

FRUIT FARM BUSINESS SUMMARY

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LAKE ONTARIO REGION NEW YORK 1994

Gerald B. White
Alison DeMarree
Linda D. Putnam

Department of Agricultural, Resource, and Managerial Economics
College of Agriculture and Life Sciences
Cornell University, Ithaca, New York 14853-7801

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ABSTRACT

This report is a summary of 1994 farm business data collected from 20 fruit farm businesses located in Western New York State. Apples are the predominant fruit crop. The data are presented as averages for all 20 farms. The business analysis includes a balance sheet, income statement, cash flow statement, and several financial and production analyses for the farms. Also included are blank columns for the user to enter his or her own farm data for comparison purposes.

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1994 FRUIT FARM BUSINESS SUMMARY LAKE ONTARIO REGION

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1994 LAKE ONTARIO FRUIT FARM BUSINESS SUMMARY

INTRODUCTION

Western New York fruit farmers, whose major crop is apples, are invited to participate in Cornell Cooperative Extension's fruit farm business summary program each year. Each participating farmer receives a comprehensive business summary and analysis of his or her farm business. This report presents averages for the data submitted by participating farmers for 1994.

The primary objective of the fruit farm business summary (FFBS) program is to help farm managers improve the financial management of their business through appropriate use of historical farm data and the application of modern farm business analysis techniques. The FFBS identifies the business and financial information farmers need and provides a framework for use in identifying and evaluating the strengths and weaknesses of the farm business.

A computer program is used to process the data collected from fruit farmers. This program enables an analysis to be produced on the farm as soon as the farmers' data are entered. This provides rapid processing of the information for timely use in the management of the farm business.

The farms in this study are primarily apple farms. An average of 81 percent of the receipts in 1994 was from the sale of apples. The data were not obtained from a random sample of all fruit farms in Western New York. Therefore, the analysis should not be used to represent the Western New York fruit industry.

Format Features

This report provides a set of tables which comprise a comprehensive analysis of the participating fruit farms. Worksheets are included to give fruit farmers an opportunity to summarize their business. The analysis tables have a blank column or section labeled "My Farm". It may be used to compare an individual farm business with the average performance of the 20 farms.

This report features:

- 1) A complete Balance Sheet and analysis including financial ratios.
- 2) An Income Statement including accrual accounting adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation.
- 3) Forms for a Cash Flow Statement and Repayment Analysis Worksheets.
- 4) Analyses of Capital Efficiency, Equipment, and Labor.
- 5) A Cropping Program Analysis with Cost Control Factors.
- 6) A Three Year Comparison of selected business factors.

Apple Production and Prices in Recent Years

Apple production for the State was 26.2 million bushels in 1994. Western New York growers produced 17.9 million bushels or about 68 percent of the total State crop. Statewide, production was up 27 percent and in Western New York it was up about 37 percent compared to 1993.

Thirty-one percent of the 1994 apple crop produced in Western New York was sold fresh. This was up from 29 percent of the crop for 1993. The 1994 fresh crop was 5.5 million bushels - up 45 percent from 1993. Processing apple production in Western New York increased 33 percent from 1993 to 12.4 million bushels for 1994. Sixty-nine percent of the Western New York crop was processing apples.

Western New York processing apple prices averaged \$3.00 per bushel or 7.1 cents per pound in 1994, 1 percent above 1993, while fresh apple prices averaged \$12.87, down 2 percent from 1993.

Statewide, fresh apple prices received by growers averaged \$7.56 per bushel net freight-on-board (F.O.B.), \$0.25 per bushel higher than the average 1993 price. Processing apples, produced mostly in Western counties, averaged \$2.84 per bushel or 6.8¢ per pound for 1994.

Table 1. Apple Production and Prices, New York State, 1990-1994

Item	1990	1991	1992	1993	1994
Production ----- million bushels -----					
Fresh Apples					
Western New York	5.5	4.3	5.0	3.8	5.5
New York State	12.4	10.0	12.4	9.5	11.7
Processing Apples					
Western New York	9.8	12.9	13.1	9.3	12.4
New York State	11.2	15.0	15.5	11.2	14.5
All Varieties					
Western New York	15.2	17.1	18.1	13.1	17.9
New York State	23.6	25.0	27.9	20.7	26.2
Average Price Received ----- dollars -----					
Per Bushel					
Fresh Apples					
Western New York					
F.O.B. less pkg.,					
stg., etc.	8.65	8.61	6.68	8.11	N.A.
Bulk price	4.83	4.90	4.70	4.80	N.A.
Fruit Farm Business Sum.	5.50	6.07	4.59	4.94	5.05
New York State					
F.O.B. less pkg.,					
stg., etc.	7.48	8.44	5.96	7.31	7.56
Bulk price	4.83	4.90	4.70	4.80	N.A.
Processing Apples					
Western New York	3.25	3.27	2.79	2.97	3.00
Fruit Farm Business Sum.	3.34	3.01	2.88	3.14	2.81
New York State	3.15	3.21	2.71	2.79	2.84

Source: New York Agricultural Statistics Service, FRUIT series, Seasonal releases for July 1991, 1992, 1993, 1994, and 1995 and the annual Fruit Farm Business Summaries.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Finding the right management strategies is an important part of operating a successful farm business. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the fruit farmers in Western New York. The following table shows important farm business characteristics and the number of farmers reporting these characteristics.

Table 2. Business Characteristics, 20 Western New York Fruit Farms, 1994

<u>Type of Business</u>	<u>Number</u>	<u>Business Record System</u>	<u>Number</u>
Proprietors	6	Account Book	5
Partnerships	7	Agrifax (mail-in)	0
Corporations	7	On-Farm Computer	15
		Other	0

<u>Business Composition</u>	<u>Number</u>
Fruit production only	7
Fruit with storage	4
Fruit & other enterprises	5
Fruit with storage & other enterprises	4

Farm Financial Status

The first step in evaluating the financial status of the farm business is to construct a balance sheet which identifies all the assets and liabilities of the business. The second step is to evaluate the relationships between assets, liabilities, and net worth at the end of the year and the changes that occurred during the year.

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business.

Table 3 presents the balance sheet data for the 20 fruit farm cooperators. It lists the average value of assets and liabilities for December 31, 1993 and December 31, 1994 and, therefore, shows the changes that occurred for each category during the year. Asset values that are estimated each year should reflect changes in quantity or quality of the asset and conservative adjustments for price changes. Careful attention to asset values is important for a meaningful calculation of change in net worth, a measure of financial progress.

Table 4 provides a format for the reader to use to develop a balance sheet for an individual farm business.

Table 3. Farm Business Balance Sheet, 20 Western New York Fruit Farms, December 31, 1993 & 1994

Farm Assets			Farm Liabilities & Net Worth		
	1993	1994		1993	1994
<u>Current</u>	\$	\$	<u>Current</u> =<1 year	\$	\$
Cash, checking, sav.	12,731	16,499	Accounts payable	27,696	33,093
Accounts receivable	78,661	99,309	Operating debt	109,113	112,959
Prepaid expenses	6,028	5,221	Short-term	7,960	1,871
Fruit, other crops	73,094	79,213	Advanced gov't receipts	0	0
Production supplies	8,713	7,309	Accrued interest	<u>375</u>	<u>926</u>
Packing supplies	<u>1,086</u>	<u>952</u>			
Total Current	180,314	208,504	Total Current	145,144	148,849
<u>Intermediate</u>			<u>Intermediate</u> =>1 to <10 years		
Livestock	0	0	Structured debt	53,453	71,449
Livestock leased	0	0	Financial lease-livestock		
Equipment owned	187,861	191,562	& equipment	4,940	3,040
Equipment leased	4,940	3,040	Farm Credit stock	<u>7,574</u>	<u>9,011</u>
Farm Credit stock	7,574	9,011			
Other stock, cert.	<u>45,337</u>	<u>50,289</u>			
Total Intermediate	245,713	253,903	Total Intermediate	65,967	83,500
<u>Long-Term</u>			<u>Long-Term</u> =>10 years		
Land/Buildings:			Structured debt	132,277	134,701
Owned	407,115	417,187	Financial lease -		
Structures leased	<u>0</u>	<u>0</u>	structures	<u>0</u>	<u>0</u>
Total Long-Term	407,115	417,187	Total Long-Term	132,277	134,701
Total Farm:			Total Farm:		
Assets	833,142	879,594	Liabilities	343,388	367,050
			Net Worth	489,754	512,544
			Liabilities & Net Worth	833,142	879,594

Table 3a. Nonfarm Assets & Liabilities

NonFarm Assets			NonFarm Liabilities		
	1993	1994		1993	1994
Cash, checking, sav.	1,389	1,680		35	12
Life ins.-cash value	5,219	4,758			
Real estate	0	0			
Auto (pers. share)	250	250			
Stocks & bonds	1,983	2,441			
Household furn.	325	1,075			
All other	<u>3,519</u>	<u>4,200</u>			
Total NonFarm			Total Nonfarm: Liab.	35	12
Assets	12,684	14,404	Net Worth	<u>12,649</u>	<u>14,392</u>
			Liabilities & Net Worth	12,684	14,404
			Farm and Nonfarm		
Assets	845,826	893,998	Liabilities	343,422	367,062
			Net Worth	<u>502,404</u>	<u>526,936</u>
			Liabilities & Net Worth	845,826	893,998

Table 4. Farm Business Balance Sheet, My Farm, December 31, 1993 & 1994

Farm Assets	1993	1994	Farm Liabilities & Net Worth	1993	1994
Current	\$	\$	Current = < 1 year	\$	\$
Cash, checking, sav.	_____	_____	Accounts payable	_____	_____
Accounts receivable	_____	_____	Operating debt	_____	_____
Prepaid expenses	_____	_____	Short-term	_____	_____
Fruit, other crops	_____	_____		_____	_____
Production supplies	_____	_____		_____	_____
Packing supplies	_____	_____	Advanced gov't receipts	_____	_____
			Accrual interest	_____	_____
Total Current			Total Current	_____	_____
 Intermediate			 Intermediate = > 1 to < 10 years		
Livestock	_____	_____	Structured debt	_____	_____
Livestock leased	_____	_____		_____	_____
Equipment owned	_____	_____		_____	_____
Equipment leased	_____	_____		_____	_____
Farm Credit stock	_____	_____		_____	_____
Other stock, cert.	_____	_____	Financial lease-livestock, equipment	_____	_____
			Farm Credit stock	_____	_____
Total Intermediate	_____	_____	Total Intermediate	_____	_____
 Long-Term			 Long-Term = > 10 years		
Land/Buildings:			Structured debt	_____	_____
Owned	_____	_____		_____	_____
Structures leased	_____	_____		_____	_____
			Financial lease-struc.	_____	_____
Total Long-Term	_____	_____	Total Long-Term	_____	_____
			Total Farm:		
			Liabilities	_____	_____
			Net Worth	_____	_____
Total Farm Assets	_____	_____	Liabilities & Net Worth	_____	_____

The balance sheet analysis involves an examination of financial and debt ratios. Percent equity is calculated by dividing end of year net worth by end of year assets. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect strength in solvency and the potential capacity to borrow. Debt levels per unit of production include some old standards that are still useful if used with measures of cash flow and repayment ability. The change in farm net worth without appreciation is an excellent indicator of financial progress from operating the business.

Table 5. Farm Business Balance Sheet Analysis, 20 Western New York Fruit Farms, December 31, 1994

Item	20 Farms 1994	My Farm
----- For the Farm Business Only -----		
<u>Financial Ratios</u> - end of year		
Percent equity	58%	_____ %
Debt to asset ratios:		
Total debt	0.42	_____
Long-term	0.32	_____
Current & intermediate	0.50	_____
<u>Change in Net Worth</u>		
Without appreciation	\$ (1,350)	\$ _____
With Appreciation	\$ 22,789	\$ _____
<u>Debt Analysis</u> - end of year		
Percent of total farm debt that is:		_____ %
Long-term	37%	_____ %
Current & intermediate	63%	_____ %
Accounts payable only	9%	_____ %
<u>Debt Levels</u> - end of year		
Per bearing fruit acre:		
Total farm debt	\$ 1,723	\$ _____
Long-term	\$ 632	\$ _____
Current & intermediate	\$ 1,091	\$ _____

The farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

Table 6. Farm Inventory Balance, 20 Western New York Fruit Farms, 1994

Inventory Balance	20 Fruit Farm		My Farm	
	Real Estate	Equipment	Real Estate	Equipment
Beginning of year (1)	\$ 407,115	\$ 187,861	\$ _____	\$ _____
Purchases	\$ 12,755 ¹	\$ 18,477	_____	_____
+ Noncash transfer to farm	0	0	_____	_____
- Lost capital	894	--	_____	_____
- Sales	1,500	1,077	_____	_____
- Depreciation	11,786	22,502	_____	_____
= Net investment (2)	\$ (1,425)	\$ (5,102)	_____	_____
Appreciation (3-1-2)	11,496 ²	8,803	_____	_____
End of year (3)	\$ 417,187	\$ 191,562	_____	_____

¹Purchase includes \$8,885 for land and \$3,870 for buildings.

²Real estate appreciation excludes \$1 of appreciation on assets sold during the year.

Income Statement

On the following pages the accrual adjusted income statement begins with an accounting of all farm business expenses.

Cash Paid is the actual amount of money paid out during the year and does not necessarily represent the cost of goods and services actually used.

Change in Inventory: An increase in inventory is subtracted in computing accrual expenses; it represents inputs that were purchased but not actually used during the year. A decrease in inventory is added to expenses because it represents the cost of inputs purchased in a prior year and used this year.

Changes in Prepaid Expenses apply to non-inventory categories. Included are expenses that have been paid in advance of their use, for example, next year's rent paid this year. An increase in a prepaid expense is an amount paid this year that is an expense for a future year and, thus, is subtracted from expenses; a decrease in a prepaid expense indicates an amount paid in a prior year that is an expense for this year and added to cash expenses.

Change in Accounts Payable: An increase in payables is an expense chargeable to this year but not paid by the end of the year. A decrease in payables is an expense for a previous year that was paid this year.

Accrual Expenses are the costs of inputs actually used for this year's production.

The worksheet on page 9 is provided to enable any fruit farmer to compare his or her expenses with the group averages in the corresponding table.

Table 7. Income Statement - Farm Expenses, 20 Western New York Fruit Farms, 1994

Expenses	Cash amount paid +	Change in inventory or prepaid expenses +	Change in accounts payable =	Accrual expenses
Hired Labor				
Wages: regular	\$ 48,423	\$ 0	\$ (32)	\$ 48,391
picking	73,099	0	0	73,099
other part-time, seasonal	24,296	0	0	24,296
Other labor costs	35,595	(260)	6	35,340
Picker travel	835	0	0	835
Labor camp expenses	2,766	0	(35)	2,732
Equipment				
Machine hire, rent, lease	10,604	(234)	2,319	12,689
Repairs & parts	20,492	5	14	20,511
Auto expense - farm share	177	0	0	177
Fuel, oil & grease	11,128	78	(23)	11,183
Livestock				
All livestock expenses	0	0	0	0
Crops				
Fertilizer & lime	10,431	138	988	11,557
Replacement trees & plants	1,546	0	0	1,546
Spray	48,518	1,100	8,590	58,208
Supplies, other prod. expense	9,452	33	271	9,756
Processing & packing supplies	887	134	20	1,041
Storage	11,189	(576)	(350)	10,263
Marketing, selling expenses	992	0	187	1,178
Real Estate				
Repair - land, bldg., fences	2,334	0	192	2,527
Taxes	9,511	0	(499)	9,012
Rent & lease	9,268	0	1,704	10,972
Other Expenses				
Insurance:				
fire, liability	7,662	0	(470)	7,191
crop	183	0	0	183
Telephone - farm share	1,383	0	(1)	1,382
Electricity - farm share	4,069	0	604	4,672
Fruit purchased for resale	3,380	0	(918)	2,462
Interest paid	24,636	0	2,354	26,990
Miscellaneous	10,026	50	(459)	9,616
TOTAL OPERATING EXP.	\$382,880	\$468	\$14,460	\$397,808
Expansion orchard	10,930	(1,147)	0	9,783
Depreciation:				
equipment				22,502
buildings				5,588
bearing trees & vines				6,198
TOTAL ACCRUAL EXPENSES				\$441,879

Table 8. Income Statement, Farm Expenses, My Farm, 1994

Expenses	Cash amount paid +	Change in inventory or prepaid expenses +	Change in accounts payable =	Accrual expenses
<u>Hired Labor</u>				
Wages: regular	\$ _____	\$ _____	\$ _____	\$ _____
picking	_____	_____	_____	_____
other part-time,	_____	_____	_____	_____
seasonal	_____	_____	_____	_____
Other labor costs	_____	_____	_____	_____
Picker travel	_____	_____	_____	_____
Labor camp expenses	_____	_____	_____	_____
<u>Equipment</u>				
Machine hire, rent, lease	_____	_____	_____	_____
Repairs & parts	_____	_____	_____	_____
Auto expense - farm share	_____	_____	_____	_____
Fuel, oil & grease	_____	_____	_____	_____
<u>Livestock</u>				
All livestock expenses	_____	_____	_____	_____
<u>Crops</u>				
Fertilizer & lime	_____	_____	_____	_____
Replacement trees & plants	_____	_____	_____	_____
Spray	_____	_____	_____	_____
Supplies, other prod. expense	_____	_____	_____	_____
Processing & packing supplies	_____	_____	_____	_____
Storage	_____	_____	_____	_____
Marketing, selling expenses	_____	_____	_____	_____
<u>Real Estate</u>				
Repair - land, bldg., fences	_____	_____	_____	_____
Taxes	_____	_____	_____	_____
Rent & lease	_____	_____	_____	_____
<u>Other Expenses</u>				
Insurance:				
fire, liability	_____	_____	_____	_____
crop	_____	_____	_____	_____
Telephone - farm share	_____	_____	_____	_____
Electricity - farm share	_____	_____	_____	_____
Fruit purchased for resale	_____	_____	_____	_____
Interest paid	_____	_____	_____	_____
Miscellaneous	_____	_____	_____	_____
TOTAL OPERATING EXP.	\$ _____	\$ _____	\$ _____	\$ _____
Expansion orchard	_____	_____	_____	_____
Depreciation:				
equipment				_____
buildings				_____
bearing trees & vines				_____
TOTAL ACCRUAL EXPENSES				\$ _____

Table 9. Income Statement, Farm Receipts, 20 Western New York Fruit Farms, 1994

Receipts	Cash Receipts	+ Change in inventory ¹	+ Change in accounts receivable	= Accrual receipts
Apples: fresh	\$ 195,697	\$ 9,112	\$ 6,773	\$ 211,581
processing	168,499	(2,838)	13,646	179,307
Cherries: sweet	9,777		0	9,777
tart	21,017		3,247	24,264
Grapes	423		(62)	361
Peaches	4,842		(220)	4,622
Pears	7,266		(43)	7,223
Plums & prunes	800		0	800
All other fruit	3,167	(155)	0	3,012
Other crops, livestock & prod.	707	0	74	782
Custom work, storage, rent	23,173		1,705	24,878
Other - including government receipts, refunds	14,144	0 ²	69	14,213
- Non-farm non-cash capital		0 ³		
TOTAL OPERATING RECEIPTS	\$ 449,512	\$ 6,119	\$ 25,190	\$ 480,820

¹Change in crop and livestock products inventory.

²Change in advanced government receipts.

³Gifts and inheritances of livestock and crops to the farm business.

Cash Receipts include the amount received during the year from the sale of farm products and services, and government programs.

Changes in Inventory are calculated by subtracting beginning of year values from end of year values excluding appreciation. Changes in crop and livestock inventories are calculated. Changes in advanced government receipts are calculated by subtracting the end of year balance from the beginning year balance.

Changes in Accounts Receivable are calculated by subtracting beginning year balances from end year balances.

Accrual Receipts represent the value of all farm commodities and services generated by the farm business during the year.

Table 10. Income Statement, Farm Receipts, My Farm, 1994

Receipts	Cash receipts +	Change in inventory +	Change in accounts receivable +	= Accrual receipts
Apples: fresh	\$ _____	\$ _____	\$ _____	\$ _____
processing	_____	_____	_____	_____
Cherries: sweet	_____	_____	_____	_____
tart	_____	_____	_____	_____
Grapes	_____	_____	_____	_____
Peaches	_____	_____	_____	_____
Pears	_____	_____	_____	_____
Plums & prunes	_____	_____	_____	_____
All other fruit	_____	_____	_____	_____
Other crops, livestock & prod.	_____	_____	_____	_____
Custom work, storage, rent	_____	_____	_____	_____
Other - including government receipts, refunds	_____	_____	_____	_____
- Non-farm non-cash capital		(-) _____		(-) _____
TOTAL OPER. RECEIPTS	\$ _____	\$ _____	\$ _____	\$ _____

Profitability Analysis

Farm owner-operators contribute labor, management, and capital to their businesses and the best combination of these resources maximizes profits. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

Net Farm Income is the total combined return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's annual net return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business operation. Cash flow is measured later in this report.

Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of livestock, equipment, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

Table 11. Net Farm Income, 20 Western New York Fruit Farms, 1994

Item	20 Farms 1994	My Farm
Total accrual receipts	\$480,820	\$ _____
+ Appreciation:		
Livestock	0	_____
Equipment	8,803	_____
Real estate	11,497	_____
Other - Stocks & certificates	+3,839	+ _____
= Total accrual receipts with appreciation	\$504,959	\$ _____
- Total accrual expenses	-441,879	- _____
= Net farm income with appreciation	\$ 63,080	\$ _____
Net farm income without appreciation	\$ 38,941	\$ _____

Return to Operators' Labor, Management, and Equity Capital measures the total business profits for the farm operator(s). It is calculated by deducting a charge for unpaid family labor from net farm income. Operators' labor is not included in unpaid family labor. Return to operators' labor, management, and equity capital has been calculated both with and without appreciation. Appreciation is considered an important part of the return to ownership of farm assets.

Table 12. Return to Operators' Labor, Management, and Equity Capital
20 Western New York Fruit Farms, 1994

Item	20 Farms 1994	My Farm
With appreciation:		
Net farm income	\$ 63,080	\$ _____
- Family unpaid labor @ \$1,450 per month	<u>-943</u>	- _____
= Return to operators' labor, management, & equity	\$ 62,137	\$ _____
Without appreciation:		
Net farm income	\$ 38,941	\$ _____
- Family unpaid labor @ \$1,450 per month	<u>-943</u>	- _____
= Return to operators' labor, management, & equity	\$ 37,998	\$ _____

Labor and Management Income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting the opportunity cost of using equity capital, at a real interest rate of five percent, from the return to operators' labor, management, and equity capital excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in an investment of comparable risk.

Table 13. Labor & Management Income, 20 Western New York Fruit Farms, 1994

Item	20 Farms 1994	My Farm
Without appreciation:		
Return to operators' labor, management, & equity	\$ 37,999	\$ _____
- Real interest @ 5% on average equity capital	<u>-25,057</u>	_____
= Labor & management income per farm	\$ 12,941	\$ _____
Labor & management income per operator	\$ 8,836	\$ _____

Return on Equity Capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operators' labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the co-operators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital.

Table 14. Return on Equity Capital and Return on Total Capital,
20 Western New York Fruit Farms, 1994

Item	20 Farms 1994	My Farm
Average equity capital	\$501,149	\$ _____
Average total capital	\$856,368	\$ _____
Returns with appreciation:		
Return to operators' labor, management & equity capital	\$ 62,138	\$ _____
- Value of operators' labor & management	<u>-47,921</u>	- _____
= Return on average equity capital	\$ 14,216	\$ _____
+ Interest paid	<u>+26,990</u>	+ _____
= Return on average total capital	\$ 41,206	\$ _____
Rates of return (with appreciation) on:		
Average equity capital	2.8%	_____ %
Average total capital	4.8%	_____ %
Returns without appreciation:		
Return on average equity capital with appreciation	\$ 14,216	\$ _____
- Total appreciation	<u>-24,139</u>	- _____
= Return on average equity capital	\$ (9,923)	\$ _____
+ Interest paid	<u>+26,990</u>	+ _____
= Return on average total capital	\$ 17,067	\$ _____
Rates of return (without appreciation) on:		
Average equity capital	-2.0%	_____ %
Average total capital	2.0%	_____ %

Cash Flow Statement

Completing an annual cash flow statement is an important step in understanding the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The **Annual Cash Flow Statement** is structured to compare all the cash inflows with all the cash outflows for the year. A complete list of cash inflows and cash outflows is included in Table 15. By definition, total cash inflows must equal total cash outflows when beginning and end balances are included. Any imbalance is, therefore, the error from incorrect accounting of cash inflows and cash outflows.

Table 15. Annual Cash Flow Statement, 20 Western New York Fruit Farms, 1994

Item	20 Farms 1994	My Farm
<u>Cash Inflows</u>		
Beginning farm cash, checking, & savings	\$ 12,731	\$ _____
Cash farm receipts	449,746	_____
Sale of assets:		
Equipment	1,077	_____
Real estate	1,442	_____
Other stocks & certificates	613	_____
Money borrowed:		
Increase in operating debt	3,845	_____
Short-term	199	_____
Intermediate	24,155	_____
Long-term	9,439	_____
Refinanced debt	0	_____
Non-farm:		
Income	1,036	_____
Capital used in business	1,396	_____
Money borrowed	0	_____
Total Cash Inflows	\$505,679	\$ _____
<u>Cash Outflows</u>		
Cash farm expenses (excluding interest paid)	\$358,244	\$ _____
Capital purchases:		
Expansion orchard	10,930	_____
Equipment	18,477	_____
Real estate	12,755	_____
Other stocks & certificates	1,726	_____
Debt payments:		
Principal payments for -		
Decrease in operating debt	0	_____
Short-term	6,288	_____
Intermediate	6,159	_____
Long-term	7,015	_____
Refinanced debt	0	_____
Interest paid	24,636	_____
Personal withdrawals & family expenditures including non-farm debt payments & corporate operator labor costs	43,042	_____
Ending farm cash, checking & savings	<u>16,499</u>	_____
Total Cash Outflows	\$505,769	\$ _____
Imbalance (error)	\$(90)	\$ _____

Repayment Analysis

The second step in cash flow analysis is to compare the debt payments planned for this year with the amount actually paid. The measures listed below provide a number of different perspectives on the repayment performance of the business.

Table 16. Farm Debt Payments Planned, 20 Western New York Fruit Farms, 1994

Debt Payments	20 Fruit Farms			My Farm		
	Planned for 1994 ¹	Actual Payments in 1994 ²	Planned for 1995	Planned for 1994	Actual payments 1994	Planned for 1995
Accts. payable (net reduction)	\$ 2,770	\$ 0	\$ 0	_____	\$ _____	\$ _____
Operating (net reduction)	7,784	0	7,484	_____	_____	_____
Short-term (principal & int.)	6,662	7,113	581	_____	_____	_____
Intermediate (principal & int.)	8,708	10,067	8,888	_____	_____	_____
Long-term (principal & int.)	<u>7,371</u>	<u>16,096</u>	<u>18,386</u>	_____	_____	_____
Total debt payments	\$33,294	\$33,275	\$35,340	\$ _____	\$ _____	\$ _____
Payments as a percent of:						
Total accrual receipts	7%	7%		_____ %	_____ %	
Total accrual fruit receipts	8%	8%				
Payments per acre of:						
bearing fruit	\$ 156	\$ 156		\$ _____	\$ _____	
all fruit	\$ 137	\$ 137		\$ _____	\$ _____	
Payments/bushel of apples sold	\$0.32	\$0.32		\$ _____	\$ _____	

¹If on the Fruit Farm Business Summary the previous year.

²Actual payments excluding refinanced debt.

The **Cash Flow Coverage Ratio** measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of planned payments that could have been made with this year's available cash flow. However, the critical question to many farmers and lenders is whether planned payments can be made in 1995. The worksheet provided in Table 18 can be used to estimate repayment ability which can then be compared to planned 1995 debt payments shown in Table 16.

Table 17. Cash Flow Coverage Ratio, 20 Western New York Fruit Farms, 1994

Item	20 Farms 1994	My Farm
Cash farm receipts	\$449,746	\$ _____
- Cash farm expenses	382,880	_____
+ Interest paid	24,636	_____
- Net personal withdrawals from farm ¹	42,006	_____
= Amount available for debt service (1)	\$49,496	\$ _____
Debt payments planned (2)	\$33,294	\$ _____
Cash Flow Coverage Ratio (1 ÷ 2)	1.49	_____

¹Personal withdrawals and family expenditures less non-farm income and non-farm money borrowed.

Table 18. Annual Cash Flow Worksheet, 1994 and 1995 Projection

Item	Average 20 Farms	My Farm, 1994		Expected change	1995 projection
		Total	Per bear- ing acre		
Average bearing acres of fruit	213	_____	_____	_____	_____
Accrual Operating Receipts (per bearing acre)					
Apples: Fresh	\$ 993	\$ _____	\$ _____	\$ _____	\$ _____
Processing	842	_____	_____	_____	_____
All other fruit	235	_____	_____	_____	_____
Other crops, livestock & products	4	_____	_____	_____	_____
Custom work, storage & rent	117	_____	_____	_____	_____
Other - including government receipts, refunds	67	_____	_____	_____	_____
Total Operating Receipts	\$2,257	\$ _____	\$ _____	\$ _____	\$ _____
Accrual Operating Expenses (per bearing acre)					
Labor: Wages --					
regular	\$ 227	_____	_____	_____	_____
picking	343	_____	_____	_____	_____
other part-time, seasonal	114	_____	_____	_____	_____
Other labor costs	166	_____	_____	_____	_____
Picker travel, labor camp exp.	17	_____	_____	_____	_____
Equip: Machine hire, rent, lease	60	_____	_____	_____	_____
Repairs, parts & auto exp.	97	_____	_____	_____	_____
Fuel, oil & grease	52	_____	_____	_____	_____
Livestock: All livestock expense	0	_____	_____	_____	_____
Crops: Fertilizer & lime	54	_____	_____	_____	_____
Replacement trees & plants	7	_____	_____	_____	_____
Spray	273	_____	_____	_____	_____
Supplies, other prod. exp.	46	_____	_____	_____	_____
Storage	48	_____	_____	_____	_____
Packing supplies, marketing, selling exp.	10	_____	_____	_____	_____
Real Est.: Repair - land, bldg., fences	12	_____	_____	_____	_____
Taxes	42	_____	_____	_____	_____
Rent & lease	51	_____	_____	_____	_____
Other: Insurance - fire, liab., crop	35	_____	_____	_____	_____
Utilities - phone, elec.	28	_____	_____	_____	_____
Resale items - fruit, etc.	12	_____	_____	_____	_____
Miscellaneous	45	_____	_____	_____	_____
Total Operating Expenses					
Excluding Interest	\$1,741	\$ _____	\$ _____	\$ _____	\$ _____
Repayment Analysis (Total)					
Net accrual operating income excluding interest	\$110,002	\$ _____			\$ _____
- Change in livestock & crop inv.	6,119	_____			_____
- Change in accounts receivable	25,190	_____			_____
+ Change in crop & supply inv.	468	_____			_____
+ Change in accounts payable excluding interest	12,105	_____			_____
Net Operating Cash Flow	\$91,268	\$ _____			\$ _____
- Net personal withdrawals	42,006	_____			_____
Available for debt pymnts, invest.	\$49,262	\$ _____			\$ _____
- Farm debt payments: principal & interest	33,275	_____			_____
Available for farm investment	\$15,987	\$ _____			\$ _____
Capital purchases	\$43,888	\$ _____			\$ _____
Additional capital needed	\$27,901	\$ _____			\$ _____

Capital Efficiency Analysis

Capital efficiency factors measure how intensively capital is being used in the farm business. As capital needs grow, capital management becomes more important.

Capital turnover is a measure of capital efficiency as it shows the number of years of farm receipts required to equal or "turnover" the capital investment. It is computed by dividing the average farm asset value by the year's total farm accrual receipts and appreciation.

Table 19. Capital Efficiency Analysis, 20 Western New York Fruit Farms, 1994

Item	Per worker equivalent	Average Capital Investment		
		Per Bearing Acre:		Per all fruit acres
		Owned	Operated	
Assets				
Total farm capital	\$80,475	\$5,802	\$4,020	\$3,528
Real estate	38,731	2,792	n/a	1,698
All equipment	8,970	n/a	448	393
Capital turnover, years	1.70			
My Farm:				
Total farm capital	\$ _____	\$ _____	\$ _____	\$ _____
Real estate	_____	_____	_____	_____
All equipment	_____	_____	_____	_____
Capital turnover, years	_____			

Equipment Analysis

Equipment costs comprise nearly 20 percent of the cost of fruit production. Total equipment expenses include the major fixed costs (interest and depreciation) as well as the accrual operating costs.

Table 20. Accrual Equipment Expenses, 20 Western New York Fruit Farms, 1994

Item	Average 20 Fruit Farms			My Farm		
	Total equip. cost	Equipment cost per fruit acre operated: Bearing	All fruit	Total equip. cost	Equipment cost per fruit acre operated: Bearing	All fruit
Machine hire, equip. rent, lease	\$12,689	\$ 60	\$ 52	\$ _____	\$ _____	\$ _____
Repair & parts	20,511	96	85	_____	_____	_____
Auto exp. - farm share	177	1	1	_____	_____	_____
Fuel, oil & grease	11,183	52	46	_____	_____	_____
Interest - avg. cap. @5%	9,486	45	39	_____	_____	_____
Depreciation	<u>22,502</u>	<u>106</u>	<u>93</u>	_____	_____	_____
Total Equipment Cost	\$76,547	\$359	\$315	\$ _____	\$ _____	\$ _____

Labor Analysis

The efficient use of labor is closely related to farm profitability. Measures of labor efficiency or productivity are key indicators of management's success.

Table 21. Labor Force Inventory and Analysis, 20 Western New York Fruit Farms, 1994

Labor Force	Full-time months	Age, years	Years of Education	Value of labor/mgmt.
Average:				
Operator -				
number 1	9.0	45	15	\$24,707
number 2	4.6	44	14	12,592
number 3	3.1	39	14	7,972
number 4	1.0	40	16	2,650
Family unpaid	0.7			Total \$47,921
Family paid	6.0			Avg./oper. \$32,823
Hired -				
regular	25.7			
picking	58.2			
other part-time, seasonal	19.6			
Total	127.7	mo./12 =	10.64 worker equivalent	1.46 oper./manager equiv.

My Farm:

Total _____ mo./12 = _____ worker equivalent
 Operators _____ mo./12 = _____ oper./manager equiv.

Labor Efficiency	Average		My Farm	
	Total	Per Worker	Total	Per worker
Bearing fruit, acres	213.1	20.0	_____	_____
Total fruit, acres	242.7	22.8	_____	_____
Apples sold, bushels	106,355	9,994	_____	_____
Accrual receipts	\$480,820	\$45,184	\$ _____	\$ _____
Accrual fruit receipts	\$440,948	\$41,437	\$ _____	\$ _____

Labor Cost or Value

Type	Annual Accrual Cost					
	Average 20 Farms			My Farm		
	Total	Per worker equiv.	Per bearing acre	Total	Per worker equiv.	Per bearing acre
Value of operator(s) labor @ \$1,450/mo.	\$ 25,484	\$ 2,395	\$ 120	\$ _____	\$ _____	\$ _____
Family unpaid @ \$1,450/mo.	943	89	4	_____	_____	_____
Family paid (excl. operator)	13,354	1,255	63	_____	_____	_____
Hired -						
regular (excluding operator)	48,947	4,600	230	_____	_____	_____
picking	92,465	8,690	434	_____	_____	_____
other part-time, seasonal	30,194	2,838	142	_____	_____	_____
All labor (incl. non-cash)	\$211,386	\$19,867	\$ 992	\$ _____	\$ _____	\$ _____
All equipment cost	76,547	7,194	359	_____	_____	_____
Total labor & equip. cost	\$287,933	\$27,061	\$1,351	\$ _____	\$ _____	\$ _____

Cropping Program Analysis

The cropping program is the central part of a fruit farm business. A complete evaluation of available land resources, how they are being used, how well crops are producing, and what it costs to produce them, is required to evaluate alternative cropping choices. In the table below, average crop acres and yields are presented for the number of farms reporting each crop.

Table 22. Land Resources and Crop Production, 20 Western New York Fruit Farms, 1994

Item	Average 20 Farms			My Farm		
	Owned	Rented	Total	Owned	Rented	Total
Land Class (end of year)						
Bearing fruit, acres	147.6	65.4	213.1	_____	_____	_____
Non-bearing fruit, acres	25.6	4.0	29.7	_____	_____	_____
Other crops, open, acres	29.9	5.6	35.5	_____	_____	_____
Non-tillable pasture, acres	4.2	0.0	4.2	_____	_____	_____
Other non-tillable, acres	32.0	9.3	41.3	_____	_____	_____
Total land operated	239.4	84.3	323.7	_____	_____	_____
Crop Production						
	For farms having the fruit:			Total acres	Yield per acre	
	No. of farms	Average acres	Yield per acre			
Bearing Fruit:						
Apples -						
fresh	20	88.7	450 bu.	_____	_____	bu.
processing	20	89.8	710 bu.	_____	_____	bu.
all apples	20	178.5	581 bu.	_____	_____	bu.
Cherries						
sweet	6	9.9	5,399 lb.	_____	_____	lb.
tart	10	40.3	8,041 lb.	_____	_____	lb.
Grapes	1	7.8	7.6 tn.	_____	_____	tn.
Peaches	8	9.4	79 bu.	_____	_____	bu.
Pears	10	10.2	279 bu.	_____	_____	bu.
Plums, prunes	5	3.7	404 bu.	_____	_____	bu.
Other fruit	3	8.4		_____	_____	
Total bearing fruit	20	213.1		_____		
Non-Bearing Fruit:						
Apples						
fresh	17	25.8		_____		
processing	2	47.0		_____		
Cherries						
sweet	3	7.5		_____		
tart	2	10.6		_____		
Other non-bearing	6	2.9		_____		
Total non-bearing fruit acres	19	31.2		_____		
Other Crops, Open:						
Other	17	41.7		_____		

Cost Control Factors

The control of costs is an important factor in the success of modern commercial fruit farm businesses. But before they can be controlled, they must be known. A major reason for farm business analysis is to identify the most significant cost items so cost control decisions can be encouraged as warranted. However, the optimum level of input items used to obtain the greatest net return is difficult to determine.

Farm managers have substituted power and equipment for labor to a large degree. With labor and equipment costs in excess of 50 percent of total production costs on fruit farms, it is important to know and control these and other costs on a production unit basis.

Table 23. Cost Control Factors, 20 Western New York Fruit Farms, 1994

Item	Cost Per Fruit Acre Operated	
	Bearing acres	All fruit acres
All labor - including operators' labor	\$992	\$871
Picking labor	434	381
Other hired labor	434	381
All equipment cost	359	315
Spray	273	240

PROGRESS OF THE FARM BUSINESS

Comparing your business with average data from other fruit farms can be a helpful part of a business checkup. While a wide variation in business size and composition exists in this group of fruit farms, many of the factors will provide a meaningful indication of how you compare with other fruit farms. It is, perhaps, even more important for you to determine the progress your business has made over the past two or three years and to set goals for the future.

The tables on the following pages provide the opportunity for you to compare your business factors with averages for the participating farms for the past three years. It also encourages you to set some goals toward which to strive as you measure the progress of your farm business over the years.

Table 24. Progress of the Fruit Farm Business, Western New York Fruit Farms, 1992-1994

Selected Factors	1992	1993	1994
Number of farms	22	20	20
Size of Business			
All cropland including fruit, acres	290	295	278
All fruit including non-bearing, acres	259	270	243
Bearing fruit, acres	233	237	213
Bearing apples, acres	189	195	179
Fresh - percent of all apple acres	47%	50%	50%
Apples produced, bushels	121,305	89,046	103,644
Apples sold, bushels	114,655	94,019	106,355
Worker equivalent	11.21	10.62	10.64
Total accrual operating receipts	\$449,521	\$435,358	\$480,820
Rates of Production			
All apples, bushels per bearing acre	640	456	581
Fresh - percent of apples harvested	37%	41%	39%
Cherries - tart, pounds per bearing acre	7,330	4,340	8,041
Pears, bushels per bearing acre	279	221	279
Non-bearing to bearing acre ratio	11%	14%	14%
Labor Efficiency			
Bearing fruit, acres per worker	21	22	20
All fruit, acres per worker	23	25	23
Accrual receipts per worker	\$44,580	\$40,988	\$45,184
Cost Control - Accrual			
Cost per bearing acre:			
All labor	\$991	\$875	\$992
All equipment	\$368	\$354	\$359
Spray	\$287	\$253	\$273
Hired labor as percent of operating expenses	45%	42%	46%
Capital Efficiency - Average for the Year			
Total farm capital per bearing acre	\$4,180	\$3,884	\$4,020
Total farm capital per fruit acre	\$3,768	\$3,406	\$3,528
Capital turnover, years	1.9	2.0	1.7
Profitability			
Net farm income:			
Without appreciation	\$12,618	\$(41,595)	\$38,941
With appreciation	\$18,134	\$(26,753)	\$63,080
Labor & management income per operator	\$(12,400)	\$(39,067)	\$8,836
Rate of return to average capital with appreciation:			
Equity capital	-5.6%	-13.8%	2.8%
Total capital	-2.5%	-7.2%	4.8%
Financial Summary - End of Year			
Farm:			
Net worth	\$656,692	\$574,704	\$512,543
Debt to asset ratio	0.31	0.37	0.42
Debt per bearing acre	\$1,290	\$1,426	\$1,723
Cash flow coverage ratio	0.92	0.18	1.49

Table 25. Progress of the Fruit Farm Business, Same Summary Farms,
Western New York, 1992-1994

Selected Factors	Average per Farm Same 17 Farms in:		
	1992	1993	1994
Size of Business			
All cropland including fruit, acres	276	286	295
All fruit including non-bearing, acres	250	259	258
Bearing fruit, acres	226	229	225
Bearing apples, acres	183	186	187
Fresh - percent of all apple acres	47%	48%	48%
Apples produced, bushels	117,924	83,058	108,445
Apples sold, bushels	110,388	91,274	111,623
Worker equivalent	11.27	10.55	11.03
Total accrual operating receipts	\$496,743	\$417,363	\$499,186
Rates of Production			
All apples, bushels per bearing acre	643	445	579
Fresh - percent of apples harvested	36%	40%	36%
Cherries - tart, pounds per bearing acre	5,877	4,324	7,730
Pears, bushels per bearing acre	260	219	279
Non-bearing to bearing acre ratio	11%	13%	15%
Labor Efficiency			
Bearing fruit, acres per worker	20	22	20
All fruit, acres per worker	22	25	23
Accrual receipts per worker	\$44,076	\$39,545	\$45,238
Cost Control - Accrual			
Cost per bearing acre:			
All labor	\$992	\$839	\$962
All equipment	\$350	\$340	\$360
Spray	\$278	\$239	\$265
Hired labor as percent of operating expenses	46%	42%	46%
Capital Efficiency - Average for the Year			
Total farm capital per bearing acre	\$4,101	\$3,867	\$3,896
Total farm capital per fruit acre	\$3,706	\$3,416	\$3,400
Capital turnover, years	1.8	2.1	1.7
Profitability			
Net farm income:			
Without appreciation	\$31,129	\$(27,912)	\$37,318
With appreciation	\$38,690	\$(17,823)	\$61,482
Labor & management income per operator	\$ (556)	\$(30,371)	\$7,804
Rate of return to average capital with appreciation:			
Equity capital	-3.5%	-14.0%	2.4%
Total capital	-0.5%	-6.5%	4.6%
Financial Summary - End of Year			
Farm:			
Net worth	\$596,873	\$522,930	\$520,516
Debt to asset ratio	0.35	0.41	0.42
Debt per bearing acre	\$1,406	\$1,557	\$1,695
Cash flow coverage ratio	1.15	0.25	1.52

Table 26. Progress of the Fruit Farm Business, My Farm, 1992-1994

Selected Factors	1992	1993	1994	Goal
Size of Business				
All cropland incl. fruit, acres	_____	_____	_____	_____
All fruit incl. non-bearing, acres	_____	_____	_____	_____
Bearing fruit, acres	_____	_____	_____	_____
Bearing apples, acres	_____	_____	_____	_____
Fresh - % of all apple acres	_____ %	_____ %	_____ %	_____ %
Apples produced, bushels	_____	_____	_____	_____
Apples sold, bushels	_____	_____	_____	_____
Worker equivalents	_____	_____	_____	_____
Total accrual oper. receipts	\$ _____	\$ _____	\$ _____	\$ _____
Rates of Production				
All apples, bushels/bearing acre	_____ %	_____ %	_____ %	_____ %
Fresh - % of apples harvested	_____ %	_____ %	_____ %	_____ %
Cherries - tart, lbs./bearing acre	_____	_____	_____	_____
Pears, bushels/bearing acre	_____	_____	_____	_____
Non-bearing to bearing acre ratio	_____ %	_____ %	_____ %	_____ %
Labor Efficiency				
Bearing fruit, acres/worker	_____	_____	_____	_____
All fruit, acres/worker	_____	_____	_____	_____
Accrual receipts/worker	\$ _____	\$ _____	\$ _____	\$ _____
Cost Control - Accrual				
Cost/bearing acre:	\$ _____	\$ _____	\$ _____	\$ _____
All labor	\$ _____	\$ _____	\$ _____	\$ _____
All equipment	\$ _____	\$ _____	\$ _____	\$ _____
Spray	\$ _____	\$ _____	\$ _____	\$ _____
Hired labor as % of oper. exp.	_____ %	_____ %	_____ %	_____ %
Capital Efficiency - Average for the Year				
Total farm capital/bearing acre	\$ _____	\$ _____	\$ _____	\$ _____
Total farm capital/fruit acre	\$ _____	\$ _____	\$ _____	\$ _____
Capital turnover, years	_____	_____	_____	_____
Profitability				
Net farm income:				
Without appreciation	\$ _____	\$ _____	\$ _____	\$ _____
With appreciation	\$ _____	\$ _____	\$ _____	\$ _____
Labor & mgmt. income/oper.	\$ _____	\$ _____	\$ _____	\$ _____
Rate of return to average capital w/apprec.:				
Equity capital	_____ %	_____ %	_____ %	_____ %
Total capital	_____ %	_____ %	_____ %	_____ %
Financial Summary - End of Year				
Farm:				
Net worth	\$ _____	\$ _____	\$ _____	\$ _____
Debt to asset ratio	_____	_____	_____	_____
Debt/bearing acre	\$ _____	\$ _____	\$ _____	\$ _____
Cash flow coverage ratio	_____	_____	_____	_____

NOTES

OTHER A.R.M.E. EXTENSION BULLETINS

No. 95-17	Dairy Farm Business Summary Eastern Plateau Region 1994	Robert A. Milligan Linda D. Putnam John S. Carlson Carl A. Crispell Karen Hoffman
No. 95-18	Dairy Farm Business Summary Northern Hudson Region 1994	Stuart F. Smith Linda D. Putnam Cathy S. Wickswat Anita W. Deming David R. Wood
No. 95-19	Dairy Farm Business Summary Eastern New York Renter Summary 1994	Stuart F. Smith Linda D. Putnam
No. 95-20	Seneca County's Local Governments: Opportunities for Intergovernmental Cooperation, Needs for Educational and Technical Assistance	David Kay Duane Wilcox
No. 95-21	Farm Income Tax Management and Reporting Reference Manual	Stuart F. Smith Charles H. Cuykendall
No. 95-22	Income Tax Implications for Farmers Receiving New York City Watershed Agricultural Program Payments	John M. Thurgood
No. 95-23	New York Economic Handbook 1996 Agricultural Situation and Outlook	A.R.M.E Staff
No. 95-24	Bee Economics A Computer Model for Economic Analysis of Beekeeping Operations	Lois Schertz Willet Nicholas W. Calderone Malcolm T. Sanford