOME PER OPERATOR	\$ _____	\$37,771

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm
	<u>Including Appreciation</u>	
Labor, Management & Ownership Income	\$ _____	\$71,764
Less: Value of Operator's Labor & Management*	_____	<u>39,371</u>
Return on Equity Capital	\$ _____	\$32,393
Rate of Return on Equity Capital (equity capital = \$743,465)	_____ %	4.4%
	<u>Excluding Appreciation</u>	
Return on Equity Capital (from above)	\$ _____	\$32,393
Less: Real Estate Appreciation	_____	12,405
Less: Machinery Appreciation	_____	20,309
Return on Equity Capital	_____	(-) 321
Rate of Return on Equity Capital	_____ %	0.0%

* 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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm
<u>Measures of size</u>		
Acres in crops		226.2
Acres in fruit		226.2
Total bearing acres		168.1
Man equivalents		14.5
Bushels of apples produced		62,198
Bushels of other fruit produced		1,335
Total bushels of fruit sold		63,533
Fruit receipts		428,424
<u>Production efficiency</u>		
Bushels of apples per bearing acre		389
Bushels of peaches per bearing acre		124
Bushels of pears per bearing acre		192
Bushels of plums & prunes per bearing acre		148
<u>Labor efficiency</u>		
Acres in fruit/man equivalent		15.6
Fruit receipts/man equivalent		29,546
Bushels of apples produced per man equivalent		4,290
<u>Capital efficiency</u>		
Capital turnover		2.7 yrs.
Total investment per acre of bearing fruit		6,052
Total investment/man equivalent		70,161
Total investment/crop acre		4,497
Land and buildings/crop acre		2,717
Land and buildings/acre owned		2,432

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	\$ _____	\$22,116	29.4
Interest @ 9% on average inventory	_____	17,643	23.5
Machine hire	_____	7,108	9.4
Machine repairs and auto	_____	13,151	17.5
Gasoline and oil	_____	15,207	20.2
TOTAL MACHINERY COSTS	\$ _____	\$75,225	100.0
Machinery cost:			
Per crop acre	\$ _____	\$333	
Per acre of bearing fruit	\$ _____	448	
Per dollar of fruit sold	\$ _____	.18	
Per bushel of fruit sold	\$ _____	1.18	

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
Fourteen Eastern New York Fruit Farms, 1980

Item	My Farm	Average per Farm
Value of operator's labor*		\$ 17,100
Hired labor		133,039
Unpaid family labor		2,356
TOTAL LABOR COSTS		\$152,495
Total machinery cost		75,225
TOTAL LABOR & MACHINERY COSTS		\$227,720

Labor cost:		
Per crop acre		\$ 674
Per acre of bearing fruit		907
Per dollar of fruit sold		.36
Per bushel of fruit sold		2.40
Labor and machinery costs:		
Per crop acre		\$1,007
Per acre of bearing fruit		1,355
Per dollar of fruit sold		.53
Per bushel of fruit sold		3.58

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

Miscellaneous Cost Control Measures

MISCELLANEOUS COST MEASURES
Fourteen Eastern New York Fruit Farms, 1980

Item	Average of 14 Eastern New York Fruit Farms, 1980	Average of 10 Lake Ontario New York Fruit Farms, 1979
Spray materials per fruit acre	\$109	\$102
Taxes per crop acre owned	43	25
Taxes per \$1,000 of end real estate inventory	16	21
Taxes and insurance per \$1,000 real estate inventory	41	38