Cornell
Cooperative
Extension

A.E. Ext. 89-41
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Managing with Finance

A PRO-DAIRY Management Focus Workshop

for Dairy Farm Managers

Participant's Manual

PRO-DAIRY

by

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Managing with Finance: Session I

	Activity	Page No.
1	Welcome at the Door	2
2	Warm-up, Teaching Team Introductions, and Agenda Sharing	3
3	Quantifying Goals	6
4	Profitability and Cash Flow	17
5	Introduction to the Balance Sheet	27
6	Construction of the Balance Sheet for Case Farm	33
7	Prepare Own Farm Balance Sheet	40
8	Using the Balance Sheet in Management	42
9	Wrap-up and Homework Assignment	56

ACTIVITY 1

Welcome at the Door

Key Point:

The teaching team welcomes you to Managing with Finance! We are very pleased to have you participating in the workshop and look forward to your contributions.

ACTIVITY 2

Teaching Team Introduction, Warm-up Exercise, and Agenda Sharing

Key Points:

1. We want you to get to know your teaching team members as well as your fellow workshop participants. We will give you some background information about ourselves. A teaching team introduction form is provided with our names, addresses, and phone numbers.

2. Everyone will introduce themselves before one person from each farm talks about a management change you have made since completing Managing for Success.

   Try to keep the focus on a management (people!) change. The change may be in the way you are thinking or actions you are taking in managing your farm business.

   We would like to use this time to review the management and planning concepts learned in Managing for Success.

Teaching Team Information Worksheet

Name: _____

Address: _____

Phone #: _____

Affiliation: _____

Biographical Information: _____

Name: _____

Address: _____

Phone #: _____

Affiliation: _____

Biographical Information: _____

Name: _____

Address: _____

Phone #: _____

Affiliation: _____

Biographical Information: _____

Agenda Sharing (Overhead-I.2.1)

TODAY'S GOALS

By the end of today's workshop, you, the participating dairy farm manager, will

1. **Recognize the importance of finance in quantifying goals to attain your business objectives.**

2. **Recognize the differences between profitability and cash flow.**

3. **Learn and apply the basic concepts and terminology of a balance sheet.**

ACTIVITY 3

Quantifying Goals

Key Points:

1. "SMART" (Specific, Measurable, Attainable, Rewarding, and Timed) financially quantified goals are crucial to making maximum business progress and to personal satisfaction.

2. Financial measures are a primary means of quantifying goals and establishing controls.

3. Productivity and other objectives should have financial goals and controls supporting them.

4. Financial goals are useful in measuring the contribution of each operation to the overall business.

5. Productivity goals are important but insufficient unless backed with financially quantified goals and controls.

6. The use of finances in operational management is crucial but beyond the scope of this course.

7. The primary focus of this course is on financial quantification of general management goals.

CASE A - PART 1

Name	Farm Position	Nickname
Joe	Farm Manager	Lots-of-Work
Bob	Son/Herdsperson	Low-Cost
Sam	Hired Worker	Little-Time-Off

Joe Lots-of-Work reviews the farms productivity and profitability and sees the following statements:

Case A - Part 1: Farm Information

Income Statement		Balance Sheet	
Gross Income	200,000	Farm Assets	500,000
Farm Expenses	174,000	Farm Liabilities	175,000
Net Farm Income	$ 26,000	Net Worth	$ 325,000
Number of Cows	75		
Milk/Cow	16,000 lbs.	Tons Hay Crop DM/Acre	2.2
Total milk shipped	1,190,000 lbs.	Tons Corn Silage/Acre	13.0
Milk shipped/worker	395,000 lbs.		

Farmer Lots-of-Work's conclusion is that his income is lower than he wants it to be. Farmer Lots-of-work sets about planning how to increase income and productivity. The plan looks like this:

PLAN -

Increase average herd size by 5 cows next year
Increase milk production by 1000/lbs/cow next year
Increase income

CASE A - PART 1

QUESTIONS

What do you think of Joe's plan?

Too ambitious?

Is it SMART? (Are goals Specific, Measurable, Attainable, Rewarding, and Timed?

Is Joe's plan complete?

What components does it lack?

Objectives?

Goals?

Tactics?

Controls?

Other?

CASE A - PART 2

At the end of one year several changes have been made and the picture looks like this:

Name	Farm Position	Nickname
Joe	Farm Manager	Lots-More-Work
Bob	Son/Herdsperson	Even-Less-Cash
Jake	Hired Hand	No-Time-Off

Case A - Part 2: Farm Information (1 year later)

Income Statement

Gross Income	226,000
Farm Expenses	201,000
Net Farm Income	$ 25,000

Balance Sheet

Farm Assets	505,000
Farm Liabilities	180,000
Net Worth	$ 325,000

Number of Cows	80
Milk/Cow	17,000 lbs.
Total milk shipped	1,350,000 lbs.
Milk shipped/worker	450,000 lbs.

Tons Hay Crop DM/Acre	2.1
Tons Corn Silage/Acre	12.0

Joe Lots-More-Work had met his productivity goals boasting 17,000 in production with 80 cows shipping 17,000 # of milk. Income was up as planned but alas net income had decreased. Sam quit and went farming on his own. Jake was hired to replace him.

CASE A - PART 2

QUESTIONS

What went according to plan?

What went wrong?

Technical - Why?

Management- Why?

CASE B - PART 1

Name	Farm Position	Nickname
Sam	New Owner/Manager	Farm-Bucks
Sally	Daughter/Herdsperson	Want's-a-car
Joe Jr.	Hired Employee	Serious-Bowler

Sam farm-bucks had just purchased this farm after recently leaving the employ of Joe lots-of-work. Sam sized up the operation prior to the time of his purchase and it looked like this:

Case B - Part 1: Farm Information

Income Statement		Balance Sheet	
Gross Income	200,000	Farm Assets	500,000
Farm Expenses	174,000	Farm Liabilities	175,000
Net Farm Income	$ 26,000	Net Worth	$ 325,000
Number of Cows	75		
Milk/Cow	16,000 lbs.	Tons Hay Crop DM/Acre	2.2
Total milk shipped	1,190,000 lbs.	Tons Corn Silage/Acre	13.0
Milk shipped/worker	395,000 lbs.		

Sam concluded that his milk and forage productivity were too low. His net income was too low. His expenses/cow were at the highest level acceptable to him. He also knew that his hired employee needed more time off. Sam set out his plan as described on the following page.

CASE B - PART 1 (continued)

PLAN -

OBJECTIVES:

- increase net income
- hold constant or reduce expenses/cow
- increase productivity
- reduce hired employee's work week
- increase herd size
- increase forage productivity without increased cost

GOALS:

- increase net income by $10,000 in one year
- maintain expenses/cow at $2,320 per year
- increase productivity/cow to 17,000 in one year
- increase average herd size by 5 cows next year
- increase hay crop by 0.2 tons/acre this season
- increase corn silage yield/acre this season by 1 ton/acre this season

CONTROLS:

- monthly income and expense statements created and monitored to meet flat expense goals.
- cost control report of cost of feed - itemized report to allow for specific corrections.
- Joe Jr. - time-off sheet to be sure he makes his weekly bowling commitments.

CASE B - PART 1

QUESTIONS

What do you think of Sam's plan?

Too ambitious?

Is it SMART?

Is the plan complete?

What components does it lack?

Objectives?

Goals?

Controls?

Other?

CASE B - PART 2

After a year had passed Sam's farm books looked like this:

Case B - Part 2: Farm Information (1 year later)

Income Statement		Balance Sheet	
Gross Income	224,000	Farm Assets	505,000
Farm Expenses	185,600	Farm Liabilities	170,000
Net Farm Income	$ 38,512	Net Worth	$ 335,000
Number of Cows	80		
Milk/Cow	16,800 lbs.	Tons Hay Crop DM/Acre	2.4
Total milk shipped	1,334,000 lbs.	Tons Corn Silage/Acre	14.0
Milk shipped/worker	445,000 lbs.		

Sam has exceeded his goal of increased net income through the use of some tight control tactics. He has also met his expense/cow goals at $2,320/head. His liabilities have actually decreased and his net worth improved. His forage yields improved according to plan. He increased his herd size as planned but failed to reach his productivity/cow goal.

CASE B - PART 2

QUESTIONS

What went according to plan?

What went wrong?

Technical why?

Management why?

Compare and contrast Case A and Case B:

What was the major difference?

What does this show us?

Overhead-I.3.1

Quantifying Goals

I. Question: **How is finance used in management?**

Answer: **Finance is used to quantify goals.**

II. Question: **Why have a goal?**

Answers: **a. Motivation**

b. Satisfaction of achievement

ACTIVITY 4

Profitability and Cash Flow

Key Points:

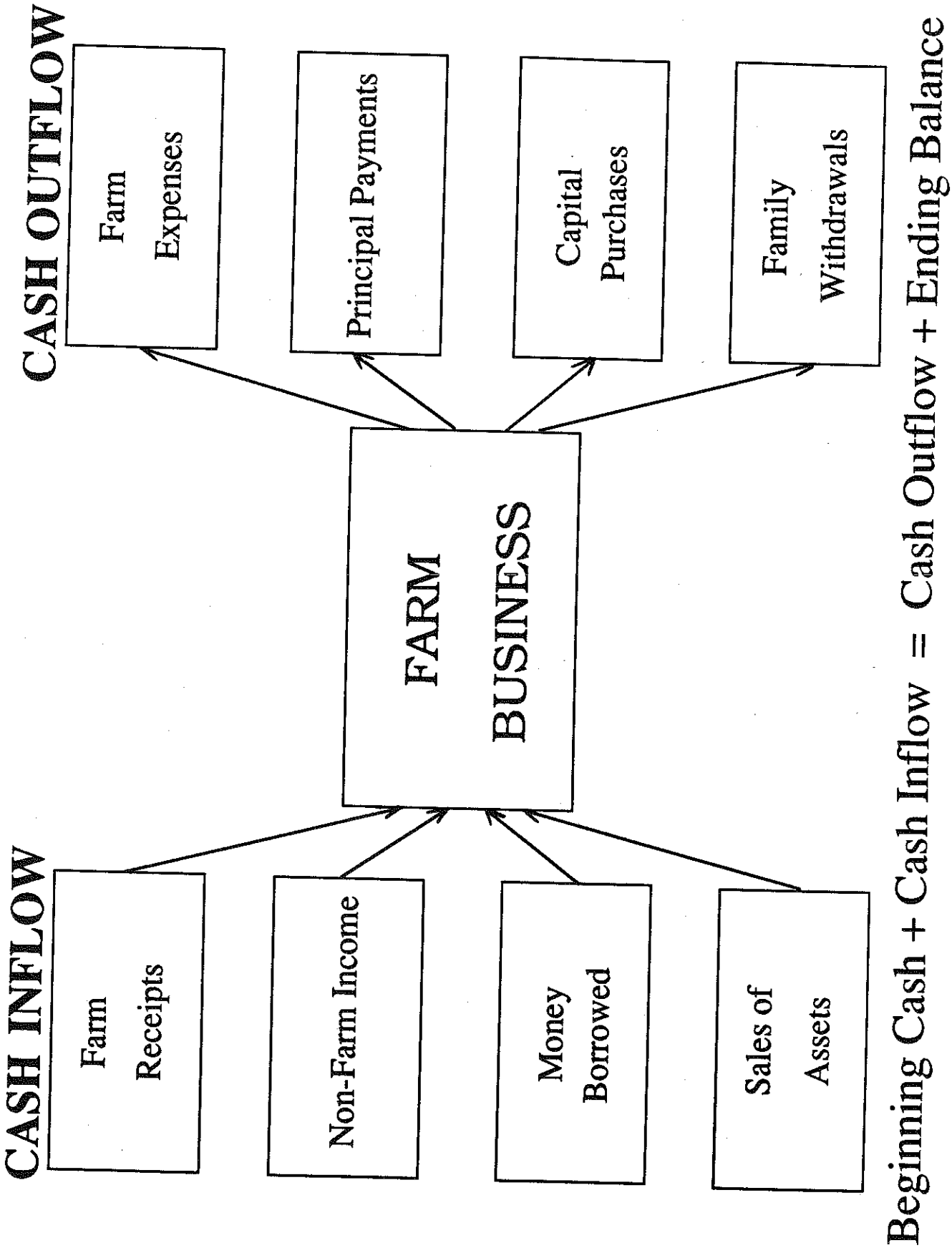
1. The intuitive understanding of the difference between profitability and cash flow is basic to an understanding of managing with finances. At this point we are trying to understand the concept - later we will learn how the different measures are calculated.

2. Cash flow is an identity; that is, cash inflows and outflows must balance. The term "cash flow problem" actually means that the business is having difficulty meeting its cash commitments.

3. Profitability includes much more than the cash position of the business. The quantification of profitability is necessary to monitor the financial success of the business.

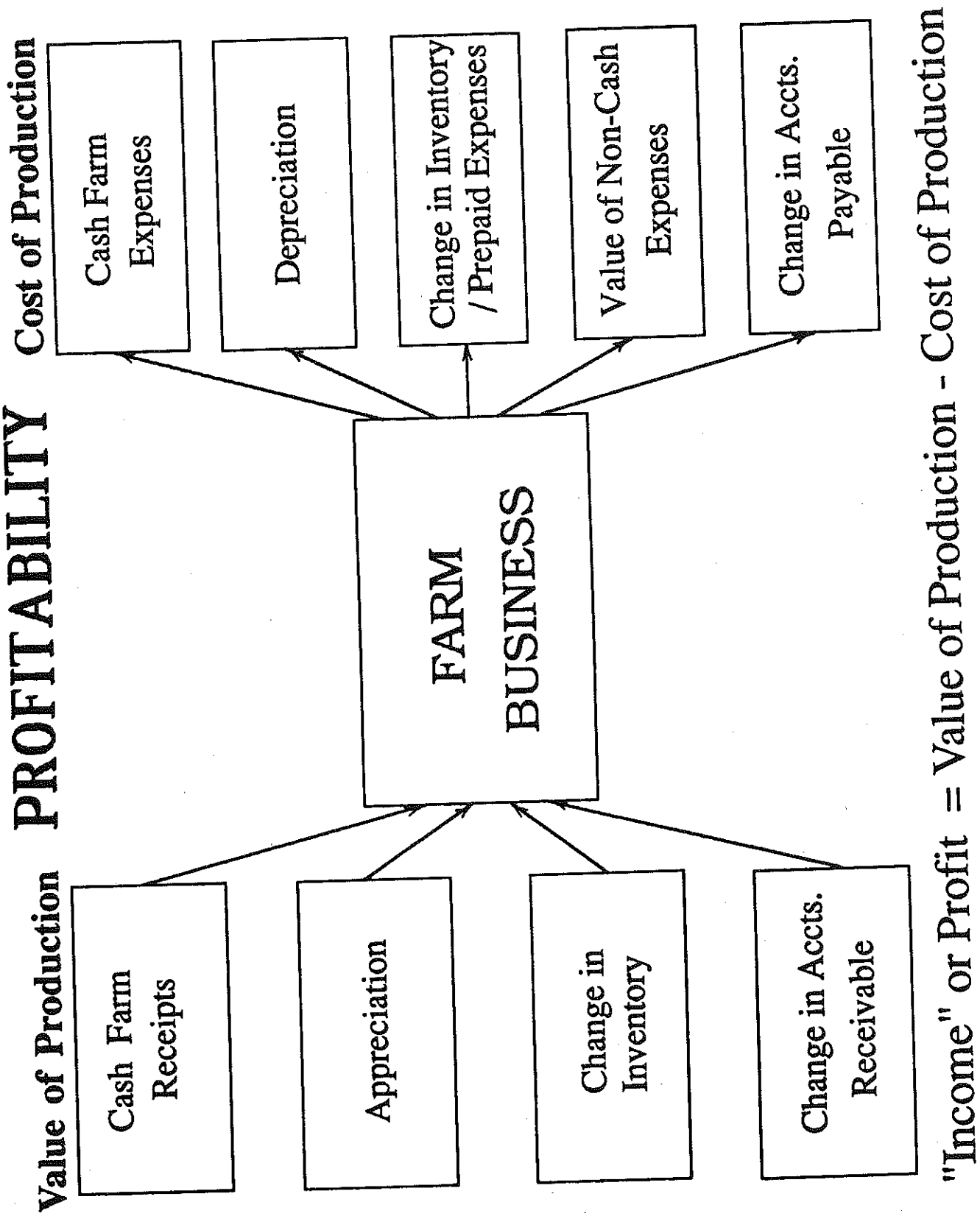
4. Businesses with little profitability may have no difficulties meeting financial obligations; businesses with difficulties meeting cash commitments may be profitable.

Overhead-I.4.1



Beginning Cash + Cash Inflow = Cash Outflow + Ending Balance

Overhead-I.4.2



Overhead I.4.3

Little or No Difficulty Meeting Commitments Without Profitability

1. Little or No Debt
2. Increasing accounts payable or other debts
3. Living off Inventories
4. Living off depreciation
5. Lack of withdrawals

Overhead I.4.4

Profitability With Great Difficulty Meeting Commitments

1. Growing Business
2. Rapid Payment of Debt
3. Large Withdrawals
4. Unusual Conditions such as
   - high inventory prices
   - high crop production into inventory

Overhead-I.4.5

PROFITABILITY/CASH FLOW MINICASE:

BASE

CATEGORY	AMOUNT	PROFITABILITY	CASH FLOW
Beginning Cash Balance	$ 5,000		$ 5,000
Cash Farm Receipts	200,000	200,000	200,000
Change in Accts. Receivable	0	0	
Change in Inventories	5,000	5,000	
Money Borrowed	15,000		15,000
Non-farm Income	0		0
Subtotal		$205,000	$220,000
Cash Farm Expenses	160,000	160,000	160,000
Principal Payments	25,000		25,000
Capital Purchases	15,000		15,000
Change in Accts. Payable	2,000	2,000	
Depreciation	20,000	20,000	
Subtotal		$182,000	$200,000
Family Withdrawals			$20,000
"Profit"		$23,000	
Ending Cash Balance			$0

Overhead-I.4.6

PROFITABILITY/CASH FLOW MINICASE:

INCREASING ACCOUNT PAYABLE

CATEGORY	AMOUNT	PROFITABILITY	CASH FLOW
Beginning Cash Balance	$ 5,000		$ 5,000
Cash Farm Receipts	200,000	200,000	200,000
Change in Accts. Receivable	0	0	
Change in Inventories	5,000	5,000	
Money Borrowed	15,000		15,000
Non-farm Income	0		0
Subtotal		$205,000	$220,000
Cash Farm Expenses	160,000	160,000	160,000
Principal Payments	25,000		25,000
Capital Purchases	15,000		15,000
Change in Accts. Payable	* 22,000 *	22,000	
Depreciation	20,000	20,000	
Subtotal		$202,000	$200,000
Family Withdrawals			$20,000
"Profit"		* $3,000 *	
Ending Cash Balance			$0

Overhead-I.4.7

PROFITABILITY/CASH FLOW MINICASE:

DEPLETING INVENTORIES

CATEGORY	AMOUNT	PROFITABILITY	CASH FLOW
Beginning Cash Balance	$ 5,000		$ 5,000
Cash Farm Receipts	200,000	200,000	200,000
Change in Accts. Receivable	0	0	
Change in Inventories	********** * -25,000 **********	-25,000 *	
Money Borrowed	15,000		15,000
Non-farm Income	0		0
Subtotal		$175,000	$220,000
Cash Farm Expenses	160,000	160,000	160,000
Principal Payments	25,000		25,000
Capital Purchases	15,000		15,000
Change in Accts. Payable	2,000	2,000	
Depreciation	20,000	20,000	
Subtotal		$182,000	$200,000
Family Withdrawals			$20,000
"Profit"		********** * $-7,000 * * **********	
Ending Cash Balance			$0

Overhead-I.4.8

PROFITABILITY/CASH FLOW MINICASE:

GROWING BUSINESS

CATEGORY	AMOUNT	PROFITABILITY	CASH FLOW
Beginning Cash Balance	$ 5,000		$ 5,000
Cash Farm Receipts	160,000	160,000	160,000
Change in Accts. Receivable	20,000	20,000	
Change in Inventories	25,000	25,000	
Money Borrowed	15,000		15,000
Non-farm Income	0		0
Subtotal		$205,000	$180,000
Cash Farm Expenses	160,000	160,000	160,000
Principal Payments	25,000		25,000
Capital Purchases	15,000		15,000
Change in Accts. Payable	2,000	2,000	
Depreciation	20,000	20,000	
Subtotal		$182,000	$200,000
Family Withdrawals			$-20,000
"Profit"		$23,000	
Ending Cash Balance			$0

Overhead-I.4.9

PROFITABILITY/CASH FLOW MINICASE:

RAPID DEBT REPAYMENT

CATEGORY	AMOUNT	PROFITABILITY	CASH FLOW
Beginning Cash Balance	$ 5,000		$ 5,000
Cash Farm Receipts	200,000	200,000	200,000
Change in Accts. Receivable	0	0	
Change in Inventories	5,000	5,000	
Money Borrowed	15,000		15,000
Non-farm Income	0		0
Subtotal		$205,000	$220,000
Cash Farm Expenses	160,000	160,000	160,000
Principal Payments	* 45,000 *		45,000
Capital Purchases	15,000		15,000
Change in Accts. Payable	2,000	2,000	
Depreciation	20,000	20,000	
Subtotal		$182,000	$220,000
Family Withdrawals			* $0 *
"Profit"		$23,000	
Ending Cash Balance			$0

ACTIVITY 5

Introduction to the Balance Sheet

Key Points:

1. The balance sheet is a snapshot of the business' financial situation.

2. The primary function of the balance sheet is to measure risk-bearing ability or financial solvency. Solvency refers to the ability of the business to cover its debt obligations if all assets were sold.

3. Assets are the items a business owns.

4. Liabilities are the debts the business has incurred.

5. Net worth or equity is the difference between the value of the assets and the value of the liabilities; it is what the business would actually retain in the event of a dispersal of assets and payout of debt.

6. A second major function of the balance sheet is to show the financial structure of the business. This is accomplished by breaking down the assets and liabilities listed on the balance sheet into current, intermediate, and long term categories.

7. Market value of assets significantly impacts the net worth of a business.

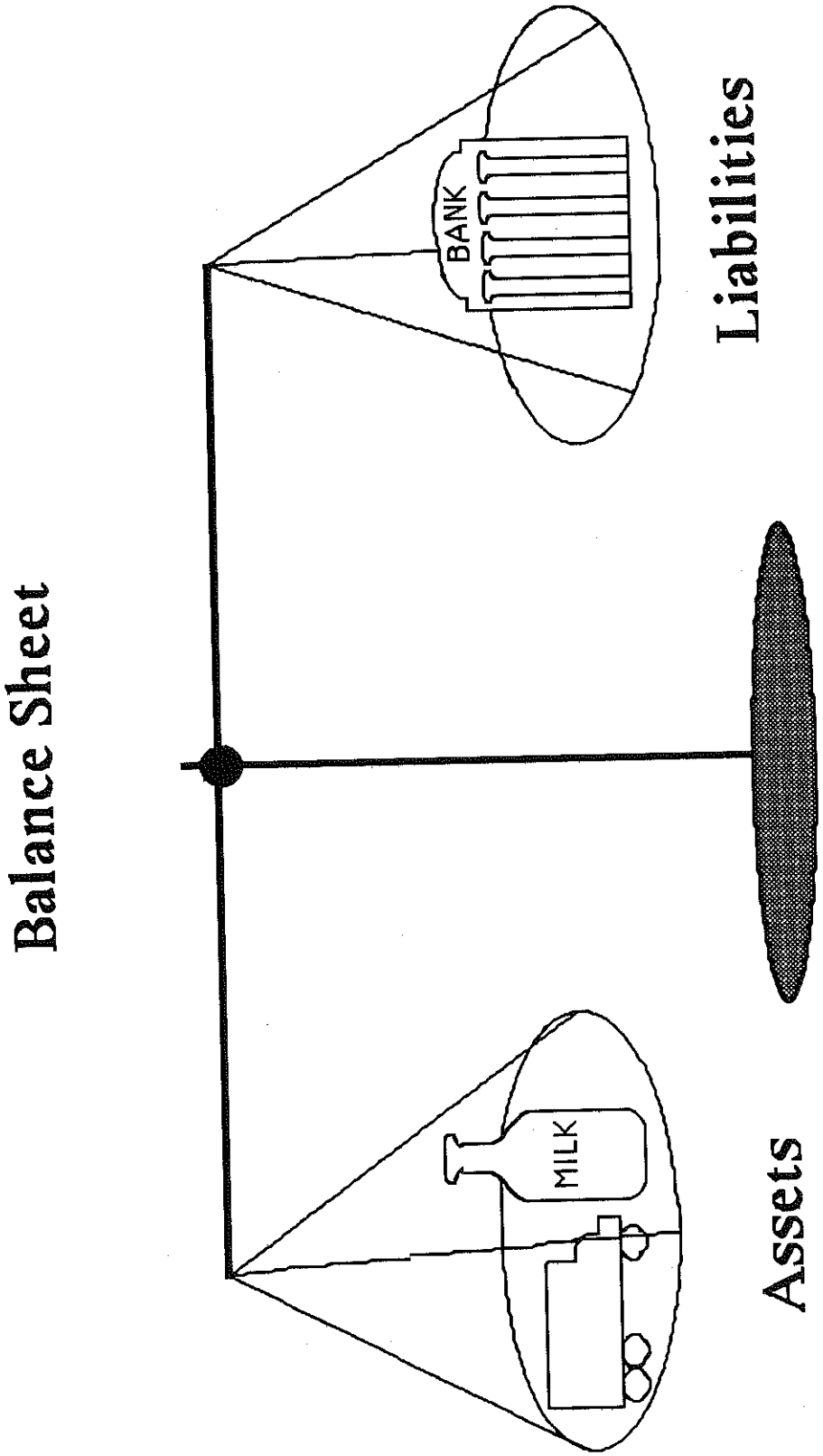
Overhead I.6.1

Assets - Liabilities = Net Worth or Owner's Equity

Own - Owe = Net Worth or Owner's Equity

What you have left if you sell the Farm!

Overhead-I.6.2



Overhead I.6.3

Categories of Assets and Liabilities

Assets

a. Current

b. Intermediate

c. Long Term

Liabilities

a. Current

b. Intermediate

c. Long Term

Overhead I.6.4

Balance Sheet

Assets		**Liabilities**	
Cash/Savings	$50,000	Operating Debt	$50,000
Cows	100,000	7 yr. Bank Loan	50,000
Land/Bldgs.	200,000	F.L.B. loan	100,000
Total Assets	**$350,000**	**Total Liabilities**	**$200,000**
		NET WORTH	**$150,000**

Overhead I.6.5

Valuation of Assets

Market Value:

Amount item would bring if sold on the "market"

Problems with using market value on balance sheet:

1. Need information on market
2. Market price change can cause dramatic net worth change
3. Sale expenses ignored
4. Contingent tax liability

ACTIVITY 6

Construction of the Balance Sheet for Case Farm

Key Points:

1. Periodic farm inventories are essential to measuring financial success and progress.

2. The concept of a balance sheet is quite simple; however, obtaining accurate physical and price (value) data is often difficult!

   a. The technique used to construct a balance sheet and other financial statements is the "count and value" technique.

   b. A farm inventory is the result of the "count and value" technique which tests the individual items on the farm, including date purchased, amount paid, and, in some situations, both "book value" and "market value", over a period of years. The farm inventory allows for completion of the listing of assets in the balance sheet. This data is also then used for the construction of the income statement.

CASE FARM BALANCE SHEET EXERCISE

Use the worksheets on the following five pages to complete the balance sheet for Case Farm.

Case Farm
Balance Sheet
December 31

ASSETS		LIABILITIES	
Current		Current	
Farm cash, checking & savings	4,800	Accounts payable	$_____
Accounts receivable	20,391	Operating debt	31,600
Prepaid expenses	200		
Feed/Supplies	$_____		
Total current	$_____	Total current	$_____
Intermediate		Intermediate	
Dairy cows	95,000	FmHA	$_____
Heifers	40,750	P D Bank	22,758
Bulls/other lvst.	500	Last Bank	580
Machinery/equip.	82,400	Car note	874
Other stock & cert.	25		
Total intermediate	$218,675	Total intermediate	$89,014
Long-term		Long-term	
Land/buildings	204,000	FmHA	57,849
		PD Bank	$_____
Total long-term	$204,000	Total long-term	$149,022
		Total Farm Liab.	$_____
		FARM NET WORTH	$_____
Total Farm Assets	$497,665	Total Liabilities & Net Worth	$_____

GROWN FEED INVENTORY

Item	(Col. 14) Beginning of Year (January 1) Quantity	(Col. 15) Price Per Unit	(Col. 16) Total Value	(Col. 17) End of Year (December 31) Quantity	(Col. 18) Price Per Unit	(Col. 19) Total Value
Corn-HMSC	_____	$_____	$_____	_____	$_____	$_____
Corn-HMEC	_____	_____	_____	_____	_____	_____
Corn-dry, _____	_____	_____	_____	_____	_____	_____
Oats	_____	_____	_____	_____	_____	_____
Wheat	_____	_____	_____	_____	_____	_____
Other _____	_____	_____	_____	_____	_____	_____
Dry hay	_____	_____	_____	_____	_____	_____
Hay crop silage	_____	_____	_____	_____	_____	_____
Corn silage	_____	_____	_____	_____	_____	_____
Other _____	_____	_____	_____	_____	_____	_____
Total Grown Feed			$_____			$_____

PURCHASED FEED INVENTORY

Item	(Col. 20) Beginning of Year (January 1) Quantity	(Col. 21) Price Per Unit	(Col. 22) Total Value	(Col. 23) End of Year (December 31) Quantity	(Col. 24) Price Per Unit	(Col. 25) Total Value
Dairy grain & concentrate	20 t.	$ 275	$ 5500	22 t.	$ 277	$ 6100
H.M.S.C.	140 t.	85	11,900	180 t.	85	15,300
Total dairy grain & conc.			$ 17,400			$ 21,400
Dairy roughage						
Total dairy roughage			$			$
Nondairy feed			$			$

SUPPLIES INVENTORY

Item	(Col. 26) Beginning of Year (January 1) Quantity	(Col. 27) Price Per Unit	(Col. 28) Total Value	(Col. 29) End of Year (December 31) Quantity	(Col. 30) Price Per Unit	(Col. 31) Total Value
Machine: Parts		$	$		$	$
Fuel, oil, grease						
Livestock: Semen	25 straws	20	500	20 straws	25	500
Vet. supplies						
Other supplies						
Crops: Fertilizer				5 tons	200	1000
Seeds	8 bu.	50	400			200
Pesticides/other			100			
Land/building/fence						
All Other						
Total supplies			$ 1000			$ 1700

CHANGES IN OPERATING ACCOUNTS PAYABLE

(Col. 95) Account Number or Description	(Col. 96) Ending Balance (Dec. 31)	-	(Col. 97) Beginning Balance (Jan. 1)	=	(Col. 98) Change in Acct. Pay.
McVey Feed Mill:	$ 5000	-	$ 0	=	$ 5000
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
TOTAL:	$ 5000	-	$ 0	=	$ 5000

(Col. 99) Allocation: Expense Category	Change in Acct. Payable
Hired labor	$
Feed	
Dairy grain & conc.	5000
Dairy roughage	
Nondairy feed	
Machinery	
Mach. hire & lease	
Mach. repairs/parts	
Auto exp. (farm share)	
Fuel, oil & grease	
Livestock	
Replacement livestock	
Breeding	
Veterinary & med.	
Milk marketing	
Cattle lease	
Other livestock exp.	
Crops	
Fertilizer & lime	
Seeds & plants	
Spray, other crop exp.	
Real Estate	
Land, bldg., fence rep	
Taxes	
Rent & lease	
Other	
Insurance	
Telephone (farm share)	
Electric (farm share)	
Interest	
Miscellaneous	
Expansion livestock	
====== EQUALS ======>	$ 5000

Computer entry: Combine Col. 99 with data on page 44 to complete Screen 13.

LIABILITIES AND DEBT PAYMENTS

(Col. 67) Creditor	(Col. 68) Debt Amount Jan. 1	(Col. 69) Debt Amount Dec. 31	(Col. 70) Amounts of New Borrowings	(Col. 71) Amount of Debt Refinanced	(Col. 72) Actual Summary Year Payments Principal	(Col. 73) Actual Summary Year Payments Interest	(Col 74) Current Year Plans Amount of Each payment	(Col 75) Current Year Plans # Payments year
Long term debt (≥ 10 years)								
Fm HA	$ 60,599	$ 57,849	$	$	$ 2750	$ 3550	$ 525	12
PD Bank	93,757	91,173			2584	9860	1037	12
Intermediate term debt (>1 yr., <10 yrs.)								
Fm HA	$ 75,902	$ 64,802	$	$	$ 11,100	$ 8100	$ 1000	12
PD Bank	7528	22,758	18,700		3470	1980	830	12
Last Bank	2870	580			2290	206	615	1
Car Note	2550	874			1676	200	148	12
Short term debt (1 year or less)								
	$	$	$	$	$	$	$	

ACTIVITY 7

Prepare Own Farm Balance Sheet

Key Points:

1. You can determine a physical inventory and value of assets for your farm business.

2. Management time is needed to construct a balance sheet for analysis of the farm business.

3. Inventory data from homework done in the PRO-DAIRY Financial Data Collection Workbook will be used to begin construction of an OWN FARM balance sheet. Completion of the balance sheet is part of your homework assignment.

4. Some balance sheet data was not assigned prior to Session-I. Specific information which will be lacking includes (1) farm cash, checking, and savings, (2) prepaid expenses.

5. The OWN FARM balance sheet has workbook column number references to assist participants in finding needed information.

Own Farm
Balance Sheet
December 31

ASSETS

Current
Farm cash, checking & savings (Col. 66) $_____

Accts. receivable (Col. 89) $_____

Prepaid expenses (Col. 66) $_____

Feed/Supplies (Cols. 19+25+31) $_____

Total short $_____

Intermediate
Dairy cows: owned (Col. 39) $_____

Heifers (Col. 39) $_____

Bulls/other lvst. (Col. 39) $_____

Machinery/equip: owned (Col. 13) $_____

Other stock & cert. (Col. 66) $_____

Total inter. $_____

Long-term
Land/buildings owned (Col. 48) $_____

Total long-t. $_____

Total Farm Assets $_____

LIABILITIES

Current
Accounts payable (Col. 96) $_____

Operating debt: (Col. 78)
_____ $_____
_____ $_____

Short term: (Col. 69)
_____ $_____
_____ $_____
_____ $_____

Advanced govt. receipts (Col. 78) $_____

Total short $_____

Intermediate (Col. 69)
_____ $_____
_____ $_____
_____ $_____
_____ $_____
_____ $_____

Total inter. $_____

Long-term (Col. 69)
_____ $_____
_____ $_____
_____ $_____
_____ $_____

Total long-t. $_____

Total Farm Liab. $_____

FARM NET WORTH $_____

ACTIVITY 8

Using the Balance Sheet in Management

Key Points:

1. A number of factors cause net worth to change:
   a. Increases in net worth result from:
      1) Profitable production
      2) Increase in the price of assets
      3) Infusion of cash from a nonfarm source (including off-farm wages, gifts, inheritances, etc.)
      4) Forgiveness of a liability.
   b. Decrease in net worth result from:
      1) Non-profitable production
      2) Decrease in price of assets
      3) Depreciation
      4) Lost capital
      5) Family withdrawals
2. In business analysis based on the balance sheet, one examines <u>ratios</u> and <u>trends</u>. Examples of these include the following:
   a. Debt/Asset Ratio
   b. Percent net worth
   c. Net worth trend analysis
   d. Investment per unit of production
   e. Debt per cow

The farm financial analysis chart is designed just like the farm business chart on pages 30-31 and may be used to measure the financial health of the farm business. Most of the financial measures are defined on pages 11, 13, 16, and 27 in this publication.

Table 42. FINANCIAL ANALYSIS CHART
395 New York Dairy Farms, 1990

Liquidity (repayment)				
Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow
$ 59	$932	5.22	4%	$ 119
181	742	2.11	8	680
253	663	1.59	11	1,210
341	582	1.30	14	1,632
400	513	1.15	16	2,025
454	452	1.01	18	2,386
501	395	0.85	20	2,735
560	315	0.69	22	3,178
642	207	0.43	25	3,737
899	-196	-0.23	37	4,726

Solvency				Profitability	
		Debt/Asset Ratio		Percent Rate of Return with appreciation on:	
Leverage Ratio*	Percent Equity	Current & Intermediate	Long Term	Equity	Investment**
0.02	98	0.01	0.00	21%	16%
0.11	90	0.06	0.00	11	10
0.21	82	0.12	0.07	8	8
0.33	75	0.19	0.18	5	6
0.43	69	0.25	0.27	3	5
0.55	64	0.31	0.39	1	4
0.72	58	0.37	0.50	-1	3
0.93	51	0.44	0.61	-3	1
1.22	45	0.53	0.74	-7	-2
2.40	32	0.73	1.00	-23	-7

Efficiency (Capital)				
Capital Turnover (years)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation
1.38	$1,390	$ 596	$ 4,264	$110,353
1.68	1,972	817	5,087	53,680
1.84	2,262	940	5,667	33,094
2.03	2,594	1,050	6,103	22,571
2.18	2,865	1,194	6,482	15,798
2.34	3,125	1,318	6,869	10,557
2.50	3,504	1,472	7,340	3,939
2.70	4,037	1,658	7,990	-3,080
3.08	4,705	1,946	8,937	-11,458
4.27	6,762	2,646	11,419	-47,167

*Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

**Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Overhead I.8.1

Increases in Net Worth

Profitable Production:

a) Increase in Inventory

b) Increase in Accounts Receivable

c) Increase in Cash, Checking, Savings

d) Decrease in Debt

Increase in Price of Assets

Infusion of Cash from Outside of Business

Forgiveness of a liability

Overhead I.8.2

Decreases in Net Worth

Non-profitable Production:

a) Decrease in Inventory

b) Decrease in Accounts Receivable

c) Decrease in Cash, Checking, Savings

d) Increase in Debt

Decrease in Price of Assets

Depreciation

Transfer of Assets out of the Business

a) Income Tax

b) Savings

c) Family Living

d) Other Withdrawals for Non-Farm Use

Overhead-I.8.2b

No Change in Net Worth

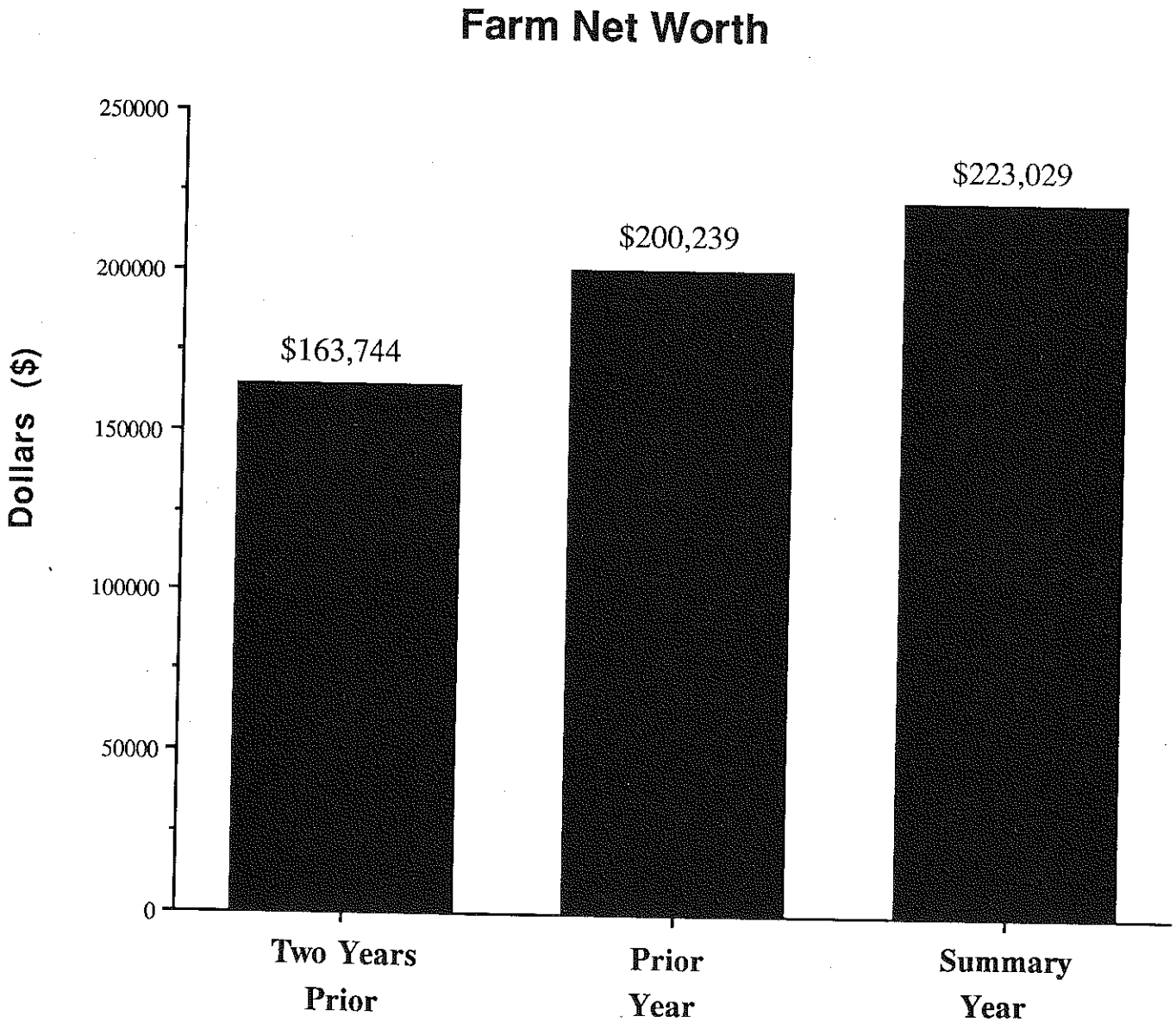
Borrowing money

Repaying principal

Overhead I.8.3

	Bill's Beef Bonanza	Barb's Beef Barn
Total Assets	$1,000,000	$300,000
Total Liabilities	-800,000	-100,000
Net Worth	$200,000	$200,000
Debt/Asset Ratio	80%	33%
Percent Equity	20%	67%

Overhead I.8.4



Overhead 1.8.5

Percent Equity

$$\text{Percent Equity} = \frac{\text{Net Worth}}{\text{Total Assets}}$$

Example Calculation: Case Farm Percent Equity

$$\text{Percent Equity} = \frac{\$\ 223{,}039}{\$497{,}665} \times 100 = 45\%\ \text{equity}$$

Overhead I.8.6

Debt/Asset Ratio

$$\text{Debt/Asset Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Example Calculation: Case Farm Debt/Asset Ratio

$$\text{Debt/Asset Ratio} = \frac{\$\,274{,}636}{\$497{,}665} = 0.55$$

Capital Efficiency

$$\text{Total Farm Assets/Cow} = \frac{\text{Average Assets}}{\text{Average No. of Cows}}$$

Example Calculation: Case Farm Total Farm Assets/ Cow

$$\text{Total Farm Assets/Cow} = \frac{\$\,497{,}665 + \$473{,}895}{2} \quad /99 = \$4{,}907$$

Overhead I.8.8

Capital Efficiency

$$\text{Real Estate Investment/Cow} = \frac{\text{Average Real Estate}}{\text{Average No. of Cows}}$$

Example Calculation: Case Farm Real Estate Investment/Cow

$$\text{Real Estate Investment/Cow} = \frac{\$\,200{,}000 + \$204{,}000}{2} \quad /99 = \$2{,}040$$

Overhead I.8.9

Capital Efficiency

$$\text{Machinery Investment/Cow} = \frac{\text{Average Machinery}}{\text{Average No. of Cows}}$$

Example Calculation: Case Farm Machinery Investment/ Cow

$$\text{Machinery Investment/Cow} = \frac{\$\,78{,}100 + \$82{,}400}{2} \quad /99 = \$811$$

ad I.8.10

ACTIVITY 9

Assignment of Homework and Wrap-Up

oints:

1. The homework assignment is an essential part of the workshop. It will be used during the second session as well as being necessary for completion of a farm business summary.

2. The homework assignment is to collect and record in the workbook the following information: (1) additional data needed to complete balance sheet, (2) capital sales and purchases, (3) depreciation, (4) debt payments, (5) financial leases, and (6) cash income and expenses.

. Before leaving today's workshop, please complete the "Session I" portion of the feedback sheets located at the end of the Day IV materials (Managing with Finance-IV, pages 35-39).

391

Overhead I.9.1

Homework Assignment

Complete Stage 2 of Data Collection

1. Additional data needed to complete balance sheet
2. Capital sales and purchases
3. Depreciation
4. Debt payments
5. Financial Leases
6. Cash income and expenses

Managing with Finances: Session II

YOUR FARM INCOME STATEMENT

	Activity	Page No.
1	Setting the Stage - Warm-up Activity	2
2	Review and Agenda Sharing	4
3	Income Statement Introduction	6
4	Identifying Cash Farm Receipts and Expenses	12
5	Introduction to Accrual Accounting	19
6	Depreciation: A Cost of Using Capital Assets	31
7	Net Farm Income Exercise	34
8	Own Farm Income Statement	39
9	Assignment of Homework and Wrap-Up	45

ACTIVITY 1

Setting The Stage

Key Point:

1. We want to start with an activity that will get you thinking about financial accounting.

2. We will use the "Why we keep/use financial records survey" handout (page 3) to start a discussion on why you keep and use financial records.

Overhead II.1.1

Why We Keep/Use Financial Records Survey

For what reasons do YOU keep/use financial records on your farm business?

Rank the following reasons from 1 to 5 (1 being most important). If you keep/use financial records for a reason not shown below, add it to the list.

I keep/use farm business financial records:

_____ **A.** to determine farm profits

_____ **B.** because they are required by my lender

_____ **C.** to measure whether goals have been reached

_____ **D.** for income tax reporting

_____ **E.** to keep other family members happy

_____ **F.** other: _____

ACTIVITY 2

Review and Agenda Sharing

Key Points:

1. One of the best ways to learn is by review. We will briefly review the concepts covered in Session I of Managing with Finance.

2. It should be obvious that you have already learned a lot!

3. This week we will make the transition from the balance sheet to the income statement.

4. The goals of today's program are listed on page 5.

Overhead-II.3.1

TODAY'S GOALS

By the end of today's session, you, the participating dairy farm manager, will

1. **Recognize the importance and usefulness of an income statement.**

2. **Learn and apply the basic concepts and terminology of an income statement.**

ACTIVITY 3

Introduction to the Income Statement

Key Points:

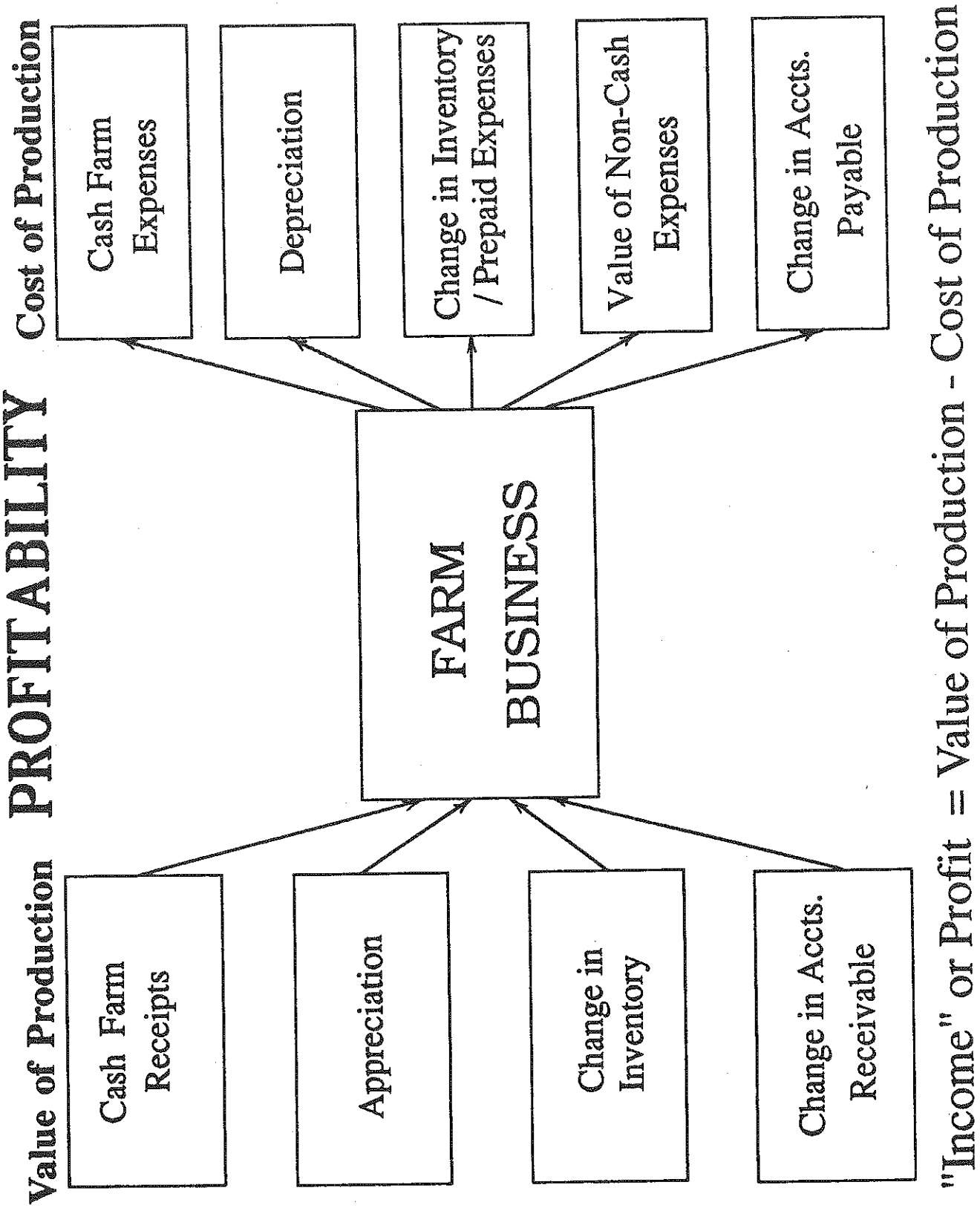
1. The income statement is used to measure the profitability of the business.

2. Correct and accurate determination of profitability depends upon one's ability to include all the returns and costs of farm production.

3. Profitability is calculated as follows: Value of farm "production" less cost of production = profit. (Overheads-II.4.2 and II.4.3.)

4. Farm production can be defined as the goods and services generated by the farm resources.

Overhead-II.4.1



Overhead-II.4.2

Value of Production

LESS

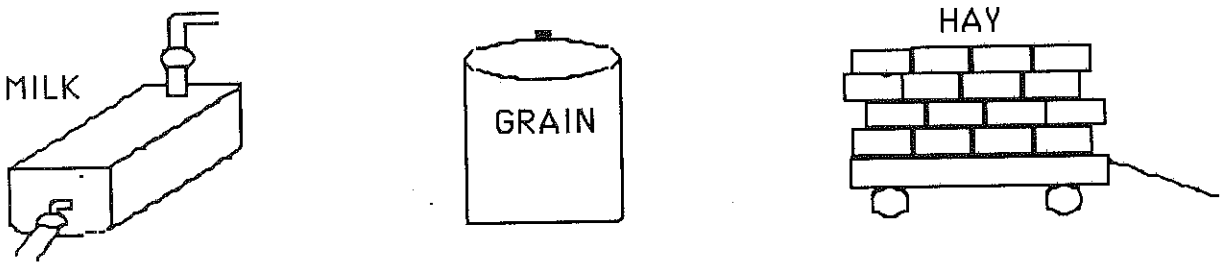
Costs of Production

EQUALS

Profit

Overhead-II.4.3

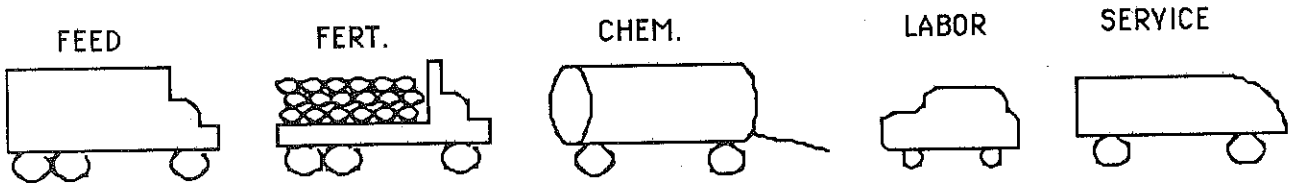
Value of Production



Other Dollars Received by My Farm

LESS

Costs of Production



Other Costs Incurred by My Farm

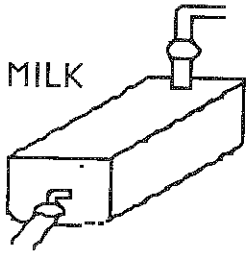
EQUALS

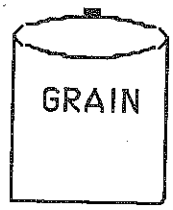
Profit

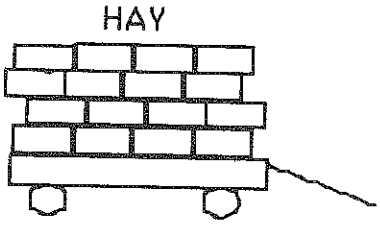
Overhead II.4.4

Value of Production

What is included?







Other Sources of the "Value of Production"

Other Livestock Sales

Custom Work

Government Payments

Co-op Dividends

Directors Fees

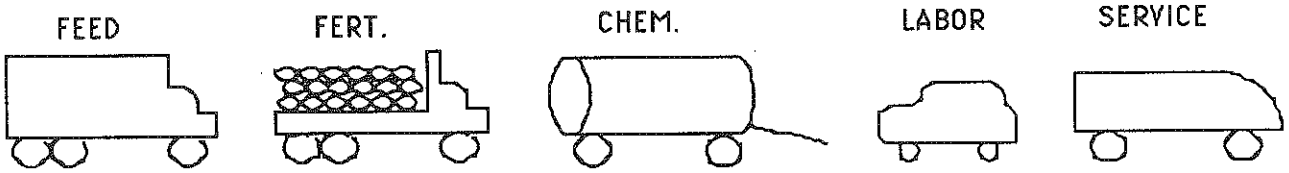
Increases in Inventories

Other Non-Cash Sources

Overhead II.4.5

Costs of Production

What are they?



Other Cash Operating and Ownership Costs

Repairs - Machinery, Buildings
Supplies - Dairy, Crop, Buildings
Marketing - Milk, Cattle
Interest
Taxes
Insurance
Utilities
Replacement Livestock

Non-Cash Costs of Production

Feed and Supplies used out of Inventory
Costs of replacing assets used (depreciation)
Feed, Supplies, and Services used but not paid for

Do Not Include

New Machinery, Equipment, and Real Estate
Capital Improvements
Income Taxes, Personal Expenses

ACTIVITY 4

Identifying Cash Farm Receipts and Expenses

Key Point:

1. Classification of farm receipts and expenses into specific receipt and expenditure categories enables consistent evaluation and analysis of the different parts of the business.

2. Poor record keeping is a major obstacle to business analysis. In order to evaluate your business you need to categorize your receipts and expenses consistently each year. Consistency within the dairy industry will allow comparison of specific expenses between farms of similar size.

3. We will use a class exercise to practice categorizing receipts and expenses:

   The following exercise uses the Cornell Farm Account book to demonstrate a commonly accepted system of expense and receipt categories that will be compatible with the dairy farm business summary. Other equally acceptable record keeping systems are available that use similar receipt and expense categories (e.g. ELFAC, Agrifax, looseleaf Farm Business Record).

4. Selected farm accounting systems are described in the appendix.

Identifying Cash Farm Receipts and Expenses Exercise

I. Case Farmer has finished his year's records with the exception of the final page. Finish the records by categorizing each expense item in the appropriate column. Note that not all items are business expenses. Also, you will have to differentiate between capital items and expense items.

II. Use the summary page to allocate the farm share of selected categories of expenses. You must decide how electricity should be allocated. What is an acceptable percentage of the total electric bill to allocate as personal?

III. After the allocation is completed the final totals are transferred to the cash expenses column on Case Farm - Accrual Expenses worksheet.

FARM OPERATING EXPENSES AND OTHER CASH OUTFLOW (continued)

Month Day	Quantity	Kind of expense	1 Enter all items in this column	2 Labor: Wages paid, insurance, other payments	3 Feed: D Dairy grains & concentrate O Other Feed	4 Machine hire	5 Truck, tractor, and other machine expense	6 Auto expense	7 Gasoline and oil	8 Breeding fees
		Total this month or to date brought forward*		32,500	68,900	5100	16,700	800	6300	2675
		H.M. Shell Corn	8000							
		Barn lime	400							
		4 heifers	3800							
		Used fertilizer spreader	500							
	10 T	15-15-15	1900							
		Nitrogen for semen tank	25							
		Blue Cross	875							
		Barbed wire	150							
		Tin for new shed	1500							
		Tractor overhaul	2000							
		Coop. Ext. dairy tour	900							
		Put "X's" in the columns								
		where the following belong:								
		Social Security deposit								
		Baler twine								
		Custom spraying								
Total for month (to page 74) or total to date					D O					

*Use only if it is desirable to accumulate total from previous page.

(A)

FARM OPERATING EXPENSES AND OTHER CASH OUTFLOW (continued)

9 Veterinary and medicine	10 Other livestock expense	11 Lime and fertilizer	12 Seeds and plants	13 Spray and other crop expense	14 Land, building, and fence repair	15 T Taxes I Insurance	16 E Electricity T Telephone	17 Miscellaneous R Rent O Other	18	19 Family living, non-farm draws	20 Payments on liabilities and capital purchases
4200	7500	1400	600	550	2950	4000 T	5800 E	5800 R		22,125	40,270
						5500 I	1700 T	950 O			
						T	E	R			
						I	T	O			

(A)

SUMMARY OF FARM OPERATING EXPENSES

	2 Labor	3D Dairy grains and concentrate	3O Other feed	4 Machine hire	5 Truck, tractor, and other machine expense	6 Auto expense	7 Gasoline and oil	8 Breeding fees	9 Veterinary and medicine
Monthly Totals									
January									
February									
March									
April									
May									
June									
July									
August									
September									
October									
November									
December									
Totals for year	32500 —	76900 —		5100 —	16,700 —	800 —	6300 —	2700 —	4200 —
Adjustments and Additions						Pers. share auto $400 —			
Less personal share of auto % pers. sh. 50 x $ 800 = 400									
Less personal share of electricity % pers. sh. ____ x $ ____ = ??									
Less personal share of telephone % pers. sh. ____ x $ ____ = 300									
Plus milk marketing expenses (p. 76) Hauling $ 4800 Promotion $ 2800 Coop. Dues $ ____ Total (to col. 18) 7600									
Plus farm supplies (p. 76)									
Plus compensation and employee health ins. (p. 76)	$								
Plus interest paid (pp. 70-72) 27,100									
Total Farm Operating Expenses (total cols. 2-18) $									

B

SUMMARY OF FARM OPERATING EXPENSES (continued)

10 Other livestock expense	11 Lime and fertilizer	12 Seeds and plants	13 Spray and other crop expense	14 Land, building, and fence repair	15 Taxes and insurance	16E Electricity	16T Telephone	17R Rent	17O Other, miscellaneous	18	19 Family living, non-farm draws	20 Payments on liabilities and capital purchases
B												
					4000 T							
7900 —	3300 —	600 —	550 —	3100 —	5500 I	5800 —	1700 —	5800 —	1850 —			
						Pers. share elec. $	Pers. share tel. $ 300 —					
					-400 T -600 I					Milk mktg. $ 7600		
Farm supplies $										Interest paid $ 27,100		
					3600 T							
7900 —	3300 —	600 —	550 —	3100 —	4900 I		1400 —	5800 —	1850 —	34,700 —		

CASE FARM - ACCRUAL EXPENSES[1]

	Cash Amount Paid +	Change in[2] Inventory or Prepaid expense +	Change in Accts. Pay. =	Accrual Expense
Hired labor	$_____	$_____	$_____	$_____
Feed: Dairy grain & concentrate	_____	- - - - - -	_____	_____
Dairy roughage	_____	- - - - - -	_____	_____
Nondairy feed	_____	- - - - - -	_____	_____
Machinery: Machine hire/rent/lease	_____	_____	_____	_____
Machinery repairs/parts	_____	- - - - - -	_____	_____
Auto expense (farm share)	_____	_____	_____	_____
Fuel, oil & grease	_____	- - - - - -	_____	_____
Livestock: Replacement livestock	_____	_____	_____	_____
Breeding	_____	- - - - - -	_____	_____
Veterinary & medicines	_____	- - - - - -	_____	_____
Milk marketing	_____	_____	_____	_____
Cattle lease/rent	_____	_____	_____	_____
Other livestock expense	_____	- - - - - -	_____	_____
Crops: Fertilizer & lime	_____	- - - - - -	_____	_____
Seeds & plants	_____	- - - - - -	_____	_____
Spray, other crop exp.	_____	- - - - - -	_____	_____
Real Estate: Land/bldg/fence rep.	_____	- - - - - -	_____	_____
Taxes	_____	_____	_____	_____
Rent & lease	_____	_____	_____	_____
Other operating: Insurance	_____	_____	_____	_____
Telephone (farm share)	_____	_____	_____	_____
Electric (farm share)	_____	_____	_____	_____
Interest	_____	_____	_____	_____
Miscellaneous	_____	- - - - - -	_____	_____
TOTAL OPERATING	$_____	$_____	$_____	$_____
Other: Expansion livestock	_____	_____	_____	_____
Stock and certificates purchased	_____	- - - - - -	_____	_____
Personal withdrawals & family expenditures	_____	- - - - - -	_____	_____

[1]The information for this worksheet can be found in the following PRO-DAIRY Financial Data Collection Workbook Columns: 100 (cash amount paid), 101 (prepaid expenses), 16, 19, 22, 25, 28, 31 (changes in inventories), and 99 (changes in accounts payable).

[2]The solid lines represent prepaid expenses; the broken lines, inventory changes.

ACTIVITY 5

Introduction to Accrual Accounting

Key Points:

1. Net cash income is ususally not a good measure of profit.

2. Farm production costs and returns include important non-cash changes and transactions.

3. Accrual accounting refers to a system which records the receipt of income and the charging of expenses when they occur rather than when cash changes hands. For example, when milk is shipped, accrual income is earned; when feed is consumed, an accrual expense is incurred.

4. Cash receipts and expenses provide the foundation of the income statement. Inclusion of cash and non-cash transactions is called accrual accounting. Accrual accounting includes cash receipts/expenses and additions and subtractions that must be made to the cash transactions so the income statement will reflect this year's value and cost of production.

5. We are not advocating use of accrual accounting for tax purposes. However, it is superior to cash accounting for use as a management tool.

Categorizing Non-Cash Receipts - Exercise

Match the receipts on the right with the categories on the left. Write the letter of the receipt on the lines next to the matching category.

Category

1 Appreciation: Change in prices (2 matches) ___ ___

2a Change in inventory: Increase in quantity (2 matches) ___ ___

2b Change in inventory: Increase in quality (2 matches) ___ ___

3a Change in accounts receivable: Current sales not received (1 match) ___

3b Change in accounts receivable: Prior years sales received (1 match) ___

Non-Cash Receipt

a. More hay/corn silage at the end of year.

b. Hay sold, no money received.

c. Increase in farm real estate prices.

d. Same amount but higher quality forage at end of year.

e. Increase in number of dairy cattle.

f. Milk sold in December, money received the following January.

g. Increase in genetic capability of young stock.

h. Increase in dairy replacement prices.

CASE FARM - GROWN FEED INVENTORY

Item	(Col. 14) Beginning of Year (January 1) Quantity	(Col. 15) Price Per Unit	(Col. 16) Total Value	(Col. 17) End of Year (December 31) Quantity	(Col. 18) Price Per Unit	(Col. 19) Total Value
Corn-HMSC		$	$		$	$
Corn-HMEC						
Corn-dry,						
Oats						
Wheat						
Other						
Dry hay	50 t.	70	3500	52 t.	70	3640
Hay crop silage	307 t.	26	7982	298 t.	29	8642
Corn silage	471 t.	27	12,717	677 t.	21	14,217
Other						
Total Grown Feeds			$ 24,199			$ 26,499

CASE FARM - PURCHASED FEED INVENTORY

Item	(Col. 20) Beginning of Year (January 1) Quantity	(Col. 21) Price Per Unit	(Col. 22) Total Value	(Col. 23) End of Year (December 31) Quantity	(Col. 24) Price Per Unit	(Col. 25) Total Value
Dairy grain & concentrate	20 t.	$ 275	$ 5500	22 t.	$ 277	$ 6100
H.M.S.C.	140 t.	85	11,900	180 t.	85	15,300
Total dairy grain & conc.			$ 17,400			$ 21,400
Dairy roughage						
Total dairy roughage			$			$
Nondairy feed			$			$

CASE FARM - SUPPLIES INVENTORY

Item	(Col. 26) Beginning of Year (January 1) Quantity	(Col. 27) Price Per Unit	(Col. 28) Total Value	(Col. 29) End of Year (December 31) Quantity	(Col. 30) Price Per Unit	(Col. 31) Total Value
Machine: Parts		$	$		$	$
Fuel, oil, grease						
Livestock: Semen	25 straws	20	500	20 straws	25	500
Vet. supplies						
Other supplies						
Crops: Fertilizer				5 tons	200	1000
Seeds	8 bu.	50	400			200
Pesticides & other			100			
Land/building/fence						
All Other						
Total supplies			$ 1000			$ 1700

CASE FARMER - LIVESTOCK INVENTORY

	(Col 32)	(Col 33)	(Col 34)	(Col 35)	(Col 36)	(Col 37)	(Col 38)	(Col 39)	(Col 40)
	January 1 Inventory			December 31 Inventory Using:					
					January 1 Prices		December 31 Prices		
Type	No.	Price Per Head	Total Value	Dec. 31 No.	Price Per Head	Total Value	Price Per Head	Total Value	Average Number for Year
Dairy cows	____	$____	$____	____	$____	$____	____	$____	____
Heifers:									
Bred	____	____	____	____	____	____	____	____	____
Open (6 mo.-bred)	____	____	____	____	____	____	____	____	____
Calves (< 6 mo.)	____	____	____	____	____	____	____	____	____
Bulls	____	____	____	____	____	____	____	____	____
Other livestock	____	____	____	____	____	____	____	____	____
Total livestock			$____			$____		$____	

CASE FARM - ACCRUAL RECEIPTS

Receipts	Cash Receipts	+ Change in Inventory	+ Change in Accounts Receivable	= Accrual Receipts
Milk	$234,080		$	$
Dairy cattle	20,360	$		
Dairy calves	4200			
Other livestock	0			
Crops	0			
Government receipts	2400			
Custom machine work	600			
Gas tax refund	320			
Other: rent $390				
misc. $130				
$				
Total Other →	520			
Total Farm Receipts	$262,480	$	$	$

CASE FARM - CHANGES IN OPERATING ACCOUNTS RECEIVABLE

(Col. 88)	(Col. 89)		(Col. 90)		(Col. 91)
Account Number or Description	Year End Balance (Dec. 31)	-	Beginning Balance (Jan. 1)	=	Change in Acct.Rec.
Milk receipts:	$ 20,391	-	$ 18,371	=	$ 2020
_____:	$_____	-	$_____	=	$_____
_____:	$_____	-	$_____	=	$_____
_____:	$_____	-	$_____	=	$_____
_____:	$_____	-	$_____	=	$_____
TOTAL:	$ 20,391	-	$ 18,371	=	$ 2020

equals ⟹ $ 2020

Allocation	(Col. 92)
Receipt Category	Change in Acct. Rec.
Milk	$ 2020
Dairy cattle	_____
Dairy calves	_____
Other livestock	_____
Crops	_____
Government receipts	_____
Custom machine work	_____
Gas tax refunds	_____
Other: _____	_____

CASE FARM - CHANGES IN OPERATING ACCOUNTS PAYABLE

(Col. 95) Account Number or Description	(Col. 96) Ending Balance (Dec. 31)	-	(Col. 97) Beginning Balance (Jan. 1)	=	(Col. 98) Change in Acct. Pay.
McVey Feed Mill:	$ 5000	-	$ 0	=	$ 5000
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
_____:	$	-	$	=	$
TOTAL:	$ 5000	-	$ 0	=	$ 5000

Allocation: Expense Category	(Col. 99) Change in Acct. Payable
Hired labor	$
Feed	
Dairy grain & conc.	5000
Dairy roughage	
Nondairy feed	
Machinery	
Mach. hire & lease	
Mach. repairs/parts	
Auto exp. (farm share)	
Fuel, oil & grease	
Livestock	
Replacement livestock	
Breeding	
Veterinary & med.	
Milk marketing	
Cattle lease	
Other livestock exp.	
Crops	
Fertilizer & lime	
Seeds & plants	
Spray, other crop exp.	
Real Estate	
Land, bldg., fence rep	
Taxes	
Rent & lease	
Other	
Insurance	
Telephone (farm share)	
Electric (farm share)	
Interest	
Miscellaneous	
Expansion livestock	

} ═══ equals ═══> $ 5000

CASE FARM - MACHINERY AND EQUIPMENT INVENTORY SUMMARY

	(Col. 12)		(Col. 13)
Beginning of Year Inventory (Jan. 1)	$ 78,100	End of Year Inventory (Dec. 31)	$ 82,400
Machinery and Equipment Purchased	+ 16,500		
Noncash Machinery Transfer to Farm	+		
Machinery and Equipment Sold or Destroyed	-		
Summary Year's Tax Depreciation	- 12,200		
Total Beginning Inventory After Changes			$ 82,400
Machinery Appreciation (ending less beginning after changes)			$ 0

CASE FARM - REAL ESTATE INVENTORY SUMMARY*

Market value of land and buildings:

Beginning of year (Jan. 1)	$ 200,000	
End of year (Dec. 31)		$ 204,000
Purchased land	+ $ 0	
Purchased bldgs. & land improvements	+ $ 3900	
Lost capital	- $ 1100	
Noncash real estate transfer to farm	+ $ 0	
Summary Year's Tax Depreciation (Include buildings in pre-ACRS, ACRS, MACRS, and ADS)	- $ 3500	
Real estate sold: beginning inventory value	- $ 0	
Total sale price $		
Sale expenses for real estate sold $		
Note/mortgage held by seller from real estate sold $		
Total beginning value after changes		$ 199,300

Real estate appreciation:

Assets owned at end of year (end - beginning after changes)	$ 4,700
Assets sold during the year (sale price - beginning of year value)	$

*The information on this worksheet can be found in Columns 43, 44, 46, 47, and 48 of the PRO-DAIRY Financial Data Collection Workbook.

Sample Farmer Livestock Inventory Exercise

Sample Farmer had 50 head of young stock valued at $30,500 at the beginning of the year. At the end of the year he still had 50 head of young stock and his total inventory value had increased to $36,000.

How much of an increase can be attributed to growth and herd improvement and how much to change in market prices?

A completed livestock inventory worksheet can provide the answers. At the beginning of the year, Sam had 10 bred heifers, 20 open yearlings, and 20 calves. At the end of the year he had 20 bred heifers that are younger and smaller than the 10 he had at the beginning of the year, but bred heifer prices have increased $100 during the year. The open yearlings did not change in quality or price during the year. The 10 calves in the year end inventory are older than last year's group. The increase in young stock value do to a change in the physical make up of the herd was $3500 while higher prices at the end of the year resulted in an increase due to appreciation of $2000.

	(Col 32)	(Col 33)	(Col 34)	(Col 35)	(Col 36)	(Col 37)	(Col 38)	(Col 39)	(Col 40)
	January 1 Inventory			December 31 Inventory Using:					
					January 1 Prices		December 31 Prices		
Type	No.	Price Per Head	Total Value	Dec. 31 No.	Price Per Head	Total Value	Price Per Head	Total Value	Average Number for Year
Heifers:									
Bred	10	$850	$8500	20	$800	$16,000	$900	$18,000	
Open (6 mo.-bred)	20	650	13,000	20	650	13,000	650	13,000	
Calves (< 6 mo.)	20	450	9000	10	500	5,000	500	5,000	
Total			$30,500			$34,000		$36,000	

ACTIVITY 6

Depreciation: A Cost of Using Capital

Key Points:

1. Machinery, buildings, and cattle must be replaced if asset values are to be maintained. This replacement cost occurs annually and must be included as a cost of production.

2. The annual replacement cost should represent the loss in asset value caused by wear, tear, and obsolescence. Price changes should be excluded.

3. Our goal is to determine economic depreciation or the actual loss in value caused by wear, tear, use, and obsolescence.

4. Although income tax depreciation is not always used to represent economic depreciation, it can be used as reasonable estimation if it falls within standard guidelines.

"Economic" Depreciation vs. Tax Depreciation Worksheet

Sample Farmer purchased a 20 X 60 cement silo in the year prior to the summary year. The initial cost of the silo (including foundation) was $21,000. At the same time, Sample Farmer also purchased an $7000 unloader. The useful life of the silo is 20 years and that of the unloader 10 years. Calculate the "economic" depreciation using the straight line method. Also calculate the tax depreciation using the straight line method.

ECONOMIC DEPRECIATION

	Silo	Unloader
Initial price	$21,000	$7,000
- Salvage value	$_____	$_____
= Depreciable value	$_____	$_____
÷ Useful life	_____ yrs.	_____ yrs.
= Annual (true, economic) depreciation	$_____	$_____

TAX DEPRECIATION

	Silo	Unloader
Cost	$21,000	$7,000
÷ Recovery period	15 yrs.	7 yrs. or 10 yrs.
= Tax depreciation	$_____	$_____ or $_____

Depreciation Summary for Case Farm

	Summary Year's Depreciation From Previous Acquisitions	Depreciation From Summary Year Additions	Totals
Machinery	$10,550	$1,650 (mixer wagon)	$12,200
Buildings	$ 3,240	$ 260 (tile & silo improvement)	$ 3,500
Livestock	$ 4,000	$ 0	$ 4,000
			$19,700

ACTIVITY 7

Net Farm Income Exercise

Key Points:

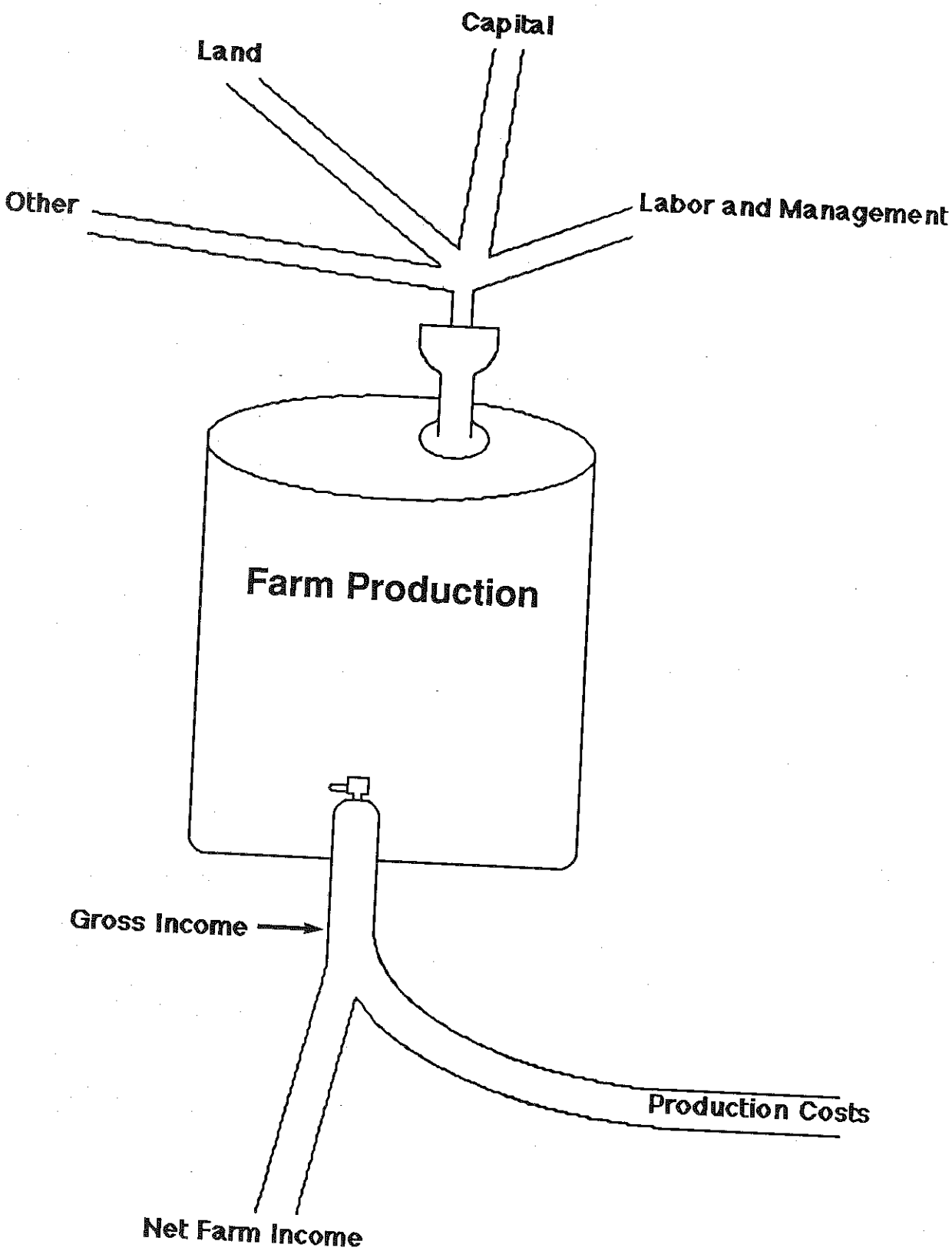
1. Net farm income is the first measure of profitability calculated by completing the farm earnings statement.

2. Net farm income measures the return the farm family gets for its farm resources.

3. We will calculate Case Farmer's net farm income. Accrual accounting has allowed us to include all the value and direct costs of farm production. Net farm income is the residue or amount left over.

Overhead II.7.1

Resources Used for Production



FARM NO. 36600

INCOME STATEMENT

EXPENSES	Cash Amount paid +	Change in Inventory or Prepaid Expense* +	Change in Accounts Payable** =	Accrual Expenses
Hired Labor	$ 32500	$ 0	$ 0	$ 32500
Feed				
Dairy grain & conc.	76900	-4000	5000	77900
Dairy roughage	0	0	0	0
Nondairy	0	0	0	0
Machinery				
Mach hire, rent/lease	5100	0	0	5100
Machinery repairs/parts	16700	0	0	16700
Auto expense (f.s.)	400	0	0	400
Fuel, oil & grease	6300	0	0	6300
Livestock				
Replacement livestock	3800	0	0	3800
Breeding	2700	0	0	2700
Veterinary & medicine	4200	0	0	4200
Milk marketing	7600	0	0	7600
Cattle lease/rent	0	0	0	0
Other livestock expense	7900	0	0	7900
Crops				
Fertilizer & lime	3300	-1000	0	2300
Seeds & plants	600	200	0	800
Spray, other crop exp.	550	100	0	650
Real Estate				
Land/bldg/fence repair	3100	0	0	3100
Taxes	3600	0	0	3600
Rent & lease	5800	-200	0	5600
Other				
Insurance	4900	0	0	4900
Telephone (farm share)	1400	0	0	1400
Electricity (farm share)	4800	0	0	4800
Interest paid	27100	0	0	27100
Miscellaneous	1850	0	0	1850
TOTAL OPERATING	$ 221100	$ -4900	$ 5000	$ 221200
Expansion livestock	$ 3800	$ 0	$ 0	$ 3800
Machinery depreciation				$ 12200
Building depreciation				$ 3500
TOTAL ACCRUAL EXPENSES				$ 240700

*Changes in inventory include net amounts of items used out of purchased inventory this year (positive change is amt. inventory declined, negative change is amt. inventory increased). Changes in prepaid expenses apply to non-inventory categories (positive change is amt. pre-pymt. declined.)

**Unpaid items or services used or added to inventory during the year.

FARM NO. 36600

INCOME STATEMENT (continued)

RECEIPTS	Cash Receipts	+ Change in Inventory*	+ Change in Accounts Receivable	= Accrual Receipts
Milk sales	$ 234080		$ 2020	$ 236100
Dairy cattle	20360	$ 4600	0	24960
Dairy calves	4200		0	4200
Other livestock	0	0	0	0
Crops	0	2300	0	2300
Gov't receipts	2400	0**	0	2400
Custom machine work	600		0	600
Gas tax refund	320		0	320
Other	520		0	520
TOTAL ACCRUAL RECEIPTS	$ 262480	$ 6900	$ 2020	$ 271400

*Change in lvstk inv. w/o apprec. & total change in grown feeds inv.
**Change in advanced government receipts.

Case Farm - Net Farm Income

RETURN TO OPERATOR(S) & FAMILY LABOR UNPAID, MGMT., & EQUITY CAPITAL:	Without Appreciation	+	Appreci-ation	=	With Apprec.
Total Accrual Receipts	$_____				
Livestock Appreciation			$ 1550		
Machinery Appreciation			0		
Real Estate Appreciation			4700		
Other Stock/Cert. Appreciation			0		
Total Accrual Receipts with Appreciation					$_____
- Total Accrual Expenses	$_____				$_____
= **NET FARM INCOME**	$_____				$_____

ACTIVITY 8

Own Farm Income Statement Exercise

Key Points:

1. This activity will allow you to apply your skills by beginning to develop your own farm income statement.

2. You may have some difficulty classifying and categorizing farm expenses and receipts. Let one of the teaching team know - we're here to help.

3. Some important information may be missing. By beginning to work on your income statement, you will find out what additional data you need to gather.

4. Completion of the income statement will be part of your homework assignment.

OWN FARM - ACCRUAL EXPENSES[1]

	Cash Amount Paid	+	Change in[2] Inventory or Prepaid expense	+	Change in Accts. Pay.	=	Accrual Expense
Hired labor	$		$		$		$
Feed: Dairy grain & concentrate							
Dairy roughage							
Nondairy feed							
Machinery: Machine hire/rent/lease							
Machinery repairs/parts							
Auto expense (farm share)							
Fuel, oil & grease							
Livestock: Replacement livestock							
Breeding							
Veterinary & medicines							
Milk marketing							
Cattle lease/rent							
Other livestock expense							
Crops: Fertilizer & lime							
Seeds & plants							
Spray, other crop exp.							
Real Estate: Land/bldg/fence rep.							
Taxes							
Rent & lease							
Other operating: Insurance							
Telephone (farm share)							
Electric (farm share)							
Interest							
Miscellaneous							
TOTAL OPERATING	$		$		$		$
Other: Expansion livestock							
Stock and certificates purchased							
Personal withdrawals & family expenditures							

[1]The information for this worksheet can be found in the following PRO-DAIRY Financial Data Collection Workbook Columns: 100 (cash amount paid), 101 (prepaid expenses), 16, 19, 22, 25, 28, 31 (changes in inventories), and 99 (changes in accounts payable).

[2]The solid lines represent prepaid expenses; the broken lines, inventory changes.

OWN FARM - ACCRUAL RECEIPTS[1]

Receipts	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk	$_____				$_____		$_____
Dairy cattle	_____		$_____		_____		_____
Dairy calves	_____				_____		_____
Other livestock	_____		_____		_____		_____
Crops	_____		_____		_____		_____
Government receipts	_____		_____		_____		_____
Custom machine work	_____				_____		_____
Gas tax refund	_____				_____		_____
Other: _____ $_____							
_____ $_____							
_____ $_____							
Total Other →	_____				_____		_____
Total Farm Receipts	$_____		$_____		$_____		$_____

[1]The information for this worksheet can be found in the following PRO-DAIRY Financial Data Collection Workbook Columns: 94 (cash receipts), 34, 39, 16, 19, 77, 78 (changes in inventories), and 92 (changes in accounts receivable).

OWN FARM - MACHINERY AND EQUIPMENT INVENTORY SUMMARY

	(Col. 12)		(Col. 13)
Beginning of Year Inventory (Jan. 1)	$_____	End of Year Inventory (Dec. 31)	$_____
Machinery and Equipment Purchased	+_____		
Noncash Machinery Transfer to Farm	+_____		
Machinery and Equipment Sold or Destroyed	-_____		
Summary Year Tax Depreciation	-_____		
Total Beginning Inventory After Changes	→		$_____
Machinery Appreciation (ending less beginning after changes)			$_____

OWN FARM - REAL ESTATE INVENTORY SUMMARY*

Market value of land and buildings:			
Beginning of year (Jan. 1)		$_____	
End of year (Dec. 31)			$_____
Purchased land		+ $_____	
Purchased bldgs. & land improvements		+ $_____	
Lost capital		- $_____	
Noncash real estate transfer to farm		+ $_____	
Summary year depreciation (Include buildings in pre-ACRS, ACRS, MACRS, and ADS)		- $_____	
Real estate sold: beginning inventory value		- $_____	
Total sale price	$_____		
Sale expenses for real estate sold	$_____		
Note/mortgage held by seller from real estate sold	$_____		
Total beginning value after changes			$_____
Real estate appreciation: Assets owned at end of year (end - beginning after changes)			$_____
Assets sold during the year (sale price - beginning of year value)			$_____

*The information on this worksheet can be found in Columns 43, 44, 46, 47, and 48 of the PRO-DAIRY Financial Data Collection Workbook.

OWN FARM - NET FARM INCOME

	Without Appreciation	+	Appreci-ation	=	With Apprec.
RETURN TO OPERATOR(S) & FAMILY LABOR UNPAID, MGMT., & EQUITY CAPITAL:					
Total Accrual Receipts	$_____				
Livestock Appreciation			$_____		
Machinery Appreciation			$_____		
Real Estate Appreciation			$_____		
Other Stock/Cert. Appreciation			$_____		
Total Accrual Receipts with Appreciation					$_____
- Total Accrual Expenses	$_____				$_____
= **NET FARM INCOME**	$_____				$_____

ACTIVITY 9

Assignment of Homework and Wrap-Up

Key Points:

1. Completion of the homework assigned is an essential part of the workshop. It will be used during the third session as well as being necessary for completion of a farm business summary.

2. The homework assignment is to collect and record in the workbook the following information: (1) land inventory, (2) tillable land use, (3) breakdown of crop expenses, (4) new borrowings during summary year, (5) debt payments planned during the current year, and (6) nonfarm cash income and expenses. In addition to homework in the workbook, you should complete the "Own Farm Cash Flow Information" sheet on page 47.

3. Before leaving today's workshop, please complete the "Session II" portion of the feedback sheets located at the end of the Day IV materials (Managing with Finance-IV, pages 43-44).

Homework Assignment

Complete stage 3 of data collection:

1. Additional data needed to complete income statement

2. Land inventory

3. Tillable land use

4. Breakdown of crop expenses

5. New borrowings during summary year

6. Debt payments planned during current year

7. Nonfarm cash income and expenses

8. Complete summary year column of "OWN FARM CASH FLOW INFORMATION" worksheet

OWN FARM CASH FLOW INFORMATION

Item	Summary Year Amount	Projected Current Year Amount
Cash farm receipts *(Col. 94)*	$	$
Cash farm expenses (not incl. int.) *(Col. 100)*		
Interest expense *(Col. 100)*		
New farm machinery purchases *(Col. 12)*		
New farm real estate purchases *(Col 43)*		
Expansion livestock purchased *(Col 100)*		
Beginning cash balances *(Col. 65)*		
Ending cash balances *(Col. 66)*		
Intermed.-long term money borrowed *(Col. 70)*		
Short term money borrowed *(Col. 70)*		
Change in operating debt (+ or -) *(Col. 78 - Col. 77)*		
Sale of machinery *(Col. 10)*		
Sale of real estate property *(Col. 46)*		
Nonfarm income *(Col. 94)*		
Nonfarm money borrowed *(Col. 94)*		
Sale of nonfarm capital assets		
Purchase of other capital assets		
Inter.-long term principal repaid *(Col. 72)*		
Short term principal repaid *(Col. 72)*		
Family living draw or expenditures *(Col. 100)*		
Nonfarm principal repaid *(Col. 80)*		
Change in accounts payable *(Col. 99)*		

*Only the first column, "Summary Year Amount", need be completed prior to Session III. The "Projected" column will be completed during Session III activities. Column numbers indicate where the information is located in the PRO-DAIRY Financial Data Collection Workbook.

Managing with Finance: Session III[1]

CASH FLOW ANALYSIS

	Activity	Page No.
1	Warm-up and Homework Review	2
2	Understanding Cash Flow	4
3	A Simple Cash Flow Example: Joe Farmer	6
4	The Cash Flow Statement	9
5	Managing Cash Flow	12
6	Projecting Cash Flows: Case Farm	13
7	Buying a Machine on Credit	14
8	Calculating and Projecting Own Farm Cash Flows	16
9	Homework Assignment and Wrap-Up	19

[1]Prepared by John Brake, W.I. Myers Professor of Ag
Finance.

ACTIVITY 1

Warm-up and Homework Review

Key Points:

1. We will try to answer questions which you have regarding completion of the income statement homework. Please hold questions related to cash flow until later in the session.
2. To help you "internalize" what we covered in the last session, we will briefly review the important income statement concepts as we answer questions.
3. In this session, the transition will be made from the income statement to cash flow.
4. The goals of today's program are listed on page 3.

Overhead-III.1.1

TODAY'S GOALS

By the end of today's session, you, the participating dairy farm manager, will

1. **Recognize the importance and usefulness of a cash flow statement.**

2. **Learn and apply the basic concepts of cash flow analysis and management.**

ACTIVITY 2

Understanding Cash Flow

Key points:

1. Cash commitments must be met for a business to continue to exist.

2. Cash flow does not reflect profitability nor net worth changes.

3. A cash flow statement summarizes all cash transactions for a period of time.

4. Differences between the cash flow statement and profit/loss (income) statement are as follows:

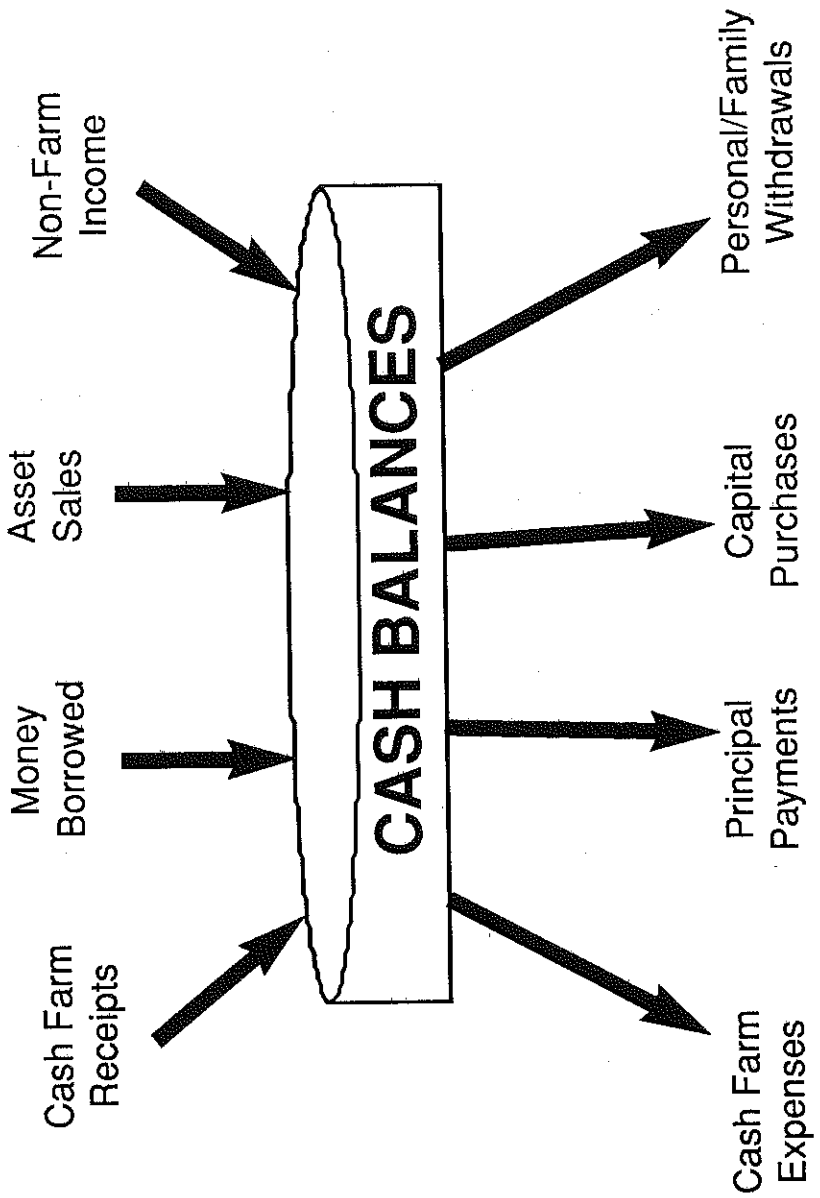
Income Statement	Cash Flow Statement
Depreciation	New capital purchases
Change in inventory	Asset sales
	Family living expenses
	Money borrowed during year
	Debt repaid during the period
	Nonfarm cash income, expenses or capital purchases

5. Profitability compares value of production to costs of production; cash flows include all cash transactions of the business or family.

6. Cash flow management is like managing a water reservoir.

Overhead-III.2.1

The Cash Flow Reservoir



ACTIVITY 3

A Simple Cash Flow Example--A Day in the Life of Joe Farmer

Key points:

1. Pocket cash and checking account are considered as cash.

2. Both business and nonbusiness cash transactions are included.

3. Noncash transactions, depreciation, inventory change, and change in accounts are not included.

4. Consider a very simple example. This is a one-day cash flow analysis. Joe Farmer starts the day with $70 in his wallet and $3,000 in his checkbook. (That is, cash on hand is $3,070.) During the day Joe went into town and made a number of transactions. Complete Joe Farmer's Cash Flow - Exercise on page 7.

Joe Farmer's Cash Flow - Exercise

Enter the amount of the transactions which affect Joe's daily cash flow in the appropriate column. Include a positive or negative sign to indicate whether the transaction should be added or subtracted from the start-of-day balances. Sum the columns and calculate Joe's end-of-day balances.

Transaction	Pocket Cash		Checking		Total
Balance start of day	$70	+	$3000	=	$3070
	(+ or -)		(+ or -)		
1) Paid $450 by check on machinery repair account	$_____		$_____		
2) Purchased new 22" lawn mower for $250 by check	_____		_____		
3) Bought groceries for Mrs. Farmer for $22 cash	_____		_____		
4) Bought several bolts at farm store paying $9 cash	_____		_____		
5) Deposited a $220 check received in today's mail for hay sold	_____		_____		
In the mean time,					
6) Joe's cows ate $200 worth of feed that was on hand	_____		_____		
7) His farm machinery depreciated in value by $36	_____		_____		
8) The day's mail included a diesel fuel bill for $240	_____		_____		
Balance end of day	_____	+	_____	=	$_____

Below is another way of summarizing Joe's cash flow:

	Pocket Cash		Checking		Total
Start of day:	$70.00	+	$3,000.00	=	$3,070.00
Cash in			$220.00 *(check deposited)*	=	$220.00
Farm expenses	$9.00 *(bolts)*	+	$450.00 *(mach. repair)*	=	$459.00
Family exp.	$22.00 *(groceries)*	+	$250.00 *(lawn mower)*	=	$272.00
Net change	-$31.00	-	$480.00	=	-$511.00
End of day:	$39.00	+	$2,520.00	=	$2,559.00

We've described only what happened in cash transactions. Cash balance was decreased by both farm and nonfarm cash transactions. We did not include depreciation, bills received, changes in inventory, profitability, or net worth changes. A capital item was purchased for the family, and inventory was sold for cash. The consequences for profitability or net worth were ignored. The reservoir of cash was drawn down. Joe knows where it went, but as long as the balance was positive there is not much more that needs to be done at this point. On the other hand, if Joe knew a major debt payment of $4,000 was due tomorrow, given his cash balance and knowing there was no incoming cash to help supply the money, he would have a problem. He'd have to make arrangements to supplement cash sources - perhaps through borrowing.

ACTIVITY 4

The Cash Flow Statement

Key points:

1. A cash flow summary will be prepared for the case farm using information provided.

2. Consider whether one checkbook or more than one must be examined.

3. Separate interest expense from principal repayment.

4. Recognize and obtain information that is not on usual farm records: principal repayment, new money borrowed, family living expenses (or draw), capital expenditures, asset sales, operator-family social security and income tax payments, and nonfarm income of operator or spouse.

5. Consider accounts payable as a form of debt. Note whether accounts are increasing or decreasing or a potential problem.

6. Depreciation and inventory changes are not used in a cash summary.

CASE FARM CASH FLOW INFORMATION

Item	Summary Year Amount	Projected Current Year Amount
Cash farm receipts	$ 262,480	$_____
Cash farm expenses (incl. int.)	221,100	_____
Interest expense	27,100	_____
New farm machinery purchases	16,500	_____
New farm real estate purchases	3,900	_____
Change in farm inventory	2,000*	_____
Expansion livestock purchased	3,800	_____
Beginning cash balances	4,700	_____
Ending cash balances	4,800	_____
Intermed.-long term money borrowed	18,700	_____
Short term money borrowed	0	_____
Change in operating debt (+ or -)	-850	_____
Sale of machinery	0	_____
Sale of real estate property	0	_____
Building depreciation	3,500*	_____
Nonfarm income	0	_____
Nonfarm money borrowed	0	_____
Sale of nonfarm capital assets	10,000	_____
Machinery depreciation	12,200*	_____
Purchase of other capital assets	0	_____
Inter.-long term principal repaid	23,870	_____
Short term debt repaid	0	_____
Family living draw or expenditures	21,500	_____
Nonfarm debt repaid	0	_____
Change in accounts payable	5,000*	_____

*Consider carefully whether these are cash flow items!

CASE FARM - ANNUAL CASH FLOW STATEMENT

Item		Case Farm Summary Year	(Projected) Case Farm Current Year
Cash Inflows			
Begin. bal. (cash, checking, savings)		$_____	$_____
Cash farm receipts		_____	_____
Asset sales:	Machinery	_____	_____
	Real estate	_____	_____
	Other (stock, etc.)	_____	_____
Money borrowed (intermed. & long term)		_____	_____
Money borrowed (short term)		_____	_____
Increase in operating debt		_____	_____
Nonfarm income		_____	_____
Cash from sale of nonfarm assets		_____	_____
Money borrowed - nonfarm		_____	_____
Total		$_____	$_____
Cash Outflows			
Cash farm expenses		$_____	$_____
Capital purchases:	Expansion livestock	_____	_____
	Machinery	_____	_____
	Real estate	_____	_____
	Other (stock, etc.)	_____	_____
Principal pmts. (intermed. & long term)		_____	_____
Principal payments (short term)		_____	_____
Decrease in operating debt		_____	_____
Nonfarm debt payments		_____	_____
Personal withdrawals/family expends.		_____	_____
Ending bal. (cash, checking, savings)		_____	_____
Total		$_____	$_____
Imbalance (error)		$_____	$_____

ACTIVITY 5

Managing Cash Flow

Key points:

1. Cash inflows must equal cash outflows. We will discuss the types of errors to consider when our records are inaccurate and an imbalance is calculated.

2. Debt is the major means of cash flow management. Changing repayment rate or borrowing new money are two ways to use debt for cash flow management. An account payable is a way of borrowing money.

3. Consider how adjustment of each item in the cash flow statement affects cash flows and how that item might be managed (i.e. how it could be affected by management decisions).

ACTIVITY 6

Projecting Cash Flows: Case Farm

Key points:

1. By projecting cash flows for the case farm in the current year, we will learn the process for your own farm cash flow as well as how to evaluate projections for potential cash flow problems.

2. Start with last year's cash flow and project the coming year by making adjustments for price changes, production changes, debt service changes, new capital purchases, and family expenses (draws) changes.

3. Evaluate whether new debt is needed or whether changes are needed in the terms of present debt.

4. Compare expected new capital purchases with depreciation to see whether business capital is being maintained.

5. Note whether accounts payable must be paid down.

6. Consider where excess funds might be invested if they were available. (Debt payment, family living, new capital, savings.)

ACTIVITY 7

Buying a Machine on Credit

Key points:

1. A capital purchase implies a cash flow commitment.

2. If there is not adequate cash flow to meet the commitment, debt is used to reduce drain on current cash flow.

3. The debt becomes a future year's cash flow commitment.

4. Need to manage total debt commitment per year depending on other cash flow characteristics of the business or family.

5. Questions to ask:

   a. Am I trying to repay debt too fast?

   b. Am I maintaining the capital position of my business?

   (Over time, average capital expenditures should be equal to or more than depreciation.)

Buying a Capital Item on Credit

Activity 7 Case Example

I. Cash flow management--buying a machine on credit.

A. Suppose the case farm needs a $30,000 capital asset--tractor, harvester, etc.

B. Can business support an expenditure of $30,000 next year? If not, use borrowing to spread cash needs over several years. For example, $5,000 down and 5 years to pay at 10% interest means:

1. $5,000 cash outlay the first year.

2. $6,595 per year each year for the next 5 years.

3. Trade-off is less cash this year but commit cash in future years.

Payment (P+i) per year Given Various Interest Rates and Years for Repayment, $10,000 Loan

Interest Rate	Years Taken to Repay the Loan				
	3	5	7	10	20
9%	$3950	$2571	$1987	$1558	$1095
10%	$4021	$2638	$2054	$1627	$1175
11%	$4092	$2706	$2122	$1698	$1256
12%	$4163	$2774	$2191	$1770	$1339
13%	$4235	$2843	$2261	$1843	$1424

Example: $5000 down leaves $25,000 debt. Multiply 2.5 ($25,000/$10,000=2.5) times $2638 = $6595 annual payment.

ACTIVITY 8

Calculating and Projecting Own Farm Cash Flows

Key points:

1. This activity will give you opportunity to put together a cash flow statement for your business for the past year and to project cash flows for your business for the current year. The intent is both to reinforce understandings gained from the case example and to apply the tools to your own farm situation.

2. Recognize need for financial data which is a part of usual financial records as well as some that is not.

3. Understand how to build on previous year cash flow statement to project coming year.

4. Evaluate the need for new debt or restructuring of present debt due to cash flow situation.

5. Understand the meaning of cash flow coverage ratio and amount available for debt service for own situation.

6. Recognize potential problems or opportunities requiring management of cash flows.

OWN FARM CASH FLOW INFORMATION

Item	Summary Summary Year Amount	Projected Current Year Amount
Cash farm receipts *(Col. 94)*	$_____	$_____
Cash farm expenses (not incl. int.) *(Col. 100)*	_____	_____
Interest expense *(Col. 100)*	_____	_____
New farm machinery purchases *(Col. 12)*	_____	_____
New farm real estate purchases *(Col 43)*	_____	_____
Expansion livestock purchased *(Col 100)*	_____	_____
Beginning cash balances *(Col. 65)*	_____	_____
Ending cash balances *(Col. 66)*	_____	_____
Intermed.-long term money borrowed *(Col. 70)*	_____	_____
Short term money borrowed *(Col. 70)*	_____	_____
Change in operating debt (+ or -) *(Col. 78 - Col. 77)*	_____	_____
Sale of machinery *(Col. 10)*	_____	_____
Sale of real estate property *(Col. 46)*	_____	_____
Nonfarm income *(Col. 94)*	_____	_____
Nonfarm money borrowed *(Col. 94)*	_____	_____
Sale of nonfarm capital assets	_____	_____
Purchase of other capital assets	_____	_____
Inter.-long term principal repaid *(Col. 72)*	_____	_____
Short term principal repaid *(Col. 72)*	_____	_____
Family living draw or expenditures *(Col. 100)*	_____	_____
Nonfarm principal repaid *(Col. 80)*	_____	_____

*Only the first column, "Summary Year Amount", need be completed prior to Session III. The "Projected" column will be completed during Session III activities. Column numbers indicate where the information is located in the PRO-DAIRY Financial Data Collection Workbook.

ANNUAL CASH FLOW STATEMENT - OWN FARM

Farm of _____ Year _____

Item	Own Farm Summary Year	(Projected) Own Farm Current Year
Cash Inflows		
Begin. bal. (cash, checking, savings)	$_____	$_____
Cash farm receipts	_____	_____
Asset sales: Machinery	_____	_____
Real estate	_____	_____
Other (stock, etc.)	_____	_____
Money borrowed (intermed. & long term)	_____	_____
Money borrowed (short term)	_____	_____
Increase in operating debt	_____	_____
Nonfarm income	_____	_____
Cash from sale of nonfarm assets	_____	_____
Money borrowed - nonfarm	_____	_____
Total	$_____	$_____
Cash Outflows		
Cash farm expenses	$_____	$_____
Capital purchases: Expansion livestock	_____	_____
Machinery	_____	_____
Real estate	_____	_____
Other (stock, etc.)	_____	_____
Principal pmts. (intermed. & long term)	_____	_____
Principal payments (short term)	_____	_____
Decrease in operating debt	_____	_____
Nonfarm debt payments	_____	_____
Personal withdrawals/family expends.	_____	_____
Ending bal. (cash, checking, savings)	_____	_____
Total	$_____	$_____
Imbalance (error)	$_____	$_____

ACTIVITY 9

Assignment of Homework and Wrap-Up

Key Points:

1. The only required "homework" is to assure that the teaching team has all of the information required to complete a summary.

2. We will be contacting you if there is missing information needed for a summary. However, please call us if you know what is missing and have the additional information.

3. Please fill out the "Session III" portion of the feedback sheets. Feedback sheets are located at the end of the Day IV materials (Managing with Finance-IV, pages 35-39).

Overhead-III.9.1

Homework Assignment

Make sure that the teaching team has all the information needed to complete your Dairy Farm Business Summary.

Managing with Finance: Session IV

	Activity	Page No.
1	Warm-Up and Agenda Sharing	2
2	Measuring Profitability	5
3	Own Farm Profitability Analysis	10
4	Reading and Analyzing Your Balance Sheet	14
5	Reading and Evaluating Your Cash Flow Statement and Repayment Analysis	16
6	Relationships Among Financial Statements	17
7	Using the Farm Business Charts	19
8	Identifying Opportunities for Improvement	26
9	Setting Financial Goals for Your Farm	29
10	Tactical Planning	31
11	Wrap-Up and Course Feedback	34

ACTIVITY 1

Warm-Up and Agenda Sharing

Key Points:

1. This opening exercise may give you more of an understanding of the need for profitability analysis.

2. Net farm income or its equivalent in a nonfarm business does not provide the necessary information to evaluate the profitability of the business.

3. Net farm income or its equivalent in a nonfarm business is the return to several owner/operator/manager inputs.

4. The goal's for today's program are listed on page 4.

UNDERSTANDING PROFITABILITY EXERCISE

A teenage boy has been earning money by mowing lawns in the neighborhood. He is considering two options for acquiring access to a lawn mower for the three lawns he is mowing this coming year:

A. He can rent the lawn mower from his parents for $50.00. The rent includes all operating costs.

B. He can use $300.00 from his savings account which is earning 5% interest to buy a lawn mower. In this situation he estimates operating costs including repairs will be $40.00 and that he will use the lawn mower two years before selling it for approximately $100.00.

C. His expected income of $600.00 a year is independent of the decision.

QUESTIONS

1. This boy is really operating a business. How does his contribution to the business change if he decides on option B?

2. What is the boy's return to his inputs (net farm income in our terminology) in option A? Is there any question about the return to the boy for his labor and management?

3. What is the boy's return to his inputs in option B? Is there question about the return to the boy for his labor and management?

4. Is the selection of an option clear cut? Discuss what you would need to consider in making a decision between the two options.

5. What inputs do you provide to your farm business?

Overhead-IV.1.1

TODAY'S GOALS

By the end of today's session, you, the participating dairy farm manager, will

1. **Learn and apply the basic concepts of profitability analysis.**

2. **Apply financial analysis skills in evaluating your farm financial statements.**

3. **Set financially quantified goals for your farm business in 1990.**

ACTIVITY 2

Measuring Profitability

Key Points:

1. Profitability can be measured as the return to one or more of the inputs provided by the farm owner/manager and his/her family: labor, management, equity capital, and unpaid family labor.

2. The source of the returns or "value of production" may be cash farm receipts, increases in inventory, increases in accounts receivable, and appreciation. The first three of these (cash farm receipts, increases in inventory, and increases in accounts receivable) may be grouped together as accrual receipts.

3. There are many different measures of profitability.

4. Net farm income can be calculated with the most "certainty," however, it is not very useful for comparison with other farms or for examining the progress of the farm business. Other measures of profitability are more useful for comparison, but require imputing opportunity cost to one or more of the sources of returns. Thus, it is beneficial to examine several different measures of profitability.

5. Key measures of profitability to be covered are labor and management income, labor and management income per operator, rate of return on equity with appreciation, and rate of return on equity without appreciation.

PROFITABILITY MEASURE EXERCISE

Draw boxes around the owner/operator inputs and source of returns included in each profitability measure. Net Farm Income without Appreciation has been completed as an example.

Owner/Operator Inputs:	Source of returns:	Profitability Measure
Labor Management Equity capital Unpaid family labor	Farm business activity Asset appreciation	Net Farm Income Without Appreciation
Labor Management Equity capital Unpaid family labor	Farm business activity Asset appreciation	Return to Operator's Labor Management and Equity
Labor Management Equity capital Unpaid family labor	Farm business activity Asset appreciation	Labor and Management Income
Labor Management Equity capital Unpaid family labor	Farm business activity Asset appreciation	Rate of Return to Equity Capital without Appreciation
Labor Management Equity capital Unpaid family labor	Farm business activity Asset appreciation	Rate of Return to Equity Capital with Appreciation

CASE FARM PROFITABILITY INFORMATION

Total accrual receipts:	$271,400
Total accrual expenses:	$240,700
Unpaid family labor:	0
Equity capital:	$210,634
Appreciation:	$ 6,250
Value of operator's labor and management:	$ 20,000
Interest paid:	$ 27,100

==========

Case Farm - Net Farm Income

	Total accrual receipts		$271,400
-	Total accrual expenses	-	$240,700
=	**Net Farm Income** (without appreciation)	=	$ 30,700
+	Appreciation	+	$ 6,250
=	**Net Farm Income** (with appreciation)	=	$ 36,950

CASE FARM PROFITABILITY WORKSHEET 1

Return to Labor, Management, and Equity measures the total business profits for the farm operators. It is calculated by deducting a charge for unpaid family labor from Net Farm Income. Operator(s') labor is not included in unpaid family labor.

Return to Labor, Management, and Equity on **CASE FARM:**

	With Appreciation	Without Appreciation
Net Farm Income	_____	_____
- Unpaid family labor	_____	_____
= Return to Operators' Labor, Management, and Equity	_____	_____

Labor and Management Income is the share of Net Farm Income returned to the operator(s') labor and management. Labor and management income is determined by deducting the cost of using equity capital at a real rate of interest (5%) from the return to operator(s') labor, management, and equity capital excluding appreciation.

Labor and Management Income on **CASE FARM:**

Return to Operators' Labor, Management, and Equity Excluding Appreciation	_____
- Real interest @ 5% on _____ equity capital	_____
= Labor and Management Income	_____
÷ Number of Operators	_____
= Labor and Management Income per Operator	_____

CASE FARM PROFITABILITY WORKSHEET 2

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

Return on Equity Capital on **CASE FARM:**

Return to operator(s') labor, management, & equity capital with appreciation	_____
- Opportunity cost for operators' labor and management	_____
= Return on equity capital with appreciation	_____
- Appreciation	_____
= Return on equity capital with out appreciation	_____

- -

Return on equity capital without appreciation	_____
÷ Average farm net worth or equity capital	_____
X 100	
= Rate of return on equity capital without appreciation	_____%

- -

Return on equity capital with appreciation	_____
÷ Average farm net worth or equity capital	_____
X 100	
= Rate of return on equity capital with appreciation	_____%

ACTIVITY 3

Own Farm Profitability Analysis

Key Points:

1. It is more important to examine the implications of the profitability measures for your own farm than to compare your profitability to that of other farmers.

2. Comparison of own farm profitability measures with goals for the year and with profitability measures from previous years provides crucial feedback on the success of general management.

3. Own farm profitability measures provide a basis for comparison of your farms success with your own opportunity costs and industry standards.

4. Profits are the return to the inputs provided by the farm manager and his/her family.

   a. Hired labor's return is cash wages plus the value of perquisites (such as housing, health insurance, milk, meat, etc.).

   b. Farm owner/manager's return is "profits" which are the residual (what's left over!) after all other expenses have been paid.

5. Sources of returns - "What's earning the money?"

   a. Farm business activity: Accrual receipts minus accrual expenses (net farm income without appreciation).

   b. Appreciation: A change in asset values due to external price changes.

6. Opportunity cost

   a. The value of a resource in its next best alternative use.

   b. The amount of return you give up by not using your resource somewhere else.

   c. Opportunity costs are not money payments but sacrificed alternatives.

Profitability Comparison

	Prior Year New York Average	Prior Year N.Y. Similar Size	Own Opportunity Cost	Summary Year **Own Farm** Estimate	Summary Year **Own Farm** Actual
Net farm income	_____	_____	XXXXXXXXXX	_____	_____
Labor and management income/farm	_____	_____	XXXXXXXXXX	_____	_____
Labor and management income/operator	_____	_____	_____	_____	_____
Rate of return on equity without appreciation	_____	_____	5.0%	_____	_____
Rate of return on equity with appreciation	_____	_____	_____	_____	_____

OWN FARM PROFITABILITY WORKSHEET 1

Return to Labor, Management, and Equity measures the total business profits for the farm operators. It is calculated by deducting a charge for _____ from Net Farm Income. _____ labor is not included in unpaid family labor.

Return to Labor, Management, and Equity on **MY FARM:**

	With Appreciation	Without Appreciation
Net Farm Income	_____	_____
- Unpaid family labor	_____	_____
= Return to Operators' Labor, Management, and Equity	_____	_____

Labor and Management Income is the share of Net Farm Income without _____ returned to the operator(s') labor and management. Labor and management income is determined by deducting the cost of using _____ _____ at a real rate of interest (5%) from the return to operator(s') _____, _____, and _____ _____ excluding appreciation.

Labor and Management Income on **MY FARM:**

Return to Operators' Labor, Management, and Equity Excluding Appreciation	_____
- Real interest @ 5% on _____ equity capital	_____
= Labor and Management Income	_____
÷ Number of Operators	_____
= Labor and Management Income per Operator	_____

OWN FARM PROFITABILITY WORKSHEET 2

Return on Equity Capital measures net return remaining for the farmer's _____ or owned capital after a charge has been made for the owner-operator(s') _____ and _____. The earnings or amount of net farm income allocated to labor and management is the _____ cost or value of operator(s') labor and _____ estimated by the participant. Return on equity capital is calculated with and without _____. The rate of return on equity capital is calculated by _____ the amount returned by the average farm _____ _____ or _____ capital.

Return on Equity Capital on **MY FARM:**

Return to operator(s') labor, management, & equity capital with appreciation	_____
- Value of operators' labor and management	_____
= Return on equity capital with appreciation	_____
- Appreciation	_____
= Return on equity capital with out appreciation	_____

- -

Return on equity capital with appreciation	_____
÷ Average farm net worth or equity capital	_____
= Rate of return on equity capital with appreciation	_____

- -

Return on equity capital without appreciation	_____
÷ Average farm net worth or equity capital	_____
= Rate of return on equity capital without appreciation	_____

ACTIVITY 4

Reading and Analyzing Your Balance Sheet

Key Points:

1. Understanding your own balance sheet and financial ratios is most important.

2. You should examine your balance sheet for items that may be missing or incomplete:

   a. All your current farm assets

   b. Farm cooperative stock and the value of milk certificates

   c. Assets you are leasing through a leasing firm or machinery company

   d. All your liabilities

   e. Nonfarm liabilities

3. In addition to checking your balance sheet for completeness, you should check the **accuracy** of the numbers

The farm financial analysis chart is designed just like the farm business chart on pages 30-31 and may be used to measure the financial health of the farm business. Most of the financial measures are defined on pages 11, 13, 16, and 27 in this publication.

Table 42. FINANCIAL ANALYSIS CHART
395 New York Dairy Farms, 1990

Liquidity (repayment)				
Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow
$ 59	$932	5.22	4%	$ 119
181	742	2.11	8	680
253	663	1.59	11	1,210
341	582	1.30	14	1,632
400	513	1.15	16	2,025
454	452	1.01	18	2,386
501	395	0.85	20	2,735
560	315	0.69	22	3,178
642	207	0.43	25	3,737
899	-196	-0.23	37	4,726

Solvency				Profitability	
		Debt/Asset Ratio		Percent Rate of Return with appreciation on:	
Leverage Ratio*	Percent Equity	Current & Intermediate	Long Term	Equity	Investment**
0.02	98	0.01	0.00	21%	16%
0.11	90	0.06	0.00	11	10
0.21	82	0.12	0.07	8	8
0.33	75	0.19	0.18	5	6
0.43	69	0.25	0.27	3	5
0.55	64	0.31	0.39	1	4
0.72	58	0.37	0.50	-1	3
0.93	51	0.44	0.61	-3	1
1.22	45	0.53	0.74	-7	-2
2.40	32	0.73	1.00	-23	-7

Efficiency (Capital)				
Capital Turnover (years)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation
1.38	$1,390	$ 596	$ 4,264	$110,353
1.68	1,972	817	5,087	53,680
1.84	2,262	940	5,667	33,094
2.03	2,594	1,050	6,103	22,571
2.18	2,865	1,194	6,482	15,798
2.34	3,125	1,318	6,869	10,557
2.50	3,504	1,472	7,340	3,939
2.70	4,037	1,658	7,990	-3,080
3.08	4,705	1,946	8,937	-11,458
4.27	6,762	2,646	11,419	-47,167

*Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

**Return on all farm capital (no deduction for interest paid) divided by total farm assets.

ACTIVITY 5

Reading and Evaluating Your Cash Flow Statement and Repayment Analysis

Key Points:

1. Although it is very unlikely that you will achieve a $0 cash flow imbalance without changes and adjustments, the reason for trying to balance is to find out where all the cash is coming from/going.

2. Understanding the farm's ability to make committed and planned debt payments is a critical part of the planning process.

3. Items to consider in examining your Annual Cash Flow Statement (DFBS, page 6):

   a. How big is your cash flow imbalance?

   b. A positive number means that your cash inflows exceed your cash outflows by that amount. A negative number means the opposite.

   c. Common causes of positive imbalance:

      1) One or more expenditures have been overlooked
      2) Money borrowed or loan approved in summary year so it shows as cash inflow but same amount was not spent or used in summary year according to your cash outflows.

   d. Common causes of negative imbalance:

      1) Money borrowed has not all been accounted for.
      2) Some farm receipts have been overlooked.
      3) The farm business has used some funds from outside without recording them.
      4) Capital purchases/payments have been overstated.

4. Examine your position by use of the financial analysis chart. In general the following implications can be made: if you are located in the top half (line 5 or above) of the column your liquidity and solvency positions are strong, your debt is relatively easy to manage, and you have lots of flexibility in acquiring additional capital. If you are at the 6th decile or below, your flexibility is limited, your debt is difficult to manage, and you must look at other financial measures to see how well you are doing.

ACTIVITY 6

Relationships Among Financial Statements

Key Points:

1. The balance sheet, income statement, and cash flow statement are interrelated.

2. Changes in net worth can be traced by use of the three financial statements.

3. A change in net worth can be calculated in the following manner:

Net farm income
+ Appreciation (livestock, machinery, real estate, other)
+ Non-farm income
+ Non-farm capital used in business
+ Debt forgiveness
- Personal withdrawals
- Lost capital
- Cash flow error

= Change in net worth

Overhead-IV.6.1

CHANGE IN NET WORTH

Case Farm Calculation

$30,700.	Net farm income
+ 1,550.	Livestock appreciation
+ 4,700.	Real estate appreciation
+ 0.	Non-farm income
+10,000.	Non-farm capital used in the business
+ 0.	Debt forgiveness
- 21,500.	Personal withdrawals
- 1,100.	Lost capital
- (- 440.)	Cash flow error
= $24,790.	Change in net worth

ACTIVITY 7

Using the Farm Business Charts

Key Points:

1. Possible standards to measure own farm against:

   a) Average of others

   b) Own goals

   c) Previous figures for own farm

2. Comparisons can be made with all farms as well as with farms of similar size and type.

3. Need to look at more than one year.

4. Need to look at several factors and relationships between them.

Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 395 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. Each column of the chart is independent of the others. The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the top 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

Table 40. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
395 New York Dairy Farms, 1990

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
8.7	349	6,643,712	21,193	4.5	20	48	870,895
4.7	157	2,871,316	19,629	3.6	18	40	691,021
3.9	118	2,089,248	18,650	3.2	17	35	615,415
3.3	98	1,691,784	17,988	3.0	16	32	561,437
3.0	81	1,417,006	17,422	2.8	15	30	510,328
2.6	70	1,151,117	16,875	2.5	14	28	463,936
2.3	60	968,206	16,322	2.3	13	26	429,166
2.1	53	837,604	15,455	2.0	12	24	387,958
1.8	46	693,783	14,054	1.8	11	22	339,968
1.3	35	507,451	11,686	1.3	8	17	240,302

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$ 366	15%	$265	$ 692	$ 517	$3.40
476	20	351	823	645	4.13
542	23	390	901	721	4.46
611	25	429	945	781	4.74
667	27	466	999	833	4.97
719	29	496	1,058	891	5.26
770	31	530	1,109	949	5.52
827	32	575	1,173	1,014	5.80
899	35	638	1,273	1,099	6.24
1,058	40	807	1,474	1,279	7.11

The next section of the Farm Business Chart provides for comparative analysis of the value and costs of dairy production.

The profitability section shows the variation in farm income by decile and enables a dairy farmer to determine where he or she ranks by using several measures of farm profitability. Remember that each column is independently established and the farms making up the top decile in the first column will not necessarily be on the top of any other column. The dairy farmer who ranks at or near the top of most of these columns is in a very enviable position.

Table 40 (continued) FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
395 New York Dairy Farms, 1990

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Oper. Cost Milk Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cow	Total Cost Production Per Cwt.
$3,201	$16.32	$1,112	$ 7.19	$1,997	$12.78
2,966	15.63	1,425	8.96	2,311	14.06
2,806	15.27	1,547	9.65	2,461	14.77
2,669	14.98	1,668	10.15	2,594	15.32
2,589	14.83	1,791	10.68	2,710	15.80
2,496	14.69	1,922	11.20	2,802	16.29
2,390	14.57	2,036	11.69	2,921	16.99
2,262	14.44	2,151	12.29	3,041	17.69
2,064	14.23	2,281	13.14	3,196	19.04
1,721	13.59	2,593	14.90	3,651	22.69

Profitability

Net Farm Income		Return to Operator's Labor, Management, & Equity Capital		Labor & Management Income	
With Appreciation	Without Appreciation	With Appreciation	Without Appreciation	Per Farm	Per Operator
$231,926	$190,057	$230,419	$188,587	$130,403	$96,579
91,230	81,401	89,849	79,191	47,621	31,927
66,354	56,580	61,893	52,316	29,650	21,508
50,670	44,618	47,120	40,525	20,689	15,542
42,626	34,580	38,335	31,926	14,330	10,878
33,267	28,118	29,721	24,485	7,592	6,034
25,805	20,654	21,927	16,616	1,361	1,060
19,089	13,852	14,945	10,124	-5,365	-4,331
11,588	6,798	6,513	1,732	-15,640	-13,572
-11,058	-9,971	-14,637	-14,241	-34,015	-30,508

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are discussed in the supplemental section on pages 45-48.

Table 47. FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
127 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1990

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
3.2	59	1,063,570	19,694	3.9	20	38	601,872
2.6	57	956,623	18,135	3.2	17	30	514,801
2.4	54	886,369	17,515	3.0	16	28	465,011
2.1	51	821,538	17,016	2.7	15	26	431,581
2.0	49	757,836	16,617	2.5	13	25	394,554
1.9	45	707,062	16,066	2.3	12	23	368,897
1.7	42	658,951	15,340	2.0	12	22	341,474
1.5	40	608,772	14,202	1.8	10	20	298,433
1.3	36	536,080	13,081	1.6	10	18	260,744
1.1	28	367,339	10,584	1.0	7	14	196,088

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$ 360	16%	$221	$ 683	$ 475	$3.42
476	22	317	829	608	4.11
527	24	359	917	684	4.45
577	26	391	962	722	4.71
632	28	455	1,022	762	4.92
698	29	490	1,077	817	5.17
737	31	516	1,138	873	5.38
781	33	556	1,219	934	5.72
827	37	619	1,320	1,013	6.19
1,007	41	848	1,596	1,247	7.23

Value and Cost of Production			Profitability			
			Net Farm Income			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	With Apprec.	Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$2,982	$ 6.69	$13.63	$72,739	$48,969	$25,562	$42,873
2,729	8.42	14.78	44,695	35,933	17,760	22,785
2,604	9.10	15.38	36,555	29,744	13,303	16,110
2,490	9.60	16.04	29,556	25,100	8,783	12,312
2,408	10.10	16.81	25,909	19,976	4,369	6,962
2,337	10.77	17.50	21,881	15,365	339	3,309
2,224	11.45	18.18	17,294	10,762	-2,731	247
2,073	11.98	19.28	12,480	6,635	-7,250	-4,426
1,877	12.74	20.39	5,188	2,872	-16,427	-11,086
1,522	15.51	26.07	-14,724	-12,754	-32,617	-36,059

Table 48. FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
97 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1990

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
5.1	149	2,584,859	20,718	4.3	20	44	760,541
4.0	106	1,875,410	19,377	3.5	18	37	637,992
3.4	96	1,629,899	18,581	3.1	17	33	576,615
3.1	86	1,517,394	18,068	2.9	16	31	541,546
2.9	80	1,403,263	17,315	2.6	15	30	486,292
2.6	76	1,328,227	16,794	2.4	14	28	456,646
2.5	71	1,219,172	16,108	2.2	12	26	426,507
2.4	68	1,101,764	14,940	2.1	12	25	404,925
2.1	66	988,499	13,591	1.8	11	23	375,631
1.7	63	819,905	11,401	1.5	8	19	297,511

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$ 373	16%	$298	$ 720	$ 493	$3.38
442	19	368	812	598	4.08
506	23	393	864	695	4.39
579	24	421	913	759	4.69
649	26	456	954	826	4.89
700	28	485	994	886	5.24
774	31	531	1,079	936	5.43
842	33	585	1,137	1,011	5.72
919	35	640	1,216	1,087	6.14
1,086	40	742	1,352	1,279	7.14

Value and Cost of Production			Profitability			
			Net Farm Income		Labor &.	Change in
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	With Apprec.	Without Apprec.	Mgmt. Inc. Per Oper.	Net Worth w/Apprec.
$3,162	$ 7.30	$13.04	$106,960	$91,167	$46,704	$77,975
2,902	9.22	14.11	72,165	61,082	27,104	39,645
2,744	9.91	14.94	54,447	49,457	19,419	29,725
2,651	10.20	15.55	48,672	43,537	13,118	23,556
2,576	10.59	15.93	43,293	34,340	9,424	17,338
2,478	11.13	16.38	36,204	27,752	4,553	12,420
2,362	11.69	16.82	25,594	21,420	380	5,334
2,205	12.34	17.30	18,611	14,713	-5,082	-2,665
2,025	13.24	18.04	12,273	9,758	-13,809	-11,179
1,730	14.19	20.13	-4,728	-5,646	-23,429	-47,564

Table 49. FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
60 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1990

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
4.3	116	2,158,034	20,788	4.6	21	48	828,578
3.8	109	1,944,413	19,249	3.6	19	40	676,371
3.5	103	1,846,013	18,571	3.3	17	36	605,256
3.1	97	1,696,622	17,923	3.0	16	33	578,887
2.9	90	1,536,651	17,237	2.8	15	31	547,092
2.7	80	1,343,093	16,615	2.5	15	29	501,972
2.5	77	1,213,815	16,147	2.1	14	27	456,111
2.2	67	1,049,918	15,476	1.9	14	25	410,748
1.9	56	881,600	13,672	1.6	13	23	354,502
1.4	46	632,120	12,126	1.0	9	18	253,915

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$ 286	11%	$270	$ 653	$ 512	$3.01
426	18	331	802	620	3.77
520	21	393	885	665	4.40
606	25	440	933	767	4.76
666	27	464	970	838	5.12
704	28	496	1,046	921	5.52
764	31	567	1,092	969	5.65
840	33	614	1,153	1,041	5.85
906	34	686	1,267	1,091	6.34
1,006	39	877	1,481	1,219	7.12

Value and Cost of Production			Profitability			
			Net Farm Income			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	With Apprec.	Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$1,854	$ 7.95	$12.98	$101,819	$96,206	$44,877	$75,638
2,012	9.22	14.11	79,708	70,840	27,364	48,824
2,295	9.65	14.91	69,020	56,741	19,085	33,368
2,435	10.09	15.41	59,252	48,026	13,408	23,325
2,509	10.72	15.85	41,880	36,075	10,018	15,763
2,588	11.21	16.19	31,702	27,444	6,031	10,534
2,667	11.78	16.95	23,015	15,348	433	1,011
2,759	12.71	17.81	16,564	10,333	-9,174	-7,476
2,898	13.84	19.65	5,105	-2,985	-18,460	-19,705
3,100	15.22	22.15	-18,572	-12,043	-26,264	-77,443

Table 50. FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
80 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1990

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
14.7	665	12,936,108	21,844	4.7	19	57	1,002,686
7.9	338	6,399,112	20,930	4.0	18	44	866,986
7.0	257	4,683,440	20,025	3.5	17	42	793,600
6.0	205	3,760,735	19,243	3.2	16	40	734,560
5.5	181	3,413,110	18,723	3.0	16	38	694,646
5.1	169	3,070,859	18,168	2.8	15	36	659,232
4.5	156	2,884,946	17,731	2.6	14	34	627,685
4.0	142	2,714,383	17,106	2.3	13	32	587,006
3.8	130	2,432,639	16,404	2.1	12	30	530,645
3.1	122	1,908,456	14,467	1.5	9	25	428,608

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$ 416	15%	$287	$ 670	$ 655	$3.48
550	19	368	839	785	4.17
632	23	405	919	829	4.50
689	25	441	975	888	4.84
738	26	480	1,025	941	5.10
783	29	506	1,054	979	5.44
826	30	535	1,089	1,019	5.64
857	32	555	1,162	1,085	6.01
926	34	609	1,217	1,160	6.32
1,078	40	748	1,354	1,293	7.01

Value and Cost of Production			Profitability			
			Net Farm Income			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	With Apprec.	Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$3,303	$ 6.85	$11.75	$420,314	$341,186	$207,822	$187,516
3,107	9.20	13.08	237,008	196,670	89,608	102,826
3,016	10.18	13.77	165,693	153,705	61,282	80,200
2,927	10.75	14.20	127,779	111,389	42,376	65,041
2,843	11.14	14.82	104,366	92,999	31,694	46,573
2,713	11.44	15.22	85,705	74,817	20,966	35,148
2,644	11.90	15.61	71,032	58,137	15,068	21,132
2,548	12.42	15.94	50,070	43,367	7,425	1,876
2,443	13.04	16.51	35,473	31,356	-5,216	-14,390
2,169	14.07	17.72	-1,111	9,388	-35,772	-58,492

ACTIVITY 8

Identifying Opportunities for Improvement

Key Points:

1. Opportunity areas are aspects of your business where improvements can be made.

2. In analyzing your business, look for <u>relative</u> strengths and weaknesses. Examine the financial analysis and farm business charts to find areas which are relatively strong/weak.

Opportunity Areas - Case Farm

Group Exercise

Based on the financial analysis and farm business charts, list (in order of importance) the three greatest opportunity areas for the case farm.

1. _____

_____

2. _____

_____

3. _____

_____

Opportunity Areas - Own Farm

Individual Exercise

Based on the financial analysis and farm business charts, list (in order of importance) the three greatest opportunity areas for your farm.

1. _____

_____

2. _____

_____

3. _____

_____

ACTIVITY 9

Setting Financial Goals for Your Farm

Key Points:

1. Goals are **S**pecific, **M**easurable, **A**ttainable, **R**ewarding, and **T**imed (SMART) statements of what is to be done en route to the accomplishment of an objective. They must be **quantified!**

2. Goals support the business objectives which, in turn, help the business realize its mission.

3. Productivity and other objectives should have financially quantified goals and controls supporting them.

General Management Profitability Goals for the Current Year

	Prior Year New York Average	Prior Year N.Y. Similar Size	Prior Year Own Farm Actual	Summary Year Own Farm Actual	Current Year Own Farm Goal
Net farm income	_____	_____	_____	_____	_____
Labor and management income/farm	_____	_____	_____	_____	_____
Labor and management income/operator	_____	_____	_____	_____	_____
Return on Investment (Equity)	_____	_____	_____	_____	_____
Rate of return on equity without appreciation	_____	_____	_____	_____	_____

ACTIVITY 10

Tactical Planning

Key Points:

1. The definition of tactics as discussed in Managing for Success: Tactics are precise, individually itemized plans for action. Tactics describe exactly who, what, when, where and how activities will take place in order to accomplish a goal.

2. Tactical plans are used to translate decisions made into actions to be taken. They provide a road map of activities to be accomplished in meeting goals.

3. Tactical plans are composed of answers to the following questions: What task is to be done, who is responsible, where will the task be done, how will it be done, and when will it be accomplished.

4. Writing down tactical plans helps the manager to clearly define the tasks to be done in order to accomplish goals. The process of writing down the plan may cause the manager to address areas that may have been neglected without going through the process.

5. A control plan should be written to monitor progress towards the stated goal.

TACTICAL PLAN

Tactics are precise, individually itemized plans for action. Tactics describe exactly who, what, when, where, and how activities will take place in order to accomplish a goal.

Goal to be actualized: _____

What task or activity is to be done?	Who is respon-sible?	How and/or where should the task be done?	When to perform task or activity (deadline, frequency, under what conditions)

CONTROL PLAN

Controlling is measuring and reporting actual performance at prescribed intervals, comparing that performance to set standards, and taking appropriate corrective action when events are not conforming to plans.

Plan for controlling: _____

Input or Output to Monitor	Monitoring Procedure (including who)	Monitoring Time Interval	Control Standards	Corrective Actions to Bring System Back to Standard

ACTIVITY 11

Wrap-Up and Completion of Course Feedback

Key Points:

1. Much material has been covered in the four-session workshop and it will take time for you to make use of everything. Nevertheless, a lot has been learned and you can be proud of your accomplishments.

2. Feedback is important to the program. We want to continue to improve the courses we are offering. Please do not leave without completing the course evaluation.

Managing with Finance

Management Focus Workshop Evaluation

Your feedback is important! Please answer the following questions to help us evaluate the workshop and improve it for the future.

Rate each part of the course on a scale of 1 (low value) to 5 (high value) according to its value to you in managing your farm. Circle one number for each area.

Session I.

1. Quantifying Goals
   (Low value) 1 2 3 4 5 (High value)

   Comments: _____

2. Profitability vs. Cash Flow discussion
   (Low value) 1 2 3 4 5 (High value)

   Comments: _____

3. Constructing balance sheet for case farm
   (Low value) 1 2 3 4 5 (High value)

   Comments: _____

4. Preparing own farm balance sheet
   (Low value) 1 2 3 4 5 (High value)

   Comments: _____

5. Discussion on using the balance sheet in management
   (Low value) 1 2 3 4 5 (High value)

   Comments: _____

Session II.

6. Introduction to the income statement
   (Low value) 1 2 3 4 5 (High value)

   Comments: _____

7. Identifying cash receipts and expenses
(Low value) 1 2 3 4 5 (High value)

Comments: _____

8. Introduction to accrual accounting
(Low value) 1 2 3 4 5 (High value)

Comments: _____

9. Discussion of depreciation
(Low value) 1 2 3 4 5 (High value)

Comments: _____

10. Case farm net farm income exercise
(Low value) 1 2 3 4 5 (High value)

Comments: _____

11. Own farm income statement exercise
(Low value) 1 2 3 4 5 (High value)

Comments: _____

Session III.

12. Understanding cash flow discussion
(Low value) 1 2 3 4 5 (High value)

Comments: _____

13. Joe Farmer cash flow example
(Low value) 1 2 3 4 5 (High value)

Comments: _____

14. Completion of case farm cash flow statement
(Low value) 1 2 3 4 5 (High value)

Comments: _____

15. Discussion on managing cash flow
(Low value) 1 2 3 4 5 (High value)

Comments: _____

17. Projecting cash flows for case farm
(Low value) 1 2 3 4 5 (High value)

Comments: _____

18. Buying a machine on credit discussion
(Low value) 1 2 3 4 5 (High value)

Comments: _____

19. Projecting own farm cash flows
(Low value) 1 2 3 4 5 (High value)

Comments: _____

Session IV.

20. Discussion of lawn mower case example
(Low value) 1 2 3 4 5 (High value)

Comments: _____

21. Discussion on measuring profitability
(Low value) 1 2 3 4 5 (High value)

Comments: _____

22. Own farm profitability analysis
(Low value) 1 2 3 4 5 (High value)

Comments: _____

23. Own farm balance sheet analysis
(Low value) 1 2 3 4 5 (High value)

Comments: _____

24. Own farm cash flow analysis
(Low value) 1 2 3 4 5 (High value)

Comments: _____

25. Discussion on using the farm business charts
(Low value) 1 2 3 4 5 (High value)

Comments: _____

26. Identifying opportunities for improvement exercise
(Low value) 1 2 3 4 5 (High value)

Comments: _____

27. Setting financial goals for own farm
(Low value) 1 2 3 4 5 (High value)

Comments: _____

28. Tactical planning for own farm
(Low value) 1 2 3 4 5 (High value)

Comments: _____

General Questions:

29. What did you like <u>best</u> about the course?

30. What did you like <u>least</u> about the course?

31. If you had to change one thing about the course, what would you change?

32. Please rate the <u>content</u> of the workshop by circling one number in each category.

Useless	1	2	3	4	5	Useful
Impractical	1	2	3	4	5	Practical

33. Please rate the level of the material presented to you:

Too Low Just Right Too High

34. Did the material help you to recognize opportunity areas on your farm?

Not at All Some A Lot

35. Please rate the discussion leaders for the workshop by circling one number in each category.

Amateur	1	2	3	4	5	Professional
Disorganized	1	2	3	4	5	Well prepared
Uninformed	1	2	3	4	5	Knowledgeable

36. Please give your comments about the following written resource materials you received during the course.

Managing with Finance Notebook:

PRO-DAIRY Financial Data Collection Workbook:

37. We welcome any additional comments or suggestions on the workshop or the PRO-DAIRY program:

38. (Optional) Your name: _____

CORNELL COOPERATIVE EXTENSION
Prepared by
DEPARTMENT OF AGRICULTURAL ECONOMICS
CORNELL UNIVERSITY

Name Managing with Finance

Address Case Farm

NY

DAIRY FARM BUSINESS SUMMARY

FARM NO. 36600

PROGRESS OF THE FARM BUSINESS

SELECTED FACTORS	2nd Prior Year	Prior Year	Summary Year
Size of Business			
Avg # of cows	96	98	99
Avg # of heifers	60	83	88
Milk sold, lbs.	1632648	1724800	1811700
Worker equiv.	3.50	3.58	3.58
Total tillable acres	205	205	205
Rates of Production			
Milk sold per cow,lbs.	17007	17600	18300
Hay DM per acre,tons	1.8	2.4	2.1
Corn silage per acre,tons	18	10	16
Labor Efficiency			
Cows per worker	27	27	28
Milk sold per worker,lbs.	466471	481340	505591
Cost Control			
Grain & conc. purch. as % milk sales	21%	29%	33%
Dairy feed & crop exp. per cwt. milk	$ 2.99	$ 3.83	$ 4.51
Labor and mach. costs per cow	$ 697	$ 832	$ 931
Capital Efficiency (average for year)			
Farm capital per cow	$ 4321	$ 4707	$ 4907
Machinery and equipment per cow	$ 698	$ 775	$ 811
Capital turnover, years	1.6	1.7	1.7
Profitability			
Net farm income w/o apprec.	$ 56060	$ 34712	$ 30700
Net farm income w/ appreciation	$ 76930	$ 53479	$ 36950
Labor & management income per op/mgr	$ 49128	$ 25516	$ 20168
Rate return on equity capital w/apprec	37.5%	18.2%	8.0%
Rate return on all capital w/apprec.	18.5%	12.7%	9.1%
Financial Summary			
Farm net worth, end year	$ 163744	$ 200239	$ 223029
Debt to asset ratio	0.63	0.58	0.55
Farm debt per cow	$ 2720	$ 2757	$ 2891
Cash flow coverage ratio	0.66	0.53	0.62

SINGLE PROP, ACCT. BOOK, OWNER, FULL-TIME, DAIRY.*

FARM NO. 36600

INCOME STATEMENT

EXPENSES	Cash Amount paid +	Change in Inventory or Prepaid Expense* +	Change in Accounts Payable** =	Accrual Expenses
Hired Labor	$ 32500	$ 0	$ 0	$ 32500
Feed				
Dairy grain & conc.	76900	-4000	5000	77900
Dairy roughage	0	0	0	0
Nondairy	0	0	0	0
Machinery				
Mach hire, rent/lease	5100	0	0	5100
Machinery repairs/parts	16700	0	0	16700
Auto expense (f.s.)	400	0	0	400
Fuel, oil & grease	6300	0	0	6300
Livestock				
Replacement livestock	3800	0	0	3800
Breeding	2700	0	0	2700
Veterinary & medicine	4200	0	0	4200
Milk marketing	7600	0	0	7600
Cattle lease/rent	0	0	0	0
Other livestock expense	7900	0	0	7900
Crops				
Fertilizer & lime	3300	-1000	0	2300
Seeds & plants	600	200	0	800
Spray, other crop exp.	550	100	0	650
Real Estate				
Land/bldg/fence repair	3100	0	0	3100
Taxes	3600	0	0	3600
Rent & lease	5800	-200	0	5600
Other				
Insurance	4900	0	0	4900
Telephone (farm share)	1400	0	0	1400
Electricity (farm share)	4800	0	0	4800
Interest paid	27100	0	0	27100
Miscellaneous	1850	0	0	1850
TOTAL OPERATING	$ 221100	$ -4900	$ 5000	$ 221200
Expansion livestock	$ 3800	$ 0	$ 0	$ 3800
Machinery depreciation				$ 12200
Building depreciation				$ 3500
TOTAL ACCRUAL EXPENSES				$ 240700

*Changes in inventory include net amounts of items used out of purchased inventory this year (positive change is amt. inventory declined, negative change is amt. inventory increased). Changes in prepaid expenses apply to non-inventory categories (positive change is amt. pre-pymnt. declined.

**Unpaid items or services used or added to inventory during the year.

FARM NO. 36600

INCOME STATEMENT (continued)

RECEIPTS	Cash Receipts +	Change in Inventory* +	Change in Accounts Receivable	= Accrual Receipts
Milk sales	$ 234080		$ 2020	$ 236100
Dairy cattle	20360	$ 4600	0	24960
Dairy calves	4200		0	4200
Other livestock	0	0	0	0
Crops	0	2300	0	2300
Gov't receipts	2400	0**	0	2400
Custom machine work	600		0	600
Gas tax refund	320		0	320
Other	520		0	520
TOTAL ACCRUAL RECEIPTS	$ 262480	$ 6900	$ 2020	$ 271400

*Change in lvstk inv. w/o apprec. & total change in grown feeds inv.
**Change in advanced government receipts.

PROFITABILITY ANALYSIS

	Without Apprec.	+ Appreci-ation	= With Apprec.
RETURN TO OPERATOR(S) & FAMILY LABOR UNPAID, MGMT., & EQUITY CAPITAL:			
Total Accrual Receipts	$ 271400		
Livestock Appreciation		$ 1550	
Machinery Appreciation		0	
Real Estate Appreciation		4700	
Other Stock/Cert. Appreciation		0	
			$ 277650
- Total Accrual Expenses	$ 240700		$ 240700
= NET FARM INCOME	$ 30700		$ 36950
RETURN TO OPERATOR(S) LABOR, MANAGEMENT & EQUITY CAPITAL:			
Net Farm Income	$ 30700		$ 36950
- Family Labor Unpaid @ $750/mo.	0		0
= RETURN TO OP.'S LABOR, MGT. & EQ. CAPITAL	$ 30700		$ 36950
RETURN TO OPERATOR'S LABOR & MANAGEMENT:			
Return to Op.'s Labor, Mgt. & Eq. Capital	$ 30700		
- Real Interest on $ 210634 Average Equity Capital @ 5%	10532		
= LABOR & MANAGEMENT INCOME	$ 20168		
LABOR & MANAGEMENT INC. PER 1.00 OP./MGR.	$ 20168		
RETURN TO EQUITY CAPITAL:			
Return to Op.'s Labor Mgt. & Eq. Capital	$ 30700		$ 36950
- Value of Operator's Labor & Management	20000		20000
= RETURN TO EQUITY CAPITAL	$ 10700		$ 16950
Rate of Return on Equity Capital	5.1%		8.0%
RETURN TO ALL CAPITAL:			
Return to Equity Capital	$ 10700		$ 16950
+ Interest Paid	27100		27100
= RETURN TO ALL CAPITAL	$ 37800		$ 44050
Rate of Return on All Capital	7.8%		9.1%

BALANCE SHEET

FARM BUSINESS

ASSETS	Jan. 1	Dec. 31
Current		
Farm cash, chkg & savings	$ 4700	$ 4800
Accts. rec.	18371	20391
Prepaid exp.	0	200
Feed/supplies	42599	49599
Total	$ 65670	$ 74990
Intermediate		
Dairy cows:		
owned	91000	95000
leased	0	0
Heifers	38600	40750
Bulls/other lvstk.	500	500
Mach/eq owned	78100	82400
Mach/eq leased	0	0
FLB/PCA Stock	0	0
Other stock & cert.	25	25
Total	$ 208225	$ 218675
Long-Term		
Land/buildings:		
owned	200000	204000
leased	0	0
Total	$ 200000	$ 204000
Total Farm Assets	$ 473895	$ 497665

LIABILITIES & NET WORTH	Jan. 1	Dec. 31
Current		
Accounts payable	$ 0	$ 5000
Operating debt		
P D Bank	32450	31600
	0	0
Short term:		
	0	0
	0	0
Advanced Gov. Rec.	0	0
Total	$ 32450	$ 36600
Intermediate		
FmHA	75902	64802
P D Bank	7528	22758
Last Bank	2870	580
Car Note	2550	874
	0	0
	0	0
	0	0
Financial lease (cattle/mach.)	0	0
FLB/PCA Stock	0	0
Total	$ 88850	$ 89014
Long-Term		
FmHA	60599	57849
P D Bank	93757	91173
	0	0
	0	0
Fin. lease (struc)	0	0
Total	$ 154356	$ 149022
Total Farm Liab.	$ 275656	$ 274636
FARM NET WORTH	$ 198239	$ 223029

NONFARM

Nonfarm Assets	Jan. 1	Dec. 31
Pers cash, chkg. & savings	$ 12500	$ 2800
Cash value of life ins	6200	6400
Nonfarm RE	0	0
Auto (pers sh)	4000	3800
Stocks & Bonds	0	0
Hshld. furn.	10500	10500
All other	0	0
Total Nonfarm	$ 33200	$ 23500

	Jan. 1	Dec. 31
Nonfarm Liab.	$ 0	$ 0
NONFARM NET WORTH	$ 33200	$ 23500

FARM & NONFARM

Total Farm & Nonfarm Assets	$ 507095	$ 521165
Total Farm & Nonfarm Liab.	$ 275656	$ 274636
FARM & NONFARM NET WORTH	$ 231439	$ 246529

FARM NO. 36600

BALANCE SHEET ANALYSIS

Financial Ratios	Farm Business	Farm & Nonfarm
Percent equity	45%	47%
Debt to asset ratio		
Total	0.55	0.53
Long-term	0.73	
Intermediate/current	0.43	
Change in Net Worth		
Without appreciation	$ 18540	
With appreciation	$ 24790	$ 15090
Debt Analysis		
Accounts payable as % of total debt	2%	
Long-term liabilities as a % of total debt	54%	
Current & intermediate liabilities as % of total debt	46%	

Debt Levels

	Per Cow	Per Tillable Acre Owned
Total farm debt	$ 2891	$ 2746
Long-term debt	1569	1490
Intermediate/current	1322	1256

Farm Inventory

	Real Estate	Machinery & Equipment	Livestock	Feed & Supplies
Beginning of Year	$ 200000	$ 78100	$ 130100	$ 42599
Purchases	3900*	16500		
- Lost Capital	1100			
- Sales	0	0		
- Depreciation	3500	12200		
= Net Investment	-700	4300	4600**	
Appreciation	4700	0	1550	
End of Year	$ 204000	$ 82400	$ 136250	$ 49599

* $ 0 Land + $ 3900 Building.

** See page 9, Dairy Inventory Analysis, for dairy cow and heifer inventory detail.

FARM NO. 36600

ANNUAL CASH FLOW STATEMENT

Cash Inflows

Beginning farm cash, checking & savings	$ 4700	
Cash farm receipts	262480	
Sale of assets: Machinery	0	
Real estate	0	
Other stock & certificates	0	
Money borrowed (intermediate & long-term)	18700	
Money borrowed (short-term)	0	
Increase in operating debt	0	
Nonfarm income	0	
Cash from nonfarm capital used in business	10000	
Money borrowed - nonfarm	0	
TOTAL		$ 295880

Cash Outflows

Cash farm expenses	$ 221100	
Capital purchases: Expansion livestock	3800	
Machinery	16500	
Real estate	3900	
Other stock & certificates	0	
Principal payments (intermediate & long-term)	23870	
Principal payments (short-term)	0	
Decrease in operating debt	850	
Personal withdrawals & family expenditures, including nonfarm debt payments	21500	
Ending farm cash, checking & savings	4800	
TOTAL		$ 296320
Imbalance (error)		$ -440

FARM NO. 36600

REPAYMENT ANALYSIS

Debt Payments	Planned for 1990*	Made in 1990	Planned for 1991
Long term	$ 18744	$ 18744	$ 18744
Intermediate term	27108	29022	31551
Short-term	0	0	0
Operating (net reduction)	30000	850	10000
Accounts payable (net reduction)	0	0	0
Total	$ 75852	$ 48616	$ 60295
(% made of planned = 64%)			
Per cow	$ 766	$ 491	
Per cwt. 1990 milk	$ 4.19	$ 2.68	
Percent of total 1990 receipts	28%	18%	
Percent of 1990 milk receipts	32%	21%	

* If on Business Summary in 1989.

Cash Flow Coverage Ratio

Cash Farm Receipts	$ 262480	
- Cash Farm Expenses	221100	
+ Interest Paid	27100	
- Net Pers. Withdls from Farm**	21500	
(A) = Amount Available for Debt Service		$ 46980
(B) = Debt Payments Planned for 1990		$ 75852
(A / B) Cash Flow Coverage Ratio for 1990		0.62

** Personal withdrawals & family expenditures less nonfarm income and nonfarm money borrowed.

FARM NO. 36600

CROPPING PROGRAM ANALYSIS

Land	Owned	Rented	Total
Tillable	100	105	205
Nontillable	64	50	114
Other nontillable	80	0	80
Total	244	155	399

Crop Yields	Acres	Total Production	Production Per Acre
Dry hay		77 Tons DM	
Hay crop silage		250 Tons DM	
Total Hay Crop Production	159	327 Tons DM	2.06 Tons DM
Corn silage	46	736 Tons	16.00 Tons
		221 Tons DM	4.80 Tons DM
Other forage	0	0 Tons DM	0.00 Tons DM
Total Forage	205	548 Tons DM	2.67 Tons DM
Corn grain	0	0 Bushels	0.00 Bushels
Oats	0	0 Bushels	0.00 Bushels
Wheat	0	0 Bushels	0.00 Bushels
Other crops	0		
Tillable pasture	0		
Idle tillable land	0		
Total tillable acres	205		

Crop Related Accrual Expenses

Crops	Total/ Till. Acre	Hay Crop Per Acre	Hay Crop Per Ton DM	All Corn Per Acre	Corn Silage/ Ton DM	Corn Grain Per Dry Shell Bu.
Fert. & lime	$ 11.22	$ 7.55	$ 3.67	$ 23.91	$ 4.98	$ 0.00
Seeds & plants	3.90	2.26	1.10	9.57	1.99	0.00
Spray/other crop expense	3.17	0.88	0.43	11.09	2.31	0.00
Total Crop	$ 18.29	$ 10.69	$ 5.20	$ 44.57	$ 9.28	$ 0.00

Machinery	Total Expenses	Per Tillable Acre
Fuel, oil & grease	$ 6300	$ 30.73
Machinery repair & parts	16700	81.46
Machine hire, rent & lease	5100	24.88
Auto expense (farm share)	400	1.95
Interest (5%)	4013	19.57
Depreciation	12200	59.51
Total Machinery	$ 44713	$ 218.11

Crop/Cow Factors

Total Tillable Acres per Cow	2.07
Total Forage Acres per Cow	2.07
Harvested Forage Dry Matter per Cow	5.54

FARM NO. 36600

DAIRY ANALYSIS

Dairy Inventory	Dairy Cows No.	Dairy Cows Value	Heifers Bred No.	Heifers Bred Value	Heifers Open No.	Heifers Open Value	Heifers Calves No.	Heifers Calves Value
Beg. of Year	91	$ 91000	29	$ 18850	35	$ 14000	23	$ 5750
+ Change in Inv. (w/o apprec.)		4000		2850		-3500		1250
+ Appreciation		0		1550		0		0
= End of Year	95	$ 95000	31	$ 23250	30	$ 10500	28	$ 7000
Total End (incl. leased)	95							
Average Number	99		88	All Age Groups				

Milk Production

Total milk sold	1811700 lbs.
Milk sold per cow	18300 lbs.
Average milk plant test	3.50 % butterfat

Accrual Receipts From Dairy	Total	Per Cow	Per Cwt.
Milk	$ 236100	$ 2385	$ 13.03
Dairy cattle (including culls)	24960	252	1.38
Dairy calves	4200	42	0.23
Total	$ 265260	$ 2679	$ 14.64

Accrual Cost of Producing Milk - Whole Farm Method

Operating cost of producing milk	$ 189700	$ 1916	$ 10.47
Total cost of producing milk excluding operator's labor, management & capital	205400	2075	11.34
Total cost of producing milk	235932	2383	13.02

Dairy Related Accrual Expenses

Purchased dairy grain & concentrates	$ 77900	$ 787	$ 4.30
Purchased dairy roughage	0	0	0.00
Total Purchased Dairy Feed	77900	787	4.30
Purchased grain & concentrates as % of milk receipts	33%		
Purchased feed & crop exp.	$ 81650	$ 825	$ 4.51
Purchased feed & crop exp. as % of milk receipts	35%		
Breeding	$ 2700	$ 27	$ 0.15
Veterinary & medicine	4200	42	0.23
Milk marketing	7600	77	0.42
Cattle lease	0	0	0.00
Other livestock expense	$ 7900	$ 80	$ 0.44

FARM NO. 36600

CAPITAL & LABOR EFFICIENCY ANALYSIS

Capital Efficiency (Average for Year)

	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	$ 135567	$ 4907	$ 2370	$ 4858
Real estate		2040		2020
Machinery & equip.	22395	811	391	

Capital Turnover, years 1.75

Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	12	52	13	$ 20000
Family paid	13			
Family unpaid	0			
Hired	18			

Total 43 / 12 = 3.58 Worker Equivalent
1.00 Operator/Manager Equivalent

Labor Efficiency

	Total	Per Worker
Cows, average no.	99	28
Milk sold, lbs.	1811700	505591
Tillable acres	205	57
Work units	1003	280

Labor Cost	Total	Per Cow	Per Till Acre
Value of Operator(s) Labor ($1050/month)	$ 12600	$ 127	$ 61.46
Family unpaid ($750/month)	0	0	0.00
Hired	32500	328	158.54
Total Labor	$ 45100	$ 456	$ 220.00
Machinery Cost	$ 44713	$ 452	$ 218.11
Total Labor & Machinery Costs	$ 89813	$ 907	$ 438.11

ANNUAL CASH FLOW WORKSHEET

Item	Receipt or Expense Total	Receipt or Expense Per Cow	Expected Change	Projection
Average Number of Cows	99			
ACCRUAL OPERATING RECEIPTS				
Milk	$ 236100	$2384.85		$
Dairy cattle	24960	252.12		
Dairy calves	4200	42.42		
Other livestock	0	0.00		
Crops	2300	23.23		
Miscellaneous receipts	3840	38.79		
Total	$ 271400	$2741.41		$
ACCRUAL OPERATING EXPENSES				
Hired labor	$ 32500	$ 328.28		$
Dairy grain & concentrate	77900	786.87		
Dairy roughage	0	0.00		
Nondairy feed	0	0.00		
Machine hire/rent/lease	5100	51.52		
Mach.repair/parts & auto	17100	172.73		
Fuel, oil & grease	6300	63.64		
Replacement livestock	3800	38.38		
Breeding	2700	27.27		
Veterinary & medicine	4200	42.42		
Milk marketing	7600	76.77		
Cattle lease	0	0.00		
Other livestock expense	7900	79.80		
Fertilizer & lime	2300	23.23		
Seeds & plants	800	8.08		
Spray/other crop expense	650	6.57		
Land, bldg., fence repair	3100	31.31		
Taxes	3600	36.36		
Real estate rent/lease	5600	56.57		
Insurance	4900	49.49		
Utilities	6200	62.63		
Miscellaneous	1850	18.69		
Total Less Interest Paid	$ 194100	$1960.61		$
NET ACCRUAL OPERATING INCOME (w/o interest paid)	$ 77300	$ 780.81		$
- Change in lvstk/crop inv	6900	69.70		
- Change in accounts rec.	2020	20.40		
+ Change in feed/supply inv	-4900	-49.49		
+ Change in accts. payable*	5000	50.51		
NET CASH FLOW	$ 68480	$ 691.72		$
- Net personal withdrawals & family expenditures	21500	217.17		
Available for Farm Debt Payments & Investments	$ 46980	$ 474.55		$
- Farm debt payments**	48616	491.07		
Avail. for Farm Investment	$ -1636	$ -16.53		$
- Capital purchases; cattle, machinery, improvements	24200	244.44		
Additional Capital Needed				$

* Less change in account payable for interest. **See page 7.

DAIRY FARM ASSET VALUES, NEW YORK, DECEMBER 31, 1989

Category	Region: Western Plain & Central	Plateau	Northern New York	Oneida-Mohwak & Hudson
Land & Buildings[1]				
Per Farm	$443,421	$252,660	$230,813	$352,127
Per Cow	2,671	2,954	2,565	3,827
Per Acre[2]	1,109	752	609	1,090
Per Tillable Acre[3]	1,572	1,579	1,104	1,956
Machinery & Equipment[1]				
Per Farm	$174,403	$106,456	$112,447	$114,268
Per Cow	1,051	1,245	1,249	1,242
Per Tillable Acre[4]				
Owned	618	665	538	635
Owned & Rented	366	399	392	385
Dairy Cows[1]				
Per Farm	$156,524	$87,081	$91,294	$92,355
Per Cow	943	1,018	1,014	1,004
Dairy Heifers[1]				
Per Farm	$66,533	$36,040	$40,511	$36,386
Per Heifer	508	522	547	512
Feed & Supplies[5]				
Per Farm	$93,237	$42,022	$40,287	$47,303
Per Cow	562	491	448	514

[1]Owned, not including leased or rented.
[2]Tillable, nontillable, and pasture owned.
[3]Owned, including tillable pasture.
[4]Including tillable pasture.
[5]Purchased and farm produced feed and supplies.

SOURCE: New York Dairy Farm Business Summary data, 1989. Does not include renters, includes dairy-cash crop farms.

Western Plain region includes Niagara, Erie, Orleans, Genesee, Wyoming Livingston, Monroe, Wayne, Ontario, Yates, Seneca, Cayuga, Onondaga, Oswego, and Madison Counties.

Plateau region includes Chautauqua, Cattaraugus, Allegany, Steuben, Schuyler, Chemung, Tompkins, Tioga, Cortland, Broome, Chenango, Otsego, Delaware, and Sullivan Counties.

Northern New York region includes Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties.

Oneida-Mohawk and Hudson region includes Washington, Saratoga, Rensselaer, Albany, Greene, Columbia, Dutchess, Orange, Fulton, Herkimer, Montgomery, Oneida, Schenectady, Schoharie, and Ulster Counties.

PRICES OF MILK COWS, SLAUGHTER COWS AND CALVES, NEW YORK 1989-91

Month	Milk Cows, $/Head			Slaughter Cows, $/Cwt.			Calves, $/Cwt.		
	1989	1990	1991	1989	1990	1991	1989	1990	1991
January	$ 920	$1,050	_____	$45.10	$48.90	_____	$ 96.00	$105.00	_____
February	930	1,070	_____	46.60	48.60	_____	105.00	102.00	_____
March	960	1,070	_____	45.00	48.70	_____	93.30	94.00	_____
April	960	1,070	_____	44.70	48.80	_____	103.00	119.00	_____
May	950	1,070	_____	46.00	50.00	_____	119.00	124.00	_____
June	960	1,080	_____	46.10	51.70	_____	105.00	121.00	_____
July	960	1,100	_____	45.80	50.70	_____	88.70	108.00	_____
August	950	1,130	_____	45.70	50.30	_____	87.90	106.00	_____
September	960	1,140*	_____	46.10	50.00*	_____	99.50	110.00*	_____
October	990	_____	_____	44.90	_____	_____	97.00	_____	_____
November	1,010	_____	_____	44.80	_____	_____	94.70	_____	_____
December	1,020	_____	_____	48.60	_____	_____	101.00	_____	_____

*Preliminary.

PRICES OF CORN, HAY, AND OATS, NEW YORK, 1989-1991

Month	Corn Grain*			Hay** Alfalfa			Hay** Other			Oats*		
	1989	1990	1991	1989	1990	1991	1989	1990	1991	1989	1990	1991
January	$2.96	$2.85	_____	$ 95	$ 96	_____	$ 59	$ 63	_____	$2.46	$1.54	_____
February	2.81	2.67	_____	80	90	_____	55	64	_____	2.27	1.46	_____
March	2.85	2.64	_____	94	85	_____	61	61	_____	2.14	1.55	_____
April	2.85	2.76	_____	86	90	_____	68	59	_____	2.39	1.55	_____
May	2.76	3.13	_____	88	85	_____	64	68	_____	1.93	1.37	_____
June	2.79	3.18	_____	93	85	_____	68	54	_____	1.61	1.39	_____
July	2.73	3.25	_____	70	84	_____	55	59	_____	1.32	1.34	_____
August	2.80	3.20	_____	63	69	_____	59	59	_____	1.22	1.18	_____
September	2.71	3.26	_____	86	78	_____	57	64	_____	1.26	1.25	_____
October	2.53	_____	_____	96	_____	_____	63	_____	_____	1.30	_____	_____
November	2.42	_____	_____	97	_____	_____	55	_____	_____	1.31	_____	_____
December	2.55	_____	_____	96	_____	_____	53	_____	_____	1.57	_____	_____

*Dollars per bushel.
**Dollars per ton.

SOURCE: New York Agricultural Statistics.

CASH LIVING EXPENDITURES OF 132 MINNESOTA FARM FAMILIES, 1988 (AVERAGE 3.8 PERSONS)

Item	Amount	Percent
Family Operating Expenses		
Food and meals out	$ 4,407	12
Medical & insurance	3,111	8
Operating and supplies	2,025	6
Clothing & materials	1,649	5
Church and charities	1,606	4
Auto (personal share)	1,498	4
Gifts and special events	1,420	4
Recreation	1,297	4
Personal care	1,205	3
Telephone and electricity	919	3
Education	894	2
House upkeep, etc.	310	1
Child care	198	1
House taxes and rent	178	..
Nonfarm interest	162	..
Total Family Operating Expenses	$ 21,615	57
Taxes, Capital Purchases, and Savings		
Personal taxes (income, SS, etc.)	$ 7,434	20
Personal share new auto	1,680	4
Other personal capital purchases	2,771	7
Life insurance	1,356	4
Partnership draws	432	1
Savings	2,617	7
Total Taxes, Capital Purch., Savings	$ 17,290	43
TOTAL OF ALL FAMILY LIVING COSTS	$ 37,905	100

Source: Minnesota farm business management record project.

DEFINITIONS

Debt Payments Per Cow - Debt payments actually made during the year divided by the average number of cows.

Available for Debt Service Per Cow - Cash farm receipts minus cash farm expenses (excluding interest paid) plus off-farm income minus personal withdrawals and family living expenses, divided by the average number of cows.

Cash Flow Coverage Ratio - Amount available for debt service per dollar of annual scheduled debt payments, computed by dividing the available dollars by the annual payments planned for that year. A high, positive ratio indicates a strong capacity to repay debt.

Debt Payments as Percent of Milk Sales - Amount of milk income committed to debt repayment, calculated by dividing scheduled debt payments by total milk sales ($).

Debt Per Cow - Total end-of-year debt divided by end-of-year number of cows.

Leverage Ratio - Dollars of debt per dollar of equity, computed by dividing total farm liabilities by total farm equity (nonfarm assets and liabilities are excluded).

Percent Equity - End-of-year farm net worth divided by end-of-year total farm assets (nonfarm assets and liabilities are excluded).

Current and Intermediate Debt/Asset Ratio - All farm liabilities on less than 10 year repayment divided by all farm assets excluding real estate and other long term assets.

Long Term Debt/Asset Ratio - Farm liabilities on 10 years or more repayment, including all real estate mortgages, divided by the value of farm real estate and other long term assets.

Percent Rate of Return on Equity - Return on equity capital divided by farm net worth. Includes the change in market value of all assets.

Percent Rate of Return on Investment - Return on all farm capital (no deduction for interest paid), divided by total farm assets. Includes the change in market value of all assets.

Capital Turnover - Average total farm assets per dollar of total accrual farm receipts. This indicates the number of years required for total farm income to equal total farm assets.

Real Estate Investment Per Cow - Average investment in real estate divided by average number of cows.

Machinery Investment Per Cow - Average machinery investment divided by average number of cows.

Total Farm Capital Per Cow - Average total farm assets divided by average number of cows.

DESCRIPTION OF SELECTED ALTERNATIVE FARM ACCOUNTING SYSTEMS, FALL 1990

System	Mail-In Systems		Cornell Account Books	On-Farm Microcomputer			
	Agrifax	Elfac II		Agrifax On-Farm	Red Wing General Ledger	Harvest Horizon	Datasphere Terra[9]
Type of System							
Cash or Accrual	Cash/Accrual	Cash/Accrual	Cash	Cash/Accrual	Cash/Accrual[6]	Cash/Accrual[7]	Cash/Accrual
Single or Double Entry	Single	Single	Single	Single	Double	Double	Double
Capabilities							
Income Statement	x	x	x	x	x	x	x
Balance Sheet	x	x[1]	x	x[5]	x	x	x
Enterprise Account	x	x[3]	--	x	x	x	x
Cash Flow	x	x	x	x[5]	x	x	x
Labor Records	x	x[2]	x	x[5]	x[6]	x	x
Business Analysis	x	x[1]	x[1]	x[5]	--	x	x
Check Writing	x[12]	x[3]	--	x	x[6]	x	x
Income Tax Worksheets	x	x	--	x	--	x	--
Depreciation Schedules	x	x[4]	x	x[5]	x[6]	x[8]	x
Cost(s)	Average $500-$600 per year fee. Additional options at extra cost.	Average $300-$400 per year fee. Additional options at extra cost.	$3.00 for Account Book & $0.50 for Inventory & Depreciation Book.	$495 to $1,095 purchase price. $495 for General Summary Module, support and additional Modules extra.	$495 purchase price.	$625 purchase price.	$1,995 purchase price.
Support	Support from local coordinator as needed.	Forte Enterprises[10]	Local Cooperative Extension Agent	Initial fee includes on-farm installation & training. Additional support is available.	Initial fee includes on-farm installation and phone assistance. Additional support is available. On-farm support varies among dealers.		
Additional Features							
Income Tax Preparation Service	Average $200-$300/year. Detailed or complex multiple entities extra.	Available from Forte Enterprises[10]	---	Average $200-$300 per year. Detailed or complex multiple entities extra.	Additional service available from some dealers.		
Hardware Compatability	---	---	---	IBM or compatibles.	IBM & compatibles.	IBM & compatibles.	IBM & compatibles.
Contact For Additional Information	Local Agricultural Credit Association or call (800)876-3227.	Forte Enterprises[10]	Local Cooperative Extension Agent	Local Agricultural Credit Association or call (800)876-3227.		Caroline Rasmussen[11] Razz Computing 127 Asbury Rd. Lansing, NY 14882 (607)257-4155	

Prepared by Wayne A. Knoblauch, Department of Agricultural Economics, Cornell University. Footnotes on reverse side.

FOOTNOTES

[1]Accounting of liabilities as accounts payable is recommended but not required. Assets may be entered annually. Not a traditional balance sheet.

[2]All labor transactions including withholding accounts are listed monthly.

[3]Available for an additional charge.

[4]Available for a $50 additional charge.

[5]Available as additional modules, business analysis and depreciation available through Association processed Agrifax.

[6]Available in separate computer programs at additional cost of $495 per program.

[7]Records as cash and accrual simultaneously. System desired is then selected before printing reports.

[8]Available in separate computer program at additional cost of $300 per program.

[9]For fruit and vegetable farms that require extensive enterprising capability. Individual modules available, prices vary between $300-675 per module.

[10]Contact Forté Enterprises, P.O. Box 309, Brandon, Vermont 05733-0309, (802)247-6514. Available only for Elfac II cooperators.

[11]Service area is primarily Central New York, dealers are located in other areas of the State. Call (612) 388-1106 for Red Wing, (317)724-4429 for Harvest, and (503) 297-9035 for Datasphere to find the dealer nearest you.

[12]Check with local association for availability.

SUGGESTED CLASSIFICATION OF FARM EXPENSES

This classification of farm expenses can be of help to you in two ways: (1) it suggests groupings that you can use from year to year and thus make valid annual comparisons, and (2) it is a checklist of items to prevent overlooking some expenses before closing your book for the year.

Column 2 Labor: Wages paid, insurance other payments.

Cash wages
Cash cost of board
Employee health ins.
Tenant house expenses
Social Security paid
Workers' compensation

Column 3 Feed: Dairy grains and concentrate

Grains
Processing
Minerals
Starters
Mixed feed
Supplements
Molasses
Vitamins

Other feed

Hay
Silage
Feed purchased for non-dairy enterprises

Column 4 Machine hire

Custom work
Spreading lime and fertilizer
Grain drying
Machine rental
Tiling
Pesticide application
Trucking

Column 5 Truck, tractor, and other machine expense

Antifreeze
Tires
Chains
Tractor repairs
Equipment repairs
Truck insurance
Parts
Truck repairs
Small tools
Truck registration

Column 6 Auto expense

Gasoline and oil
Repairs
Insurance
Service
Registration
Tires

Column 7 Gasoline and oil

Diesel fuel
Grease
Gasoline
Oil

Column 8 Breeding fees

Breeding fees
Semen
Breeding supplies

Column 9 Veterinary and medicine

Medicines
Veterinary fees
Vaccines
Veterinary supplies

Column 10 Other livestock expense

Bedding
Milkhouse fuel
Breeding assoc. dues
Registration and transfers
Dairy supplies
DHIC dues and fees
Washing materials
Milkhouse supplies
Whitewash

Column 11 Lime and fertilizer

Include cost of materials only; enter spreading under machine hire.

Column 12 Seeds and plants

Inoculation
Seeds
Plants
Seed treatment

Column 13 Spray and other crop expense

Bees expense
Harvest supplies
Certification
Planting supplies
Crop containers
Maple enterprise sup.
Fungicides
Twine and wire
Herbicides
Storage
Insecticides

Column 14 Land, buildings, and fence expense

Building repairs
Ground maintenance
Drainage repair
Roofing
Electrical repair
Water systems rep.

Column 15 Taxes

Farm real estate taxes, town, county, and school

Insurance

Crop insurance
Fire insurance
Farm liab. ins.
Livestock ins.

Column 16 Electricity, telephone

Column 17 Rent

Cash rent of land and buildings. Enter machine rent in col. 5 and cow rent in col. 10

Other

Accounting fees
General advertising
Consultant fees
Office supplies
Dues
Travel expenses
Farm account books
Enter all milk marketing expenses on page 76
Farm magazines

Column 19 Family living, non-farm draws

Contributions
Life insurance
Education expenses
Partners' salaries
Family draws
Personal health ins.
Family expenses
Medical expenses
Household expenses
Retirement fund pymts.
Income taxes
Stocks, bonds, and savings plans

Column 20 Payments on liabilities and capital purchases

Cash purchases of machinery, real estate, and cattle
Down payments
Installment payments
Loan payments
Mortgage payments

Pages 66-69 Labor record

Gross wages, Social Security withheld, all other deductions, net wage, and allowances.

Pages 70-72 Farm interest and debt payments

Beginning balances, interest payments, principal payments.

Page 73 Capital purchases and improvements

Machinery and equipment purchases
Major overhaul of machines
Buildings and land purchased
Major remodeling of farm buildings
New fences, tile drains, wells, roads
Dairy or breeding cattle, horses, and other livestock

Page 76 Deductions from milk check

CROP PRODUCTION
United States and New York
1989-91 a/

Crop	Acres Harvested 1989	Acres Harvested 1990	Acres Harvested 1991	Yield Per Acre 1989	Yield Per Acre 1990	Yield Per Acre 1991	Production 1989	Production 1990	Production 1991
United States	(million)			(bu.)			(million bu.)		
Corn grain	64.8	67.0	68.7	116.2	118.5	108.9	7,527	7,933	7,486
Sorghum	11.2	9.1	9.7	55.4	62.9	59.4	618	571	578
Oats	6.9	5.9	4.8	54.3	60.1	50.6	374	357	243
Barley	8.3	7.5	8.4	48.6	55.9	55.2	404	419	464
Wheat	62.2	69.4	57.7	32.7	39.5	34.3	2,037	2,739	1,981
Soybeans	59.5	56.5	58.6	32.3	34.0	33.5	1,924	1,922	1,962
New York	(thousand)			(bu.)			(thousand bu.)		
Corn grain	570	620	690	93	98	92	53,010	60,760	63,480
Oats	155	135	100	59	61	50	9,145	8,235	5,000
Wheat	130	145	110	45	49	49	5,850	7,105	5,390
				(tons)			(thousand tons)		
Corn silage	550	580	NA	13	15	NA	7,150	8,700	NA
All hay	2,080	1,980	1,950	2.18	2.21	2.19	4,538	4,377	4,280
Alfalfa b/	840	860	760	2.45	2.55	2.50	2,058	2,193	1,900

Source: USDA Crop Production and New York Crop Reporting Service.

a/ All 1991 data are preliminary and subject to revision. Estimates for the United States are as of November 1, 1991. New York estimates are as of October 1991, except for corn which is November 1991.

b/ Includes alfalfa mixtures.

Grain production in the United States in 1991 is projected to be below year-earlier levels. Corn for grain production of 7.5 billion bushels is 6 percent below the 1990 crop and is the smallest crop since 1988. Sorghum production is slightly above the 1990 level.

The production of oats is down 32 percent from the 1990 level. Barley production is up 11 percent from last year. Total feed grain production is down 5 percent from the 1990 level.

The soybean crop is about 2 percent above the 1990 crop. Wheat production of two billion bushels is down 28 percent from the 1990 crop.

The New York corn for grain crop is forecast at 63 million bushels, up 4 percent from 1990. New York corn yield is expected to be 92 bushels per acre, down from 98 in 1990. Wheat production is down 24 percent from 1990. The production of oats is estimated to be down 39 percent from 1990. Hay production is down 2 percent from the 1990 level.

CORN AND FEED GRAIN BALANCE SHEETS

Item	1988/89	1989/90	1990/91 (Prelim.)	1991/92 (Proj.)
	----- CORN (million bushels) -----			
Supply				
Beginning Stocks (Sept. 1)	4,259	1,930	1,344	1,521
Production	4,929	7,525	7,933	7,486
Imports	3	2	3	2
Total	9,191	9,458	9,281	9,009
Disappearance				
Feed and Residual	3,987	4,455	4,710	4,800
Food, Ind. and Seed	1,245	1,290	1,325	1,350
Total Domestic	5,232	5,745	6,035	6,150
Exports	2,028	2,369	1,725	1,575
Total	7,260	8,113	7,760	7,725
Ending Stocks (Aug. 30)	1,930	1,344	1,521	1,284
Season average farm price	$2.54	$2.36	$2.28	$2.15-2.55
	-- FEED GRAINS a/ (million metric tons) --			
Supply				
Beginning Stocks	133.6	65.9	45.5	47.7
Production	149.3	221.0	230.4	218.5
Imports	1.2	1.3	1.4	1.4
Total	284.2	288.2	277.4	267.6
Disappearance				
Feed and Residual	119.6	134.3	138.5	140.1
Food, Ind. and Seed	37.5	38.7	39.8	40.3
Total Domestic	157.1	173.0	178.3	180.4
Exports	61.1	69.7	51.4	46.9
Total	218.3	242.7	229.7	227.3
Ending Stocks	65.9	45.5	47.7	40.3

Source: Agricultural Supply and Demand Estimates, USDA, November 12, 1991.

a/ Marketing year beginning September 1 for corn and sorghum, June 1 for barley and oats.

The fall 1991 corn supply of 9.0 billion bushels is down 3 percent from the 1990 level and much smaller than the levels of 1985-87. Feed use is projected to increase 2 percent. Exports are projected to decrease 9 percent from 1990/91 levels and be the smallest since the 1986/87 marketing year. Total utilization is expected to be slightly below the 1990/91 level. Projected carryover in the fall of 1992 of 1.3 billion bushels is 16 percent below the fall 1991 carryover and the smallest since 1985.

Feedgrain supplies are dominated by corn, so changes in supply and demand are similar. The total supply of feedgrains is 4 percent below last year. Domestic feed use in the 1991/92 marketing year is projected to increase about 1 percent. Exports are projected to decrease 9 percent. Carryover stocks at the end of the 1991/92 marketing year are projected to be 40 million metric tons, down 16 percent from the 1991 level and the lowest since 1985.

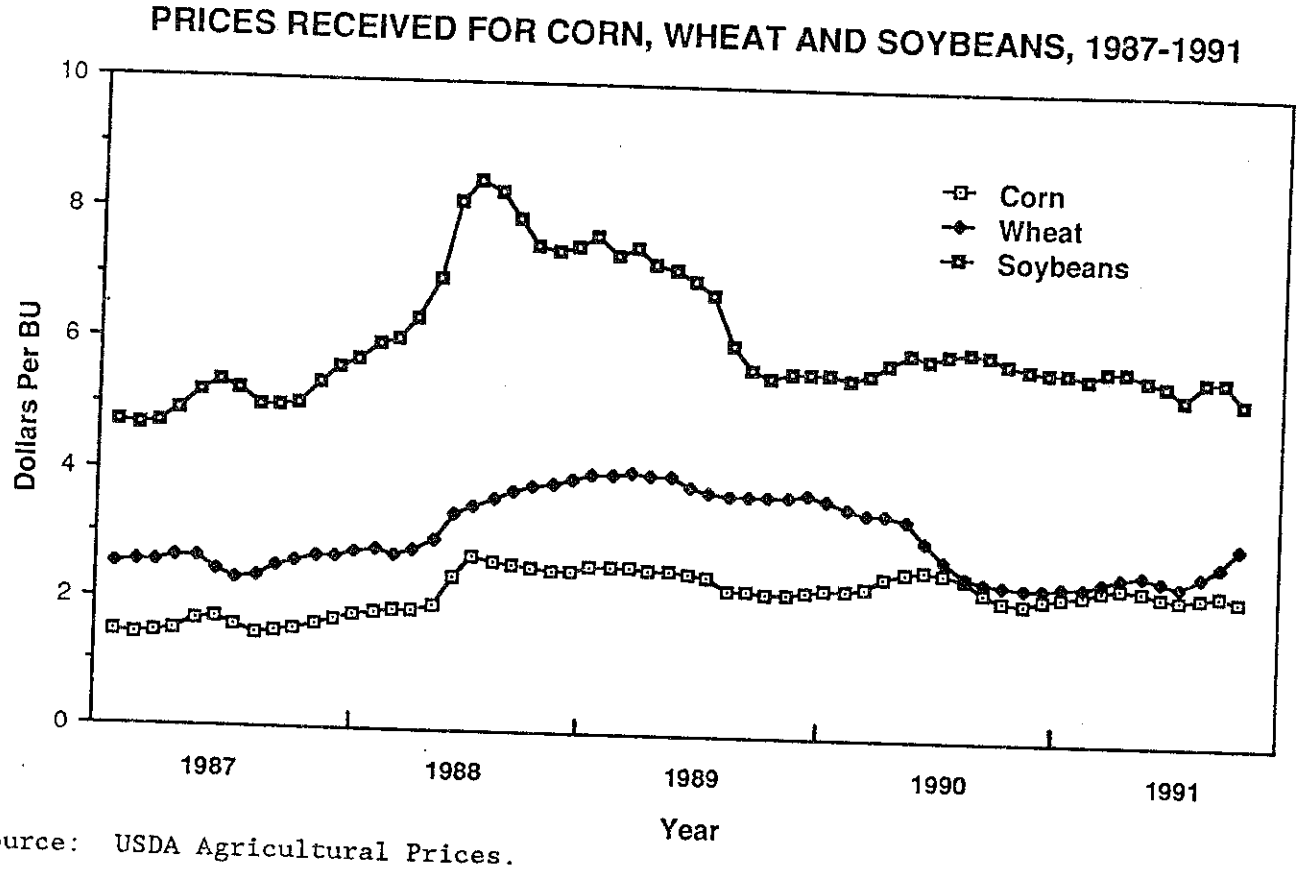
WHEAT AND SOYBEAN BALANCE SHEETS

Item	1988/89	1989/90	1990/91 (Prelim.)	1991/92 (Proj.)
	----- WHEAT (million bushels) -----			
Supply				
Beginning Stocks (June 1)	1,261	702	536	866
Production	1,812	2,037	2,736	1,981
Imports	23	23	37	39
Total	3,096	2,762	3,309	2,886
Disappearance				
Food	715	753	796	800
Seed	103	100	90	97
Feed and Residual	157	139	489	350
Total domestic	975	992	1,376	1,247
Exports	1,419	1,233	1,068	1,125
Total	2,394	2,225	2,444	2,372
Ending Stocks (May 31)	702	536	866	514
Season average farm price	$3.72	$3.72	$2.61	$2.75-2.95
	----- SOYBEANS (million bushels) -----			
Supply				
Beginning Stocks (Sept. 1)	302	182	239	329
Production	1,549	1,924	1,926	1,962
Imports	4	3	2	5
Total	1,855	2,109	2,167	2,296
Disappearance				
Crushings	1,058	1,146	1,180	1,235
Exports	527	623	560	650
Seed, Feed	59	57	55	53
Residual	29	44	43	43
Total	1,673	1,870	1,838	1,981
Ending Stocks (Aug. 30)	182	239	329	315
Season average farm price	$7.42	$5.69	$5.75	$5.00-6.00

Source: Agricultural Supply and Demand Estimates, USDA, November 12, 1991.

The 1991 United States wheat supply of 2.9 billion bushels is 13 percent below the 1990 level. Domestic food use is projected to increase slightly. Feed use is projected to drop 28 percent. Exports are projected to increase 5 percent. Carryover on May 31, 1992 is projected to be 514 million bushels, down 41 percent from the 1991 level. If realized, this will be the smallest wheat carryover in decades.

The total soybean supply is 2.3 billion bushels, up 6 percent from 1990 and the largest supply since 1987. Crushings are projected to be up 5 percent and exports to increase 16 percent from year-earlier levels. Carryover in the fall of 1992 is projected to be about 315 million bushels, 4 percent below the 1991 carryover.



Source: USDA Agricultural Prices.

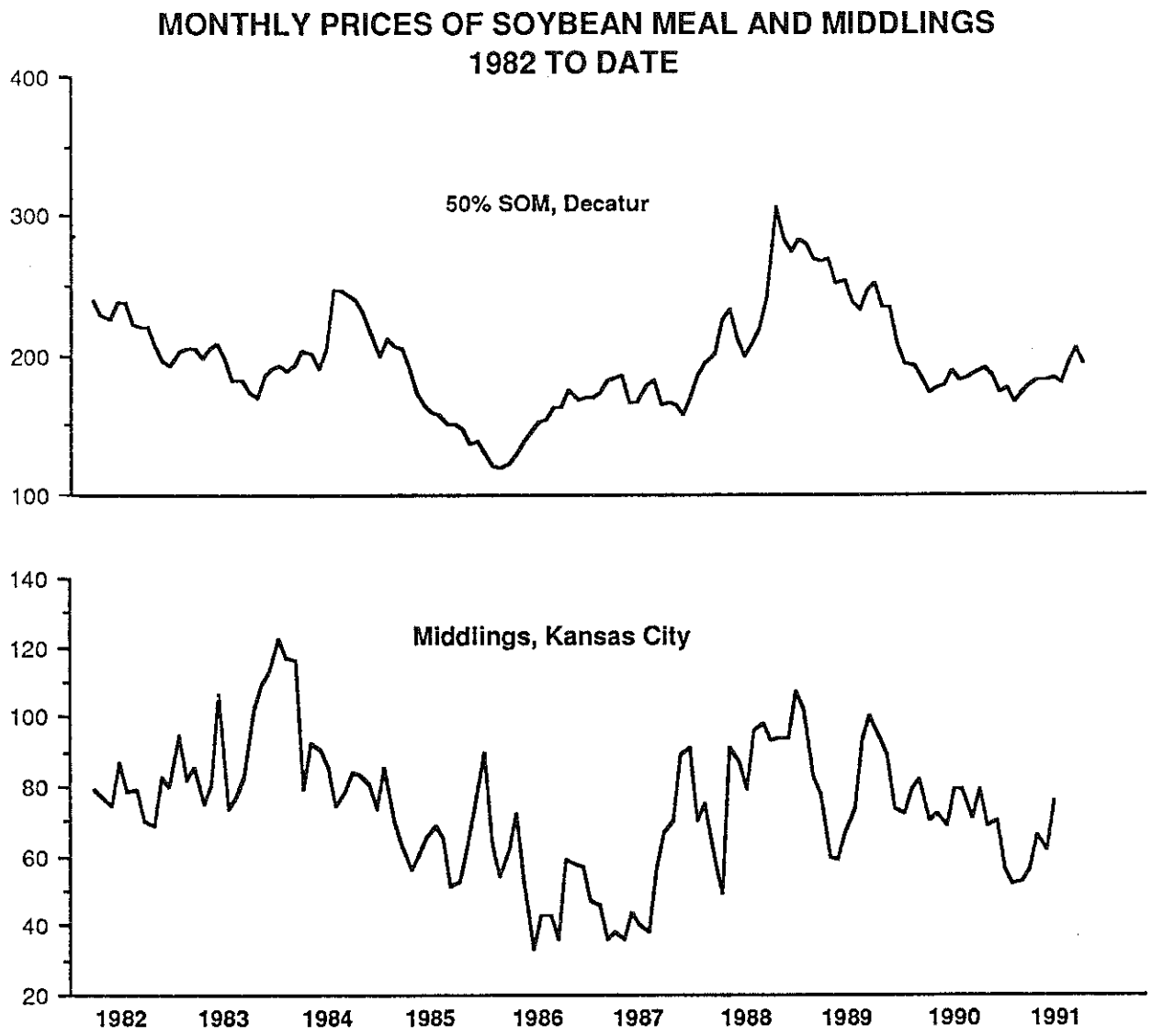
Soybean prices declined from around the $6.00 level in mid-1990 to less than $5.50 in July 1991. After increasing due to the drought, they fell again in the fall of 1991. The October 1991 average price received by U.S. farmers was $5.33, $0.54 per bushel below the level of October 1990. USDA's projection for the season average price of 1991 crop soybeans is $5.00 to $6.00, with a mid point $0.25 below the average price for the 1990 crop.

Wheat prices declined quite steadily from the fall of 1989 to the fall of 1990. Prices have strengthened during 1991 due to lower production. The October 1991 price received by U.S. farmers was $3.08, $0.65 above the year-earlier price. The New York price of $3.04 was $0.52 above the October 1990 level.

The projected season average price for the 1991 U.S. wheat crop is $2.75 to $2.95. The mid point is $0.21 above the average price received by farmers for the 1990 crop.

Corn prices have fluctuated around the $2.35 level since late 1990. The U.S. average price received by farmers in October 1991 was $2.29, $0.10 above the year-earlier level. The New York price in mid October was $2.42 per bushel, $0.28 below the average level for the entire month of October 1990.

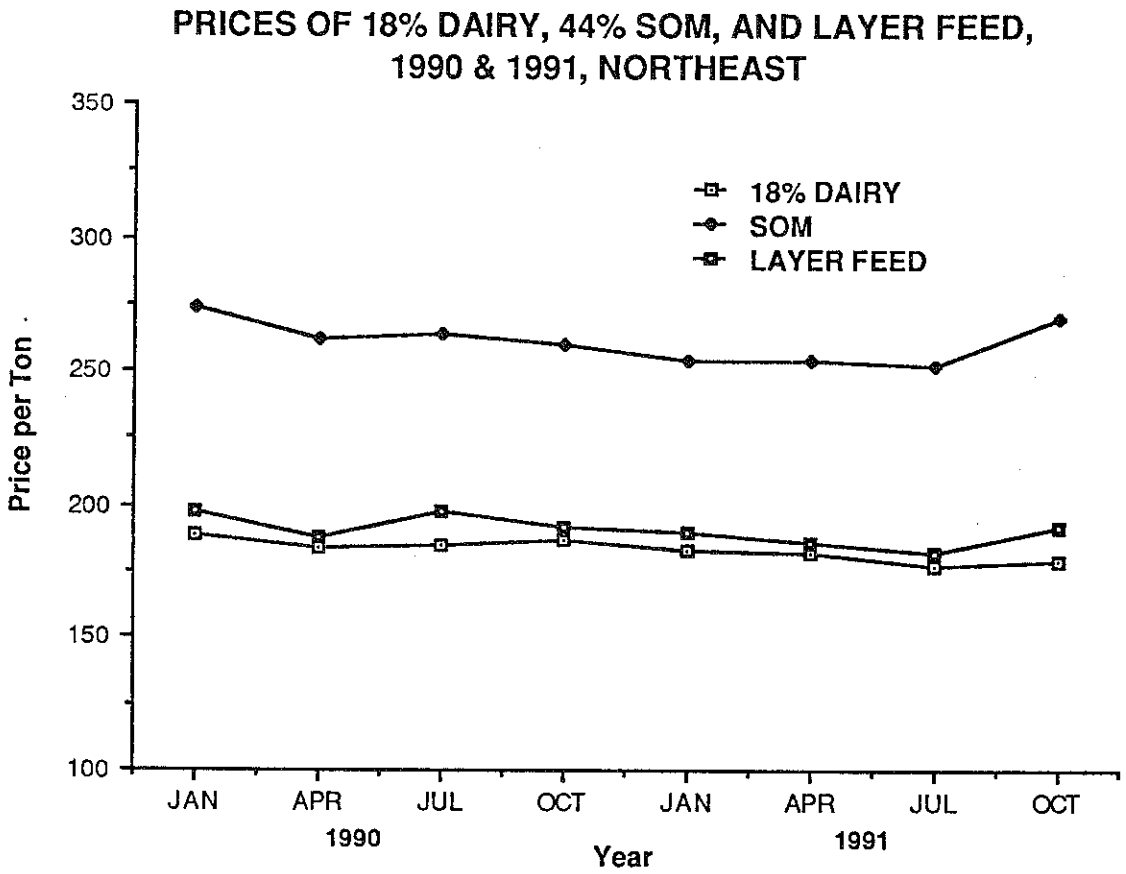
The mid November USDA projection of the season average price received by U.S. farmers for the 1991 corn crop was $2.15 to $2.55 per bushel. The mid point is $0.07 above the season average price for the 1990 crop.



Source: USDA Feed Situation and Feedstuffs.

Prices for soybean oil meal (50%, Decatur) generally increased during 1991 from less than $170 in January to over $200 in September, but declined slightly in October. October 1991 prices were about $10 above year-earlier levels. Prices are likely to rise seasonally and be slightly above year-earlier levels during the winter and spring of 1992.

Prices for byproducts such as middlings continue to fluctuate widely and are not closely related to the prices of the grains from which they are derived. Prices of these byproducts in the fall of 1991 were above year-earlier levels.



Source: USDA Agricultural Prices and New York Crop Reporting Service.

Feed prices declined during the first half of 1991 but then increased in the fall of 1991. In October 1991, prices for 18% dairy feed were about $8 per ton below the prices of a year earlier. Layer feed prices were the same as the levels of a year earlier. In October 1991, prices of 44% soybean meal were about $10 per ton above levels of a year earlier.

	1991			1992		
Month	18% Dairy	44% SOM	Layer feed	18% Dairy	44% SOM	Layer feed
Jan.	183	254	190	____	___	____
Apr.	182	254	186	____	___	____
July	177	252	182	____	___	____
Oct.	179	270	192	____	___	____

Only quarterly data are available after February 1986, and those data are for New York and New England combined.

Layer feed and 18% dairy prices in the first half of 1992 are likely to be close to the levels of the first half of 1991. Soybean meal prices in the first half of 1992 are likely to be about the same as they were a year earlier.

1992 DAIRY OUTLOOK

Overview

POSITIVE FACTORS

- Higher Federal Order Milk Prices - first half up an average of 80¢ to $1.00/cwt over first half of 1991
- Continued Strong Cull Cow and Dairy Replacement Prices
- Stable to Slightly Higher Feed Costs
- Relatively Low CCC Inventories of Cheese and NFDM
- Lower Interest Rates

NEGATIVE FACTORS

- Minimum 11.25 cents/cwt Refundable Assessment - probably 13¢/cwt
- Slow Growth Economy
- Relatively Tight Credit Markets
- Short Forage Supply in Some Areas

UNCERTAINTIES

- Milk Production in Major Producing Regions
- Commercial Demand for Dairy Products
- M-W Replacement

NEW YORK DAIRY SITUATION AND OUTLOOK
1989, 1990, Preliminary 1991, and Projected 1992

Item	Year				Percent Change	
	1989	1990	1991	1992	90-91	91-92
Number of milk cows (thousand head)	776	768	757	749	-1.4	-1.1
Milk per cow (lbs.)	14,267	14,456	14,720	14,950	+1.8	+1.6
Total milk production (million lbs.)	11,071	11,102	11,143	11,198	+0.4	+0.5
Blended milk price ($/cwt.)[a]	13.10	13.44	11.76	12.15	-12.5	+3.3
Index of prices paid by dairy farmers	168	170	173	175	+1.8	+1.2

[a]New York-New Jersey blend price, 201-210 mile zone, 3.5 percent fat, this price excludes any premiums or assessments. The effective blend price after milk price assessments is $13.10 for 1989; $13.43 for 1990; and $11.71 for 1991, assuming no refund.

Table 1
U.S. Milk Supply and Utilization
1984-1992

	1984[e]	1985	1986	1987	1988[e]	1989	1990[b]	1991[c]	1992[d e]
Supply									
Cow Numbers (thous.)	10793	10981	10773	10327	10262	10126[a]	10127[a]	10034	9943
Production/Cow (lbs.)	12541	13024	13285	13819	14145	14244	14646[a]	14820	15131
					(billion pounds)				
Production	135.4	143.0	143.1	142.7	145.2	144.2[a]	148.3[a]	148.7	150.4
Farm Use	2.9	2.4	2.4	2.3	2.2	2.1[a]	2.1	2.0	2.0
Marketings	132.5	140.6	140.7	140.4	143.0	142.1	146.2	146.7	148.4
Beginning Commercial Stocks	5.2	4.9	4.6	4.2	4.6	4.3	4.1	5.1	4.7
Imports	2.7	2.8	2.8	2.5	2.4	2.5	2.7	2.5	2.6
TOTAL SUPPLY	**140.4**	**148.3**	**148.1**	**147.1**	**150.0**	**148.9**	**153.0**	**154.3**	**155.7**
Utilization									
Commercial Disappearance[a]	126.9	130.5	133.3	135.7	136.6	135.4	138.9	140.1	142.6
Ending Commercial Stocks	4.9	4.6	4.2	4.6	4.3	4.1	5.1	4.7	4.4
Net Government Removals[a]	8.7	13.3	10.8	6.8	9.1	9.4	9.0	9.5	8.8
TOTAL USE	**140.4**	**148.3**	**148.1**	**147.1**	**150.0**	**148.9**	**153.0**	**154.3**	**155.7**

Source: Dairy Situation and Outlook, Milk Production, and Dairy Market News, U.S. Department of Agriculture.

[a] Revised.
[b] Preliminary.
[c] Based on preliminary USDA data and Cornell estimates.
[d] Projected by Andrew Novakovic.
[e] Leap year.

The U.S. Dairy Situation and Outlook

Milk Supplies

Sharply lower milk prices beginning at the end of 1990 made projections of 1991 milk production the subject of a great deal of speculation a year ago. Early in 1991 analysts were divided, with some projecting extreme reductions in farm and cow numbers and others projecting gains of as much as 2 billion pounds in national milk production. As we approach the end of 1991, it is now clear that neither of the more extreme forecasts were accurate. Dairy farmers have been more resilient than the "bears" thought, but by the same token lower prices have taken a greater toll than the "bulls" projected.

As shown in Table 1, national milk production will total about 148.7 billion pounds for the year, less than a 0.3% increase over 1990. Other than the years when the Milk Diversion or Dairy Termination Programs were in effect, this is the smallest annual increase in milk production since 1978.

The increase in production per cow of 1.2% is estimated to be almost offset by a 0.9% decline in the national dairy herd. Milk yields usually increase about 100 pounds per year more than the 174 pound increase estimated in 1991. Thus, it would appear that at least part of the reaction to lower milk prices involved cutting back on feeding. Declines in cow numbers probably represent approximately normal declines in farm numbers as well as farmers who sold some cows to maintain a positive cash flow.

Compared to year earlier levels, national milk production was strongest during the first quarter of the year, when they were up 2%. Milk production was flat in the second quarter and declined about 0.9% in the third quarter, but it appears that production will be about level in the fourth quarter. Given that fourth quarter 1990 milk production was strong, sharply above 1989 levels, this raises concerns that production will be strong enough in early 1992 to again depress prices close to the support level.

None of the major producing states had a particularly strong year and some of the Midwestern states had notably poor years. California led the major states with a projected increase of about 2.1%, a third or more lower than its historical growth rate. Growth in Pennsylvania was comparable to California. In large part, this reflects a rebound from an unusually poor year in 1990; it is also notable that Pennsylvania's growth is largely due to better than average gains in production per cow, despite serious drought conditions in the western part of the state. With Minnesota declining in milk production by over 2%, this year Pennsylvania moves to the number four spot among milk producing states. Iowa experienced a decline in milk production of almost 4%, and Wisconsin was down about 1%. Although Iowa production has been sharply up in recent years, this decline is consistent with Iowa's erratic growth record. Far more significant is Wisconsin's decline. This is in sharp contrast with Wisconsin's history of steady growth at about the national average rate. It is probably true that Wisconsin's smaller farms found it more difficult to cope with low prices than the larger farms in other parts of the U.S. Farm size by itself is no perfect indicator though, as the only other state in the top ten to experience a decline was Texas, which decreased almost 2%. This is a substantial amount for a state that had been booming only a few years earlier. New York production grew at the same rate as the

national average. New England states, led by Vermont, are projected to increase about 1% for the year.

Low milk prices in the first half of 1992 should continue to constrain production growth; however, on average, it is expected that 1992 will be less financially difficult. Our forecast, as shown in Table 1, is for milk production to exceed 150 billion pounds in 1992, with about a 2% increase in production per cow and a 1% decline in cow numbers.[1] Prices will be very sensitive to changes in production over the course of the year. If production falters significantly early in the year, prices could move more substantially in the early summer. In this sort of market, producers who can weather the storms can end the year with positive returns; however there will be others who do not survive the spring.

Milk Utilization

Commercial disappearance of all milk in the U.S. ended last year, 1990, on a sour note. With 1991 getting off to a poor start, USDA estimates through August indicate that commercial disappearance is off 0.4% compared to the first eight months of 1990. It appears that total sales will be showing signs of recovery by year end. Commercial disappearance was up 2.1% during the summer months, and year over year gains should be better by comparison to the poor showing of the last half of 1990. As shown in Table 1, we project that commercial disappearance for the year will be up a modest 0.9%.

Based on USDA's August data, increases in commercial disappearance are led by some products that have historically been down, including fluid milk, butter, and ice cream. The largest growth item among the major products has been frozen yogurt, which is up 20% for the year. Contrary to typical trends, cheese sales have been lackluster this year, with cheddar types down 2% and other types up only 1% in total. Possibly this weak showing for cheese and stronger showing for some other traditional products is reflecting that the recession induces more people to eat more meals at home.

Higher retail price inflation and a deepening recession are likely factors explaining poor sales in late 1990 and early 1991. Although the recession is still a factor, retail price inflation has moderated substantially for dairy products; in fact, on average, retail prices are lower today than they were a year ago.

For 1992, we project commercial disappearance to be up about two billion pounds, for an increase of 1.5% (on a daily average basis).[1] The ability of the country to pull itself out of the recession will impact dairy product sales. Our forecast assumes that the situation will at least be improved, if not totally turned around.

Readers will note from Table 1 that USDA has revised its commercial disappearance estimates. This revision is due to an update of how it estimates milk equivalent net removals of butter, nonfat dry milk, and cheese under the price support program. Because commercial disappearance is calcu-

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[1] Because 1992 is a leap year, all annual totals are about 0.3% higher than they would be on a daily average basis.

lated as the residual of all sources of supply less net government removals and changes in commercial stocks, the revised net removal numbers cause changes in commercial disappearance as well. In general, by adding a new, albeit small, weighting factor to nonfat dry milk, milk equivalent net removals are now higher and commercial disappearance is correspondingly lower.

The Dairy Price Support Program

As indicated above, although there is no change in the actual quantities of butter, cheese, and nonfat dry milk purchased, USDA has recalculated its estimates of how much milk is represented by the sum of these product quantities. Using its old method, milk equivalent net removals were about constant from 1988 to 1991. With the new method, net removals were largely unaffected in 1988 and 1990, but are about half a billion pounds higher in 1989 and 1991. In both years, the increase reflects sales of cheese and nonfat dry milk, which were almost non-existent in the other years. Some of the increase in cheese sales represents cheese purchased at market prices for use in federal food assistance programs; such purchases are not included in the milk equivalent calculation. Regardless, sales of cheese under the price support program are unquestionably up for the year, but virtually all of this occurred during the first six months. We project net removals to be somewhat lower in 1992. Of course, this hinges on our projection that moderate, average price changes will benefit commercial sales more than production.

Milk Prices

As shown in Table 2, U.S. farm prices in 1991 are estimated to average $1.58 per cwt lower than in 1990, the first year since 1986 that the average milk price was lower that the year before. As a result of seven months of prices below $11.00 per cwt, the benchmark M-W price (at 3.5% fat test) is estimated to average $11.05 per cwt for the year, down $1.16 from 1990.

In 1991, the butterfat differential calculation was changed. One element of the change was to use an alternative wholesale butter price in the differential formula. In the past we have carried the so-called Chicago wholesale price. With the change in the formula, we have decided to substitute a similar but different price taken from the Chicago Mercantile Exchange. Using this new price, which tends to be somewhat lower than the other price series, the wholesale price of grade A butter is estimated to average about 98¢ for 1991; basically equal to the CCC purchase price and a slight drop from 1990. Although wholesale butter prices typically strengthen during the summer months, when demand for ice cream is strongest, the "seasonal" increase this year was unusually large and late. The price peaked sharply in September and held until late November. Retail prices have remained reasonably stable, and preliminary estimates indicate a decline in the annual average retail price.

Unlike last year's unusual and large fluctuations in wholesale prices for cheese, this year's activity was more stable and has followed more normal patterns. In May, the National Cheese Exchange price for cheese began to rise from $1.15 to its seasonal peak of $1.35 in October. Our estimate of $1.20 for the year is about 11¢ lower than last year. Retail prices of cheese have been only sporadically available from federal government sources; so this year we have begun to report the consumer price index for cheese.

The consumer price index shows the average retail price of all dairy products dropping 5%, the first drop in seven years. Cheese prices are estimated to have increased 1.4%, while whole milk prices out-paced the all products average at nearly 5%. This is in sharp contrast to the substantial increases in 1990, and probably is in part a correction to an overreaction last year. Retail prices for all foods are estimated to increase nearly 4%, and the average rate of inflation for all consumer prices approaches 6%. Thus, dairy product price inflation is once again well below that of other food products and the general inflation rate.

Dairy Policy in 1991 and Beyond

There was a lot of noise but not much action on the dairy policy front in 1991. Despite the fact that 1991 was one of the most difficult years for dairy farmers in quite some time, Congress and the Administration could not agree that it was time for a change. Although some members of Congress worked to find a way to get higher prices for producers, the Administration held a hard line on increases in the support price. For that matter it is doubtful that a majority of Congress was ready to approve new legislation anyway. Legislation did come to a vote in the Senate just before Thanksgiving and was narrowly defeated. A similar proposal never got as far as a vote in the House. Prospects for new price support legislation in 1992 are extremely dim, election year politics and poor prices in the spring notwithstanding.

Although nothing was scheduled to change in 1991, the 1990 farm bill did call for a variety of action related to federal milk marketing orders. Late in 1991 the Secretary did announce a recommended decision on the national federal order hearing conducted during the fall of 1990. The decision, which will be up for approval by dairy farmers in 1992, does not make the major changes sought by some farmers in the upper Midwest and feared by most farmers elsewhere. However, the Secretary has opened the door for further changes by inviting additional comments from the public which could lead to more hearings. At a minimum, the dairy industry will face a new national hearing to come up with a replacement of the M-W price as the basic price mover in federal orders. USDA would like to replace the M-W this summer; however, it may be somewhat later in the year before all the steps in the process of amending federal orders can be completed. One way or another, it is almost a sure bet that the dairy industry will have to get used to a new method for setting basic prices under federal orders in 1992. Further changes to federal orders may be discussed in 1992, but it is unlikely that any other changes would be implemented until later, if at all.

One of the few concrete things that will definitely happen is that farmers who marketed less milk in 1991 will be able to apply for a refund of their 5¢ 1991 assessment in early 1992, and for all of 1992 they will be paying a new, higher assessment. As of January 1, 1992, farmers will pay 11¼¢ on each hundredweight they market and this will increase slightly on or about April 1. The increase in April will reflect the value of 1991 refunds, which, by law, must be recouped in 1992. Our estimate is that the new assessment, which will be in effect for the remainder of 1992, will be 13¢ to 14¢. Assessments paid in 1992 will be refunded in 1993 if producers can demonstrate that their 1992 marketings are less than what they sold in 1991. Farmers should see their local ASCS office for details.

Table 2
National Farm Prices for Milk;
CCC Purchase, Wholesale, and Retail Prices for Cheddar Cheese, Butter, and Nonfat Dry Milk;
and Selected Retail Price Indices
1984-1991

	1984	1985	1986	1987	1988	1989	1990[a]	1991[b]
Farm Milk ($/cwt.):								
All Milk (ave. fat)	13.46	12.76	12.51	12.54	12.26	13.56	13.73	12.15
M-W (3.5%)	12.29	11.48	11.30	11.23	11.03	12.37	12.21	11.05
Support (3.5%)	12.31	11.69	11.31	11.00	10.33	10.47	9.89	9.92
Milk Price:Concentrate Value	1.65	1.74	1.79	1.84	1.58	1.65	1.72	1.56
Assessment	.50	.13	.37	.19	.03	.00	.01	.05
Cheddar Cheese, Blocks ($/lb.):								
CCC Purchase	1.348	1.279	1.250	1.219	1.1525	1.166	1.111	1.110
Wholesale, National Cheese Exchange	1.341	1.248	1.260	1.213	1.210	1.350	1.315	1.204
Butter ($/lb.):								
CCC Purchase, Grade A or higher, Chicago	1.433	1.415	1.398	1.373	1.320	1.263	1.017	.983
Wholesale, Gr. A, Chicago Merc. Ex.	1.477	1.402	1.437	1.393	1.316	1.269	1.006	.983
Retail, Grade AA, sticks (1 lb.)	2.107	2.121	2.151	2.170	2.158	2.133	1.992	1.927
Nonfat Dry Milk,								
Extra Grade, Unfortified ($/lb.):	.910	.843	.808	.783	.728	.774	.831	.850
Wholesale, Central States	.909	.841	.806	.793	.802	1.055	1.006	.942
Retail Price Indices (1982-84=100.0):								
Whole Milk	100.7	102.3	101.7	103.6	106.0	114.3	126.7	122.1
Cheese	101.3	103.2	103.5	105.9	109.2	117.6	131.2	132.6
All Dairy Products	101.3	103.2	103.3	105.9	108.3	115.6	126.5	124.8
All Food	103.2	105.6	109.0	113.5	118.2	125.1	132.4	136.3
All Consumer Prices	103.9	107.6	109.6	113.6	118.3	124.0	130.7	136.0

Source: Dairy Situation and Outlook, Dairy Market News, and Federal Milk Order Market Summaries, U.S. Department of Agriculture.

[a] Revised.
[b] Estimated by Andrew Novakovic from federal data for part of the year.

Number of Producers Delivering Milk
Northeast Federal and State Marketing Orders*
1985-1991

Markets	1985	1986	1987	1988	1989	1990[a]	1991[b]
New York-New Jersey	16521	15876	14731	13954	13570	13261	12742
New England	6669	5891	5412	5182	4934	4893	4850
Middle Atlantic	6712	6586	6406	6196	5741	5509	5454
E. Ohio-W. Pennsylvania	6103	5885	5605	5478	5175	4889	4682
Western New York	1211	1161	1088	997	919	853	840
Regional Total	36897	35399	33242	31807	30339	29405	28568

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

*Simple average for 12 months.

[a]Revised.

[b]Projected.

Producer numbers in northeast Federal and State order markets declined by 837, or 2.8 percent in 1991 following a 3.1 percent drop in 1990.

For the period from 1985 to 1991, producer numbers in the northeast orders have declined by 8329 or 23 percent, resulting in an average annual attrition rate of 3.8 percent over the period.

The most recent year-to-year decline in producer numbers is lower than expected, given the sharply lower milk price that prevailed during the first half of 1991.

A further decline of 3 to 4 percent in producer numbers is expected in these markets in 1992.

Receipts of Milk from Producers by Regulated Handlers, Million Pounds
Northeast Federal and State Marketing Orders
1985-1991

Markets	1985	1986	1987	1988	1989	1990[a]	1991[b]
				(million pounds)			
New York-New Jersey	11689	11729	11339	11222	11096	11125	11062
New England	5399	5341	5173	5118	4975	5114	5296
Middle Atlantic	6239	6412	6281	6199	5908	5899	6218
E. Ohio-W. Pennsylvania	3866	3884	3842	3920	3687	3547	3490
Western New York	1305	1334	1304	1283	1207	1199	1134
Regional Total	28406	28603	27838	27742	26897	26884	27203

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

[a]Revised.

[b]Projected.

Total receipts of milk from northeast milk producers increased modestly in 1991 following a year of stable production in 1990. Producer receipts for the four federal and one state order markets were up 1.2 percent or 319 million pounds.

Although producer receipts increased overall for the region, there was considerable variation between markets. Receipts increased 3.6 percent in the New England market and 5.4 percent in the Middle Atlantic order, while declining fractionally in New York-New Jersey, and registering substantial declines in E. Ohio-W. Pennsylvania and Western New York. Receipts in the E. Ohio-W. Pennsylvania order continued to be affected by the shift of a major processing plant into a neighboring order outside of the region. Receipts in that market would have increased for the year if that plant had continued to be pooled in the E. Ohio-W. Pennsylvania order.

In 1992, receipts in the five orders are expected to be stable to somewhat lower, based on winter feed supply shortages in some areas and a smaller milking herd.

Producer Milk Used in Class I by Regulated Handlers, Million Pounds
Northeast Federal and State Marketing Orders
1985-1991

Markets	1985	1986	1987	1988	1989	1990[a]	1991[b]
				(million pounds)			
New York-New Jersey	4662	4665	4606	4607	4587	4487	4477
New England	2793	2814	2813	2815	2811	2810	2760
Middle Atlantic	2869	2986	3152	3084	3109	3131	3159
E. Ohio-W. Pennsylvania	2033	1985	2023	2052	2033	1927	1869
Western New York	443	437	427	495	513	501	494
Regional Total	12800	12887	13021	13053	13053	12856	12759

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

[a]Revised.

[b]Projected.

Fluid milk sales in the Northeast order markets were down 0.8 percent or 97 million pounds in 1991 following a 1.5 percent decline the previous year.

Class I fluid sales in the E. Ohio-W. Pennsylvania Federal Order were down 3 percent due to the shift of a major processing plant to an adjoining order. Fluid sales stabilized in the New York-New Jersey market in 1991 following a 2 percent drop the previous year which was partially attributed to adverse media coverage. Class I sales were 1.8 and 1.4 percent lower, respectively, in the New England and Western New York orders.

Fluid sales are expected to increase modestly in 1992 as a result of lower retail prices and an improving economy.

Producer Milk Used in Class I as Percentage of All Producer Milk Received
by Regulated Handlers
Northeast Federal and State Marketing Orders
1985-1991

Markets	1985	1986	1987	1988	1989	1990[a]	1991[b]
				(percent)			
New York-New Jersey	40	40	41	41	41	40	41
New England	52	53	54	55	56	55	52
Middle Atlantic	46	47	50	50	53	53	51
E. Ohio-W. Pennsylvania	53	51	53	52	55	54	54
Western New York	37	35	36	39	42	42	42

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

[a]Revised.

[b]Projected.

The factors that affect Class I fluid utilization include the volume of fluid milk sales and the total receipts of milk in a market.

Fluid utilization was generally stable in three of five Northeast order markets for 1991. Lower fluid sales and increased producer receipts caused fluid utilization to drop three percentage points in the New England Order, while a five percent increase in receipts for the Middle Atlantic Order caused fluid utilization to drop by 2 percentage points.

Class I fluid utilization is expected to remain stable to marginally higher in 1992.

Minimum Class I Prices for 3.5% Milk
Northeast Federal and State Marketing Orders
1985-1991

Markets	1985	1986	1987	1988	1989	1990	1991[a]
				($/cwt)			
New York-New Jersey[1]	13.97	13.63	13.89	13.41	14.49	15.52	13.16
New England[2]	14.00	13.62	13.86	13.38	14.46	15.49	13.23
Middle Atlantic[3]	14.50	14.13	14.37	13.89	14.97	16.00	13.74
E. Ohio-W. Pennsylvania[3]	13.67	13.20	13.34	12.86	13.94	14.97	12.71
Western New York[3]	14.43	14.09	14.35	13.45	14.24	15.27	13.00

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

[a]Projected.

[1]201-210 mile zone.

[2]21st zone.

[3]Priced at major city in the marketing area.

Minimum Class I fluid milk prices in the northeast federal order markets declined an average of $2.28 per hundredweight or a 15 percent increase over the previous two-year period.

Just as record high Minnesota-Wisconsin prices in November and December of 1989 had carried over to provide record high Class I prices in January and February of 1990, so the sharply lower Minnesota-Wisconsin prices in November and December of 1990 were responsible for record level price declines for the first quarter of 1991. Fluid milk prices averaged $4.32 per cwt less during the first quarter of 1991 than for the same period in 1990.

Fluid milk prices in the northeast order markets during the first quarter of 1992 are expected to average $1.30 per hundredweight above the first quarter of 1991. Due to uncertainties over which price mover will be used to replace the M-W sometime in 1992, price forecasts for the year are tenuous at best. Assuming that the new mover follows patterns similar to the M-W, fluid prices are expected to average 50 to 60 cents above 1991 levels.

Minimum Class II/III Prices for 3.5% Milk
Northeast Federal and State Marketing Orders
1985-1991

Markets	1985	1986	1987	1988	1989	1990	1991[a]
				($/cwt)			
New York-New Jersey[1]	11.48	11.30	11.23	11.03	12.37	12.21	11.03*
New England[2]	11.48	11.30	11.23	11.03	12.37	12.21	11.03*
Middle Atlantic[3]	11.50	11.32	11.25	11.05	12.39	12.23	11.14*
E. Ohio-W. Pennsylvania[4]	11.48	11.30	11.23	11.03	12.37	12.21	11.10
Western New York[3]	11.43	11.25	11.18	10.98	12.32	12.16	11.04

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

*Class II price prior to April 1, 1991, Class III price effective April 1, 1991.

[a]Projected.

[1]201-210 mile zone.

[2]21st zone.

[3]Class II in a two-price system, priced at major city in the marketing area.

[4]Class III.

On April 1, 1992, the New York-New Jersey, New England, and Middle Atlantic federal marketing orders changed to a three-class price system. Under three-class pricing, Class I remains the fluid class, Class II includes "soft products" such as cottage cheese and sour cream and Class III includes the "hard products," butter, nonfat dry milk, and cheese.

The Class II (soft product) price that went into effect on April 1 for three northeast federal orders averaged $11.49 per cwt for the nine-month period April-December, and averaged $11.28 for twelve months in the E. Ohio-W. Pennsylvania order.

The Class II/III manufacturing milk price declined by approximately $1.13/cwt, or 9.3 percent in 1991, following a 1.6 percent decline in 1990.

In 1992, the Class III manufacturing milk price is expected to increased by approximately 20 cents per cwt in the northeast order markets.

Minimum Blend Prices for 3.5% Milk
Northeast Federal and State Marketing Orders
1985-1991

Markets	1985	1986	1987	1988	1989	1990	1991[a]
				($/cwt)			
New York-New Jersey[1]	12.32	12.09	12.18	11.83	13.10	13.44	11.76
New England[2]	12.67	12.43	12.56	12.20	13.45	13.95	12.06
Middle Atlantic[3]	12.90	12.66	12.84	12.44	13.75	14.27	12.48
E. Ohio-W. Pennsylvania[3]	12.69	12.32	12.37	11.97	13.24	13.84	11.98
Western New York[3]	12.47	12.25	12.22	11.94	13.04	13.46	11.79

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

[a]Projected.
[1]201-210 mile zone.
[2]21st zone.
[3]Priced at major city in the marketing area.

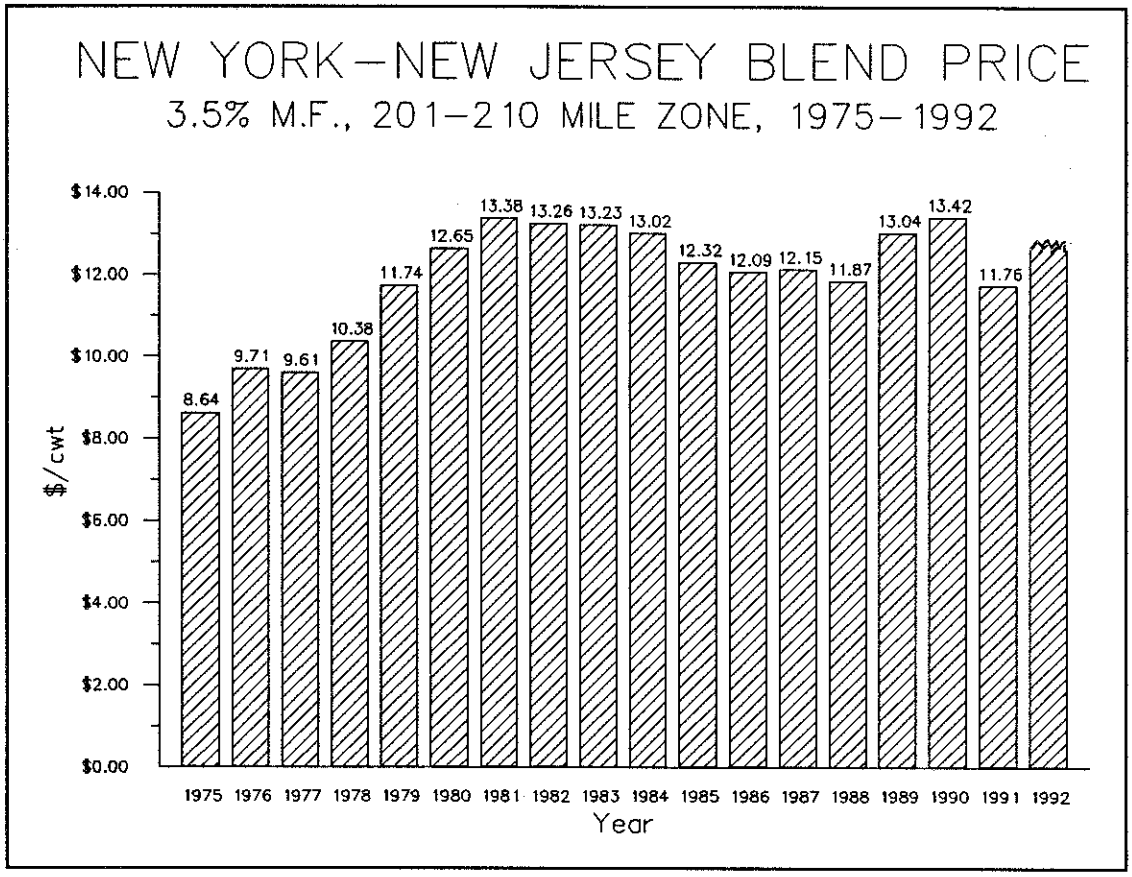
Northeast order blend prices declined an average of 13 percent in 1991 following an increase of 3.2 percent in 1990.

Minimum blend prices in the five northeast orders ranged from a high of $12.48 (f.o.b. city) in the Middle Atlantic Order to $11.76 (201-210 mile zone) in the New York-New Jersey order. An equivalent city price for New York-New Jersey and New England would be 72 cents higher.

Sharply lower blend prices during the first half of the year were partially offset by the suspension of the seasonal pricing provisions in Orders 1, 2 and Western New York. This eliminated deductions of 20¢ in March, 30¢ in April, and 40¢ in May and June. The seasonal pricing provisions will be reinstated in 1992.

Emergency state pricing legislation throughout New York, New England, and Pennsylvania mandated over-order premiums between June and September that further enhanced farm prices to most producers, although in some instances the state premiums replaced existing industry premiums. The New York and New England premium expired in September-October, following a defeated referendum.

In 1992, blend prices for the northeast orders are expected to increase by between 35 and 50 cents per cwt, or 3 to 4 percent based on year-to-year increases for the first quarter and seasonal strength in the fall. Potential replacement of the Minnesota-Wisconsin price mover during the year make price forecasts for the second half of 1992 very tenuous.



N.Y.-N.J. Blend Price, 3.5% M.F., 201-210 Mile Zone, 1985-1991

Month	1985	1986	1987	1988	1989	1990	1991
January	$13.34	$11.92	$12.76	$12.03	$12.95	$15.17	$11.11
February	13.13	11.84	12.42	11.80	12.55	14.22	10.99
March	12.64	11.50	11.92	11.29	11.95	13.45	10.90
April	12.19	11.31	11.55	10.92	11.59	12.75	10.81
May	11.78	11.25	11.30	10.71	11.42	12.83	10.84
June	11.47	11.27	11.35	10.66	11.62	13.25	11.04
July	11.93	11.86	11.96	11.31	12.38	14.02	11.59
August	12.27	12.46	12.44	12.03	13.29	14.43	12.04
September	12.37	12.79	12.75	12.50	14.00	14.27	12.45
October	12.40	13.05	12.80	12.94	14.67	13.10	13.01
November	12.30	13.05	12.69	13.18	15.28	12.52	13.14*
December	12.01	12.78	12.21	13.07	15.47	11.23	13.18*
Average	12.32	12.09	12.18	11.87	13.10	13.42	11.76*

*Projected

Source: Price Announcements, Office of the Administrator, New York-New Jersey Milk Marketing Area.

MILK PRICE PROJECTIONS
New York-New Jersey Blend Price, 3.5 Percent, 201-210 Mile Zone
Last Quarter 1991 - First Half 1992

Month	1989	1990	Difference
	(dollars per hundredweight)		
October	13.10	13.01a	-0.09
November	12.52	13.14p	+0.62
December	11.23	13.18p	+1.95
Annual Average	13.44	11.76p	-1.68

	1991a	1992f	
January	11.11	12.88	+1.77
February	10.99	12.43	+1.44
March	10.90	11.83	+0.93
April	10.81	11.41	+0.60
May	10.84	11.02	+0.18
June	11.04	11.00	-0.04
Six Month Average	10.95	11.76	+0.81
Annual Average Blend Price	11.76p	12.15	+0.39
Annual Effective Price*	11.71	12.02	+0.31

*=blend price less government assessment
a=actual; p=projected; f=forecasted.

Assumptions Associated With These Projections

A support price of $10.10 per hundredweight for 1992.

An average 13-cent per hundredweight budget reconciliation assessment for calendar year 1992.

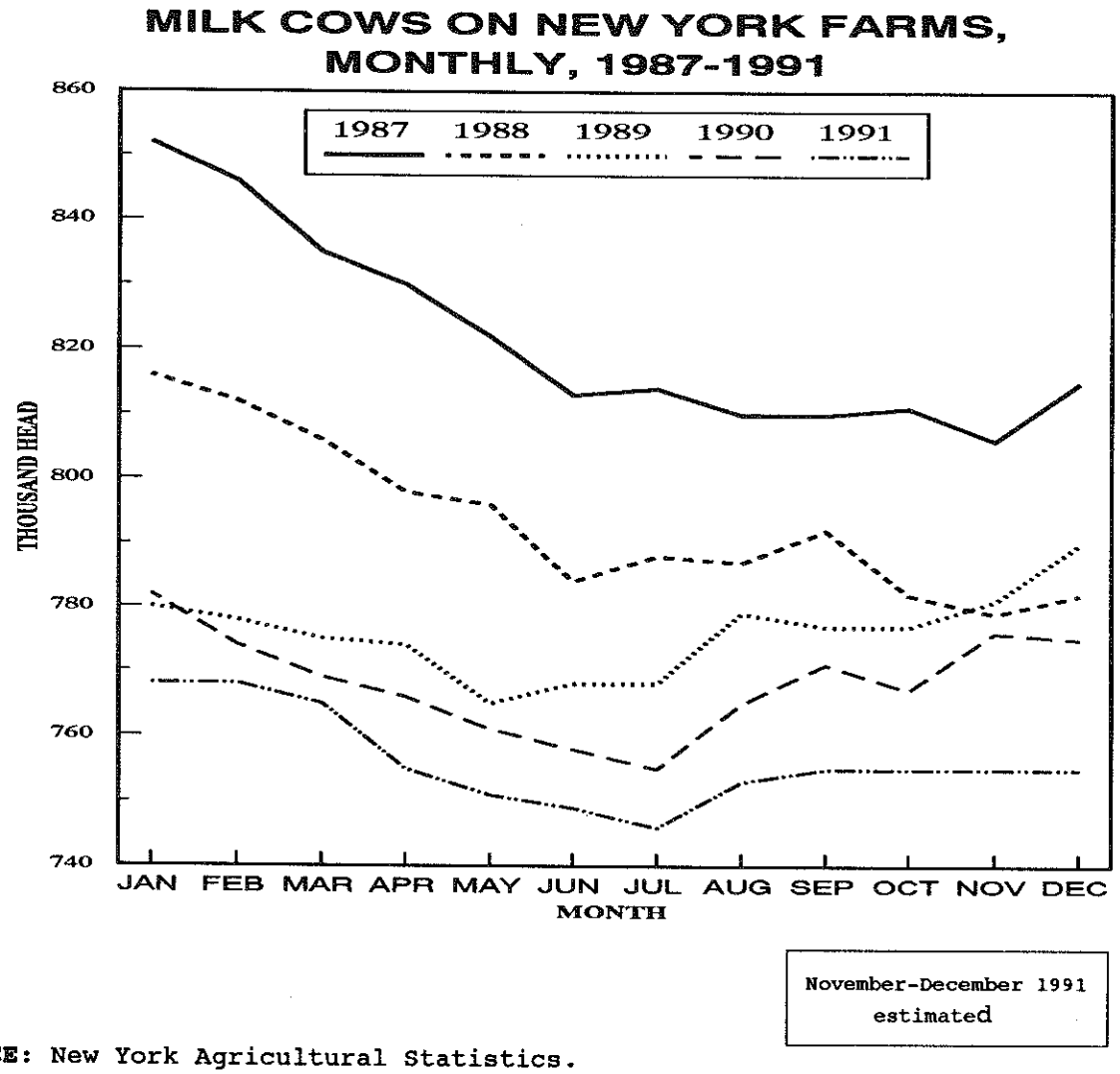
National milk production up 0.5 to 1.0 percent.

Commercial sales up 1.0 to 1.5 percent.

CCC purchases between 6 and 7 billion pounds (milk equivalent, total solids), primarily in butter and nonfat dry milk.

No change in M-W until July 1992.

Forecast by W. C. Wasserman, 11/91



SOURCE: New York Agricultural Statistics.

During 1991, monthly cow numbers have been below 1990 as well as the entire period from 1985 through 1990. Monthly cow numbers in New York increased during 1985, followed by a steady decline that began in January 1986 and continued uninterrupted through June 1987. Cow numbers stabilized the second half of 1987, declined through 1988 and stabilized again in 1989. In July 1991, the number of cows totaled 746,000, which was the lowest number for any month in New York since monthly records began in 1930. The number of cows in the State is projected to be stable through the remainder of the year.

The U.S. quarterly milk cow numbers have decreased in the first three quarters of 1991 compared to 1990. In the third quarter of 1991, the number of cows in the U.S. averaged 9,967,000. That is 152,000 head less than a year earlier. The Northeast[1] comprised 18.5 percent of total U.S. milk cows or 1,844,500 head in the third quarter of 1991. This is 26,700 head less than a year earlier. The Northeast accounted for 18 percent of the 1990 to 1991 third quarter U.S. decrease in cow numbers.

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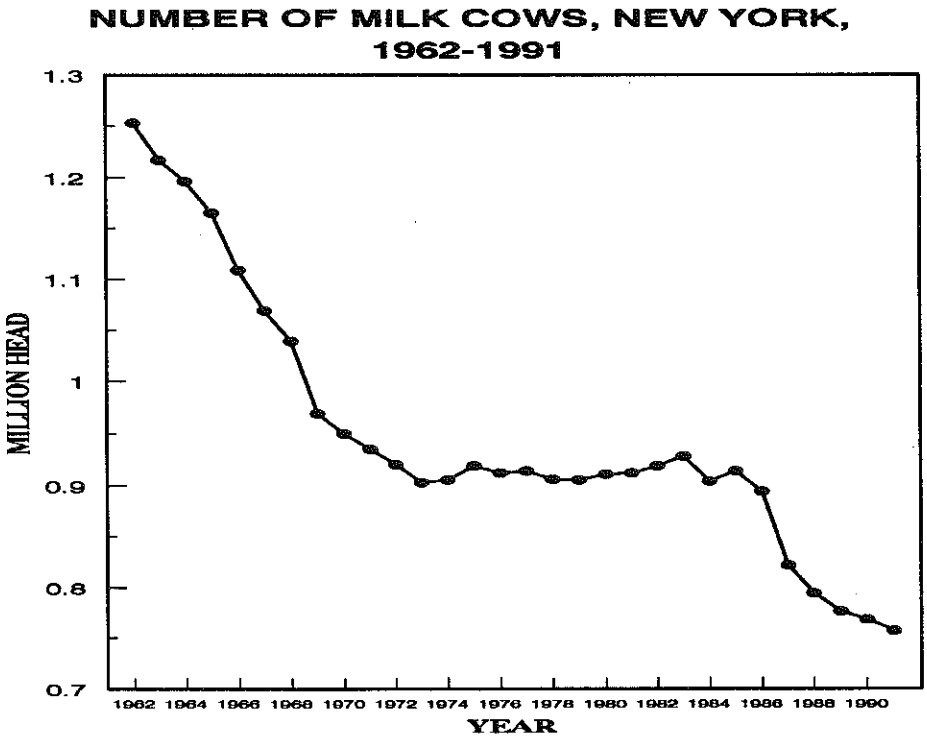
[1]Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.



SOURCE: New York Agricultural Statistics.

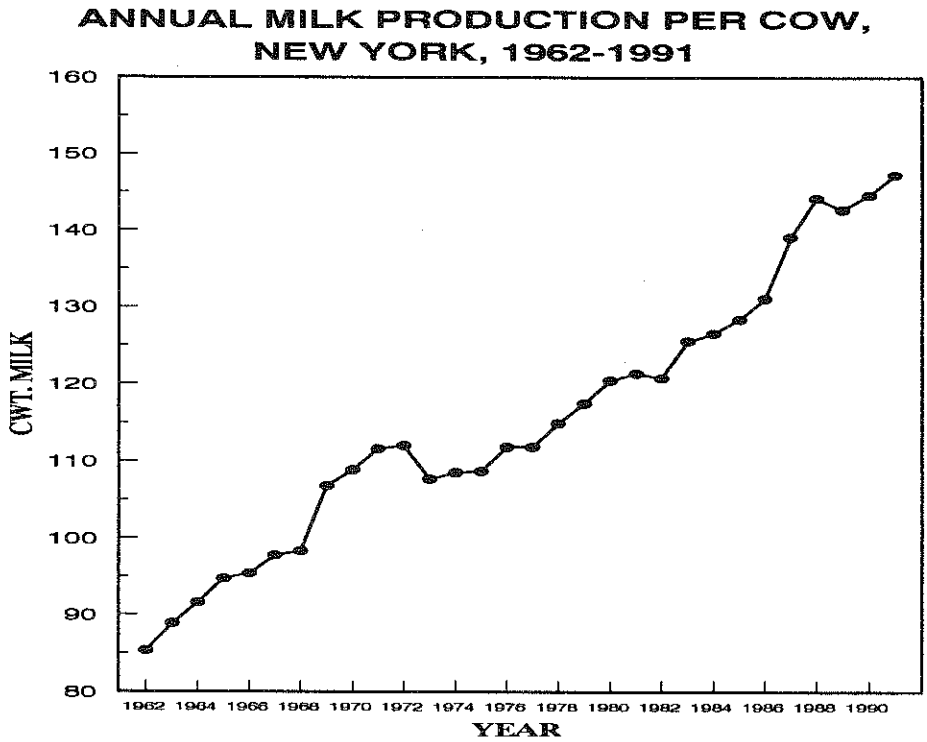
The average number of milk cows on New York farms for 1991 is estimated at 757,000 head, which is 1.4 percent lower than in 1990. The projected average number of cows for 1992 is 749,000, or down 1.0 percent from 1991.

Heifers on New York farms as a percent of cow numbers on January 1, 1991 increased 1.1 percentage points from 1990, to 41.5 percent. At 322,000 head, milk cow replacement heifers were at the fourth lowest level in 24 years.

Heifers on U.S. farms as a percent of cow numbers was 41.3 percent in January 1991, a 0.3 percentage point decrease from 1990. July 1991 U.S. heifers as a percent of cow numbers was 42.0 percent, 0.4 percentage points below July 1990.

Year	New York Milk Cows, Annual Average	New York Milk Cows, January	New York Heifers, January	Heifers as Percent of Cow Numbers
	thousand head			percent
1981	912	915	348	38.0
1982	919	920	403	43.8
1983	928	932	435	46.7
1984	904	925	420	45.4
1985	914	910	425	46.7
1986	894	925	388	41.9
1987	822	855	355	41.5
1988	794	816	290	35.5
1989	776	780	302	38.7
1990	768	790	319	40.4
1991[1]	757	775	322	41.5
1992[2]	749	755	--	--

[1]Preliminary [2]Projected
SOURCE: New York Agricultural Statistics



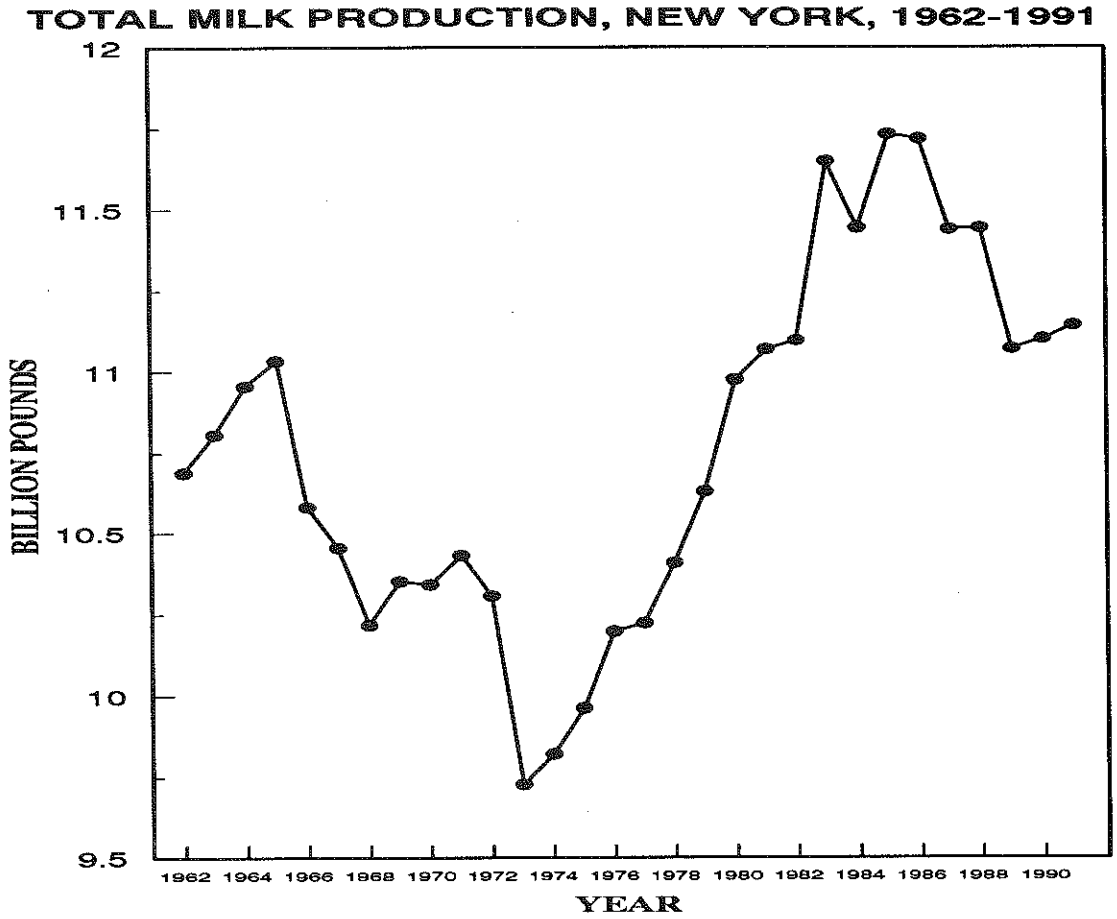
SOURCE: New York Agricultural Statistics.

Pounds of milk produced per cow in 1990 was up 1.3 percent from 1989. Milk per cow is expected to average 14,720 pounds in 1991, an increase of 1.8 percent over 1990. Milk production per cow has increased steadily since 1960 with the exception of 1973 and 1974, and small declines in 1982 and 1989.

Milk production per cow is projected to increase in 1992 by 1.6 percent. Based on strong third quarter 1991 milk production in spite of low forage supplies in some areas, milk per cow is projected to reach 14,950 pounds in 1992.

Year	N.Y. Milk Production Per Cow	Mixed Dairy Feed 16% Protein[1]	New York Milk-Feed Price Ratio[1]	New York All Hay, Baled[2]	U.S. Milk Production Per Cow
	pounds	$/ton		$/ton	pounds
1981	12,137	194	1.42	69.00	12,183
1982	12,075	177	1.56	77.00	12,306
1983	12,552	193	1.47	82.00	12,585
1984	12,658	194	1.37	81.50	12,503
1985	12,836	164	1.59	75.50	12,994
1986	13,107	163	1.56	70.50	13,260
1987	13,916	153	1.68	72.00	13,819
1988	14,413	181	1.39	75.50	14,145
1989[3]	14,267	189	1.50	75.50	14,244
1990[3]	14,456	177	1.68	79.50	14,642
1991[4]	14,720	171	1.40	--	14,840
1992[5]	14,950	174	1.43	--	15,120

[1]1980-1985 is New York, 1986-1991 is Northeast.
[2]Season average, June through May.
[3]Revised
[4]Preliminary
[5]Projected



SOURCE: New York Agricultural Statistics.

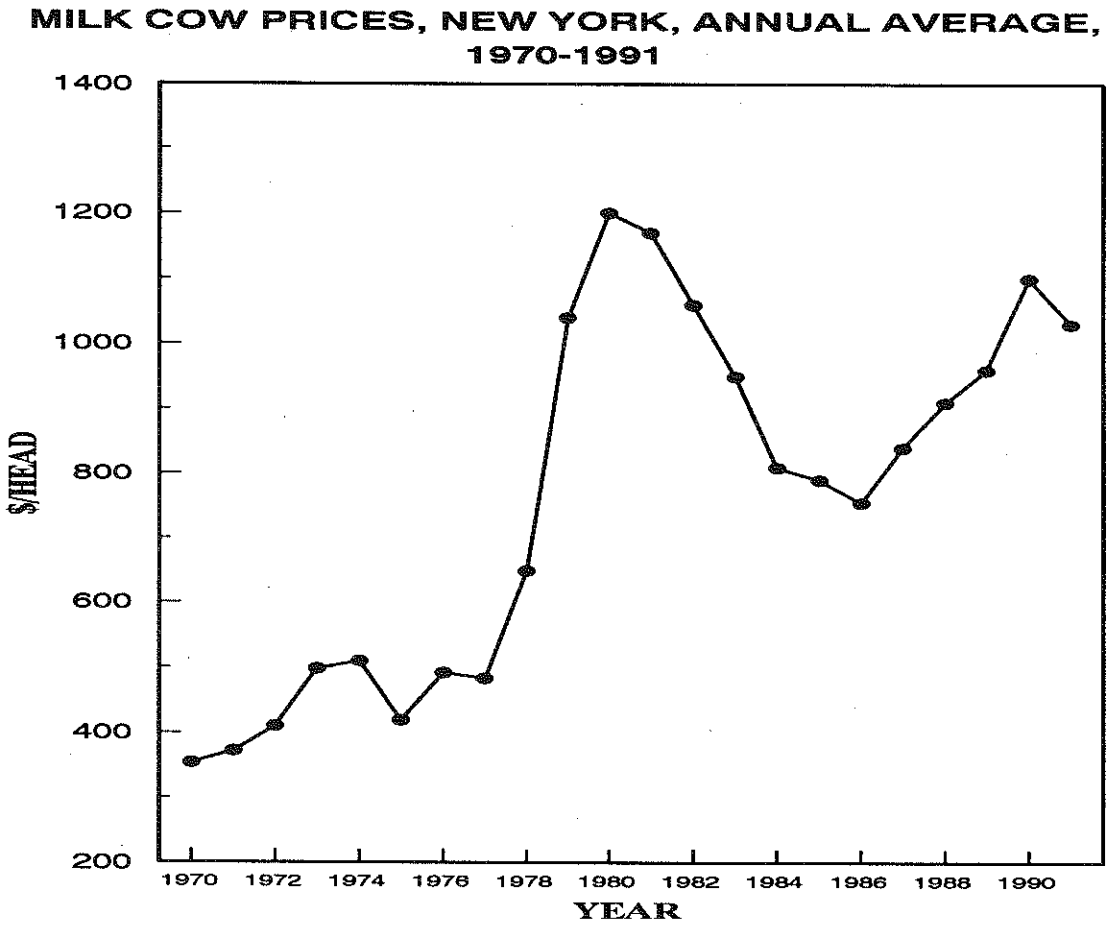
Total New York milk production in 1991 is estimated at 11,143 million pounds, up 0.4 percent from 1991. This increase is due to the 1.8 percent increase in production per cow, as cow numbers are down 1.4 percent.

Total milk production is projected to increase 0.5 percent in 1992 to 11,198 million pounds. This is a result of the factors discussed on the previous two pages in regard to cow numbers and production per cow.

United States total milk production was 148,284 million pounds in 1990. It is estimated that 1991 production will be 148,700 million pounds, and 1992 production will be 149,600 pounds.

Year	Total Milk Prod. New York (million pounds)	Total Milk Prod. U.S. (million pounds)	NY as % of U.S.	Year	Total Milk Prod. New York (million pounds)	Total Milk Prod. U.S. (million pounds)	NY as % of U.S.
1981	11,069	133,013	8.3	1987	11,439	142,709	8.0
1982	11,097	135,795	8.2	1988	11,444	145,152	7.9
1983	11,648	139,588	8.3	1989[1]	11,071	144,239	7.7
1984	11,443	135,351	8.5	1990[1]	11,102	148,284	7.5
1985	11,732	143,012	8.2	1991[2]	11,143	148,700	7.5
1986	11,718	143,124	8.2	1992[3]	11,198	149,600	7.5

[1]Revised [2]Preliminary [3]Projected

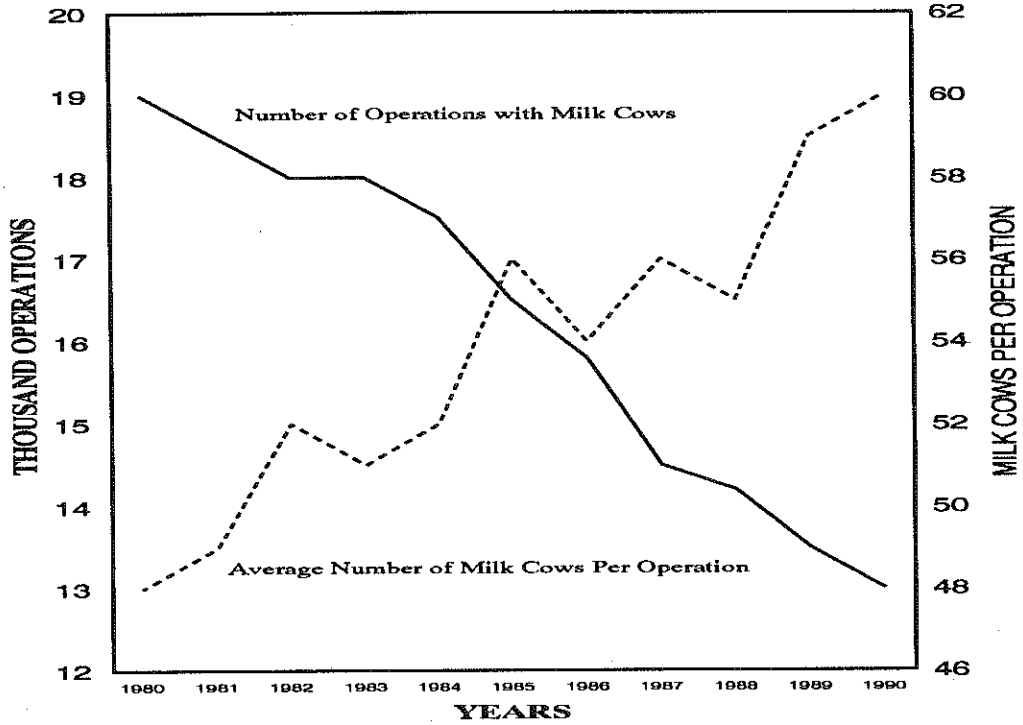


SOURCE: New York Agricultural Statistics.

Milk cow prices increased through the first three quarters of 1990 to $1,160 per head in October and decreased to $1,060 in December. In 1991, milk cow prices decreased in the first quarter, increased in the second quarter, and increased to $1,050 per head in September. Monthly prices for milk cows averaged $57 a head lower than a year earlier. Slaughter cow prices averaged $1.25 per hundredweight lower than a year earlier. Calf prices averaged about $8 per hundredweight higher in 1991 compared to 1990.

	Milk Cows, $/Head		Slaughter Cows, $/Cwt		Calves, $/Cwt	
Month	1990	1991	1990	1991	1990	1991
January	$1,050	$1,030	$48.90	$46.60	$105.00	$ 93.80
February	1,070	1,010	48.60	48.30	102.00	94.70
March	1,070	1,000	48.70	47.50	94.00	110.00
April	1,070	1,020	48.90	48.50	117.00	125.00
May	1,070	1,030	50.00	51.30	124.00	147.00
June	1,080	1,040	51.70	50.70	121.00	142.00
July	1,100	1,040	50.70	47.50	108.00	124.00
August	1,130	1,050	50.30	48.40	106.00	116.00
September	1,140	1,050	49.80	46.50	113.00	112.00
October	1,160	1,040	47.50	46.00	93.00	108.00
November	1,150		45.10		76.10	
December	1,060		46.70		83.20	

NUMBER OF OPERATIONS WITH MILK COWS AND AVERAGE NUMBER OF MILK COWS PER OPERATION, NEW YORK, 1980-1990



SOURCE: NYASS, New York Agricultural Statistics, 1990-1991

As the number of milk cow operations decreases, the average number of milk cows per operation increases as shown by the above chart. There were 6,000 less milk cow operations in 1990 than there were in 1980. The average number of milk cows per operation has increased by 11 cows, or 23 percent over the same period. On January 1, 1991, 43 percent of the total milk cows were in herds with 50-99 head, 38 percent were in herds with over 100 milk cows, and 19 percent were in herds with less than 50 head.

MILK COW OPERATIONS: BY HERD SIZE, 1981-1990

Year	Number of Milk Cows in Herd 1-9	10-29	30-49	50-99	100 plus	Total
	number of operations					
1981	3,300	2,620	5,180	5,920	1,480	18,500
1982	3,150	2,500	4,900	5,800	1,650	18,000
1983	3,100	2,400	5,000	5,750	1,750	18,000
1984	3,050	2,350	4,900	5,350	1,850	17,500
1985	2,700	2,300	4,550	5,100	1,850	16,500
1986	2,300	2,000	4,300	5,300	1,900	15,800
1987	1,700	1,600	4,300	5,000	1,900	14,500
1988	1,650	1,550	3,850	5,300	1,850	14,200
1989	1,300	1,400	3,400	5,400	2,000	13,500
1990	1,350	1,300	3,150	5,300	1,900	13,000

MILK COWS JANUARY 1: INVENTORY BY HERD SIZE, 1982-1991

Year	Number of Milk Cows in Herd 1-9	10-29	30-49	50-99	100 plus	Total
	thousand head					
1982	8	52	211	405	244	920
1983	9	52	205	410	256	932
1984	7	48	208	398	264	925
1985	8	48	203	369	282	910
1986	8	49	196	371	301	925
1987	5	37	168	355	290	855
1988	3	29	171	332	281	816
1989	3	27	144	335	271	780
1990	3	27	126	334	300	790
1991	3	25	120	330	297	775

INDEX OF PRICES PAID BY NEW YORK DAIRY FARMERS
(1977=100)

Item	Weight	1986	1987	1988	1989	1990	1991[1]	1992[2]
Feed	.31	119	112	133	139	128	126	128
Purchased animals	.03	156	173	188	198	227	214	215
Fuel & energy	.05	184	176	184	193	220	222	225
Fertilizer	.05	127	128	139	144	140	145	147
Seed	.02	167	166	171	181	184	187	189
Machinery	.18	185	189	198	208	217	227	232
Building & fencing supplies	.08	136	137	138	141	144	146	146
Farm services & rent	.08	150	146	147	158	166	172	172
Agricultural chemicals	.01	127	124	127	132	139	150	155
Interest rates	.07	140	125	126	141	135	125	118
Farm wage rates	.09	183	195	209	221	235	250	260
Property taxes	.03	181	175	181	186	190	203	210
Prices Paid, Not Including Assessment		149	149	159	168	170	173	175

[1]Preliminary [2]Projected
SOURCE: New York Agricultural Statistics Service

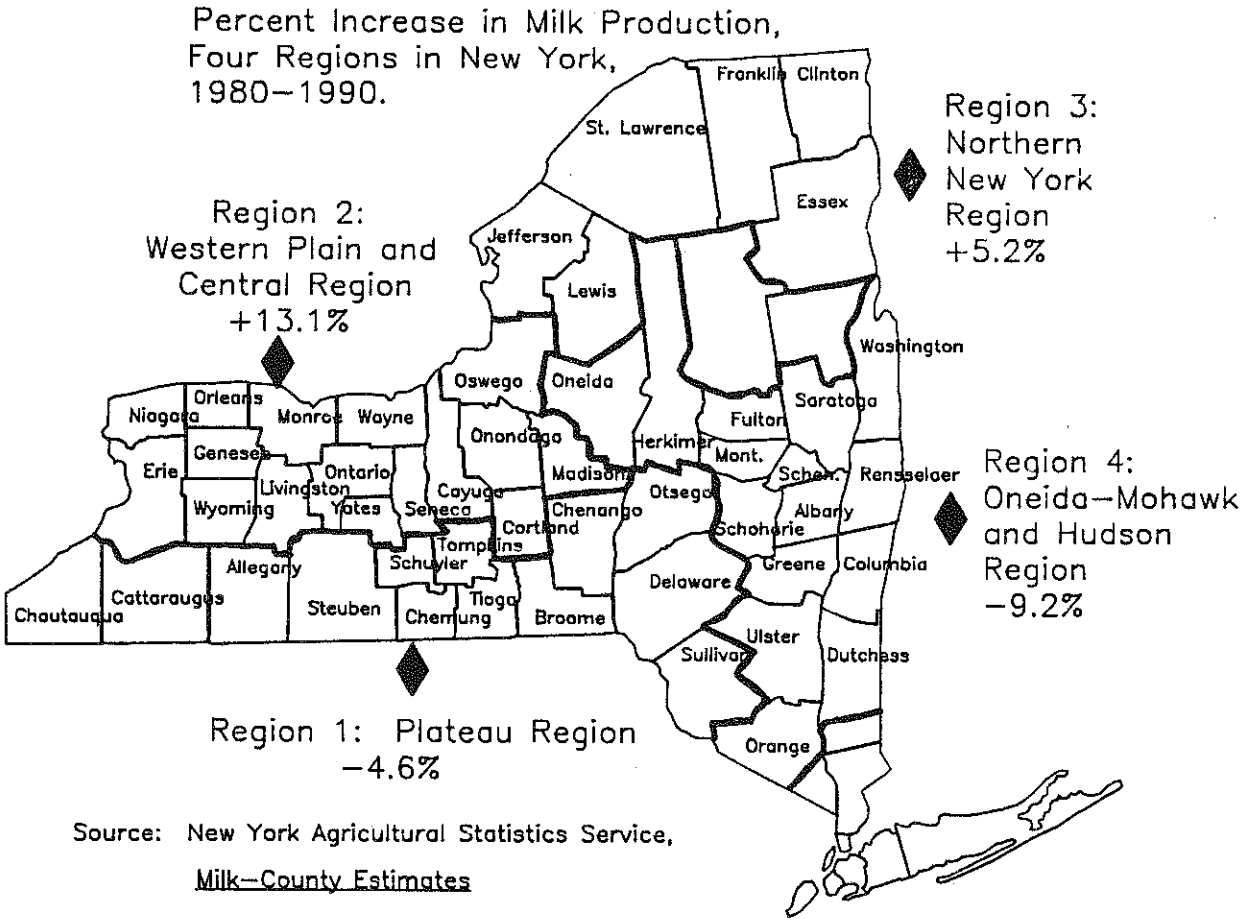
The preliminary 1991 index of prices paid by New York dairy farmers is 173, a 1.8 percent increase from the 1990 index of 170. All component items in the index, except feed, purchased animals, interest rates, and property taxes increased in 1991. Agricultural chemicals showed the largest increase at eight percent, followed by farm wage rates with a six percent increase, and machinery with a five percent increase. The feed component decreased two percent. The index had been very stable from 1985 through 1987; but every component item increased in both 1988 and 1989.

The 1992 index of prices paid is projected at 175, up about 1.2 percent from 1991. Feed prices are expected to increase slightly in 1992 assuming a "normal" 1992 crop year. With stable to slightly higher milk prices, dairy cow prices are expected to be relatively stable in 1992. Interest rates are likely to be 0.50 to 0.75 percentage points lower in 1992. Farm services and rent are projected to be stable, and all other categories increasing one to four percent.

COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
395 New York Dairy Farms, 1990

Item	Plateau Region	W. Plain & Cent. Region	Northern New York	Oneida-Mohawk Hudson Reg.
Number of farms	127	87	87	94
ACCRUAL EXPENSES				
Hired labor	$ 20,457	$ 78,076	$ 19,607	$ 23,357
Feed	65,305	143,476	57,591	67,814
Machinery	21,097	50,771	20,134	26,608
Livestock	28,309	60,579	23,557	37,352
Crops	13,303	34,312	10,991	15,431
Real estate	14,618	31,658	12,130	15,594
Other	28,235	57,400	30,427	31,220
Total Operating	$191,324	$456,272	$174,437	$217,376
Expansion livestock	1,852	10,381	2,617	2,513
Machinery depreciation	13,619	27,674	14,486	12,435
Building depreciation	6,478	18,836	4,905	7,034
Total Accrual Expenses	$213,273	$513,163	$196,445	$239,358
ACCRUAL RECEIPTS				
Milk sales	$216,911	$513,852	$201,449	$237,603
Livestock	23,637	60,269	20,235	23,013
Crops	3,796	17,244	4,002	5,381
All other	5,911	14,073	3,898	4,922
Total Accrual Receipts	$250,255	$605,438	$229,584	$270,919
PROFITABILITY ANALYSIS				
Net farm income (w/o appreciation)	$36,982	$92,275	$33,139	$31,561
Net farm income (w/appreciation)	$43,023	$113,784	$37,583	$39,519
Labor & management income	$12,217	$53,318	$12,697	$6,101
Number of operators	1.38	1.59	1.25	1.34
Labor & management income/operator	$8,853	$33,533	$10,158	$4,553
BUSINESS FACTORS				
Worker equivalent	2.84	5.11	2.85	2.97
Number of cows	86	184	81	89
Number of heifers	67	153	69	70
Acres of hay crops[1]	147	194	161	170
Acres of corn silage[1]	54	152	61	75
Total tillable acres	250	525	264	296
Pounds of milk sold	1,450,253	3,486,603	1,368,511	1,533,127
Pounds of milk sold/cow	16,902	18,943	16,864	17,169
Tons hay crop dry matter/acre	2.6	3.0	2.6	2.5
Tons corn silage/acre	14.7	14.4	14.7	14.0
Cows/worker	30	36	28	30
Pounds of milk sold/worker	510,885	682,001	480,699	515,383
% grain & concentrate of milk receipts	29%	27%	28%	28%
Feed & crop expense/cwt. milk	$5.40	$5.08	$5.00	$5.42
Fertilizer & lime/crop acre	$30.04	$33.36	$20.20	$28.60
Machinery cost/tillable acre	$162	$169	$151	$150

[1]Average of all farms in the region, not only those producing the crop.



Source: New York Agricultural Statistics Service, Milk–County Estimates

MILK PRODUCTION AND AVERAGE COST OF PRODUCING MILK
FOUR REGIONS OF NEW YORK, 1990

Item	Region[1] 1	2	3	4
MILK PRODUCTION[2]	(million pounds)			
1980	3,075.3	3,223.4	1,990.2	2,662.0
1990	2,933.3	3,645.0	2,094.6	2,416.7
Percent change	-4.6%	+13.1%	+5.2%	-9.2%
COST OF PRODUCING MILK	($ per hundredweight milk)			
Operating cost	$11.02	$10.76	$10.88	$12.17
Total cost	16.01	14.38	15.78	16.96
Average price received	14.96	14.74	14.72	15.50
Return per cwt. to operator labor, mgmt. & capital	2.32	2.58	2.08	1.82

[1]See the map above for region descriptions.
[2]**SOURCE:** New York Agricultural Statistics Service, Milk-County Estimates.

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1981 to 1990

Item	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Number of farms	553	572	510	458	404	414	426	406	409	395
Cropping Program										
Total tillable acres	257	262	272	280	280	288	305	302	316	325
Tillable acres rented	83	83	91	94	93	100	105	104	117	121
Hay crop acres	131	135	139	143	142	147	153	156	164	166
Corn silage acres	59	70	72	76	69	67	67	74	81	82
Hay crop, tons DM/acre	2.5	2.6	2.5	2.7	2.7	2.7	2.7	2.6	2.6	2.7
Corn silage, tons/acre	14.9	14.0	13.5	14.0	14.3	14.3	16.2	14.1	13.4	14.4
Fert. & lime exp. /tillable acre	$32	$33	$31	$32	$32	$26	$27	$29	$29	$29
Machinery cost/cow	$465	$432	$413	$433	$426	$400	$413	$398	$425	$483
Dairy Analysis										
Number of cows	79	82	88	89	89	95	101	102	104	107
Number of heifers	59	67	72	76	73	77	79	82	83	87
Milk sold, cwt.	11,420	12,105	13,432	13,735	14,001	15,374	16,498	17,200	17,975	19,005
Milk sold/cow, lbs.	14,456	14,762	15,264	15,433	15,679	16,237	16,351	16,882	17,259	17,720
Purchased dairy feed/cwt. milk	$3.51	$3.27	$3.44	$3.28	$3.04	$3.10	$3.21	$3.71	$3.99	$4.27
Purc. grain & conc. as % milk receipts	26%	24%	25%	24%	23%	24%	24%	28%	27%	28%
Purc. feed & crop exp./cwt. milk	$4.67	$4.53	$4.62	$4.53	$4.13	$4.00	$4.11	$4.62	$4.92	$5.21
Capital Efficiency										
Farm capital/cow	$5,676	$5,517	$5,421	$5,520	$5,801	$5,792	$5,894	$6,133	$6,407	$6,556
Real estate/cow	$2,693	$2,664	$2,668	$2,731	$2,726	$2,758	$2,805	$2,902	$2,977	$2,977
Mach. invest./cow	$1,078	$1,047	$1,038	$1,057	$1,083	$1,062	$1,057	$1,083	$1,154	$1,233
Capital turnover, yrs.	2.4	2.5	2.4	2.3	2.5	2.3	2.2	2.2	2.1	2.1
Labor Efficiency										
Worker equivalent	2.75	2.83	3.00	3.08	3.17	3.17	3.19	3.17	3.30	3.37
Operator/manager eq.	1.25	1.30	1.32	1.31	1.34	1.33	1.32	1.35	1.39	1.39
Milk sold/worker, lbs.	415,273	427,739	447,733	445,942	442,125	497,555	516,728	542,708	544,598	563,349
Cows/worker	29	29	29	29	28	31	32	32	32	32
Labor cost/cow	$335	$352	$344	$366	$387	$385	$400	$426	$469	$541
Profitability & Financial Analysis										
Labor & mgmt. income/oper.	$-4,261	$3,451	$5,514	$2,262	$2,850	$3,837	$11,042	$11,911	$18,004	$14,328
Farm net worth	$301,975	$306,589	$322,001	$336,210	$325,664	$348,909	$398,209	$426,123	$468,848	$471,322
Percent equity	64%	63%	63%	64%	63%	62%	65%	66%	68%	66%

TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1981 to 1990

Item	1981	1982	1983	1984	1985*	1986*	1987*	1988*	1989*	1990*
Cash Operating Expenses										
Hired labor	$ 1.20	$ 1.29	$ 1.25	$ 1.39	$ 1.38	$ 1.38	$ 1.49	$ 1.46	$1.62	$ 1.77
Purchased feed	3.62	3.40	3.59	3.46	3.09	3.15	3.26	3.73	4.02	4.28
Machinery repairs & rent	.81	.81	.77	.80	.78	.75	.88	.83	.92	1.06
Auto expenses (farm share)	.04	.04	.04	.03	.03	.04	.04	.04	.04	.05
Fuel, oil & grease	.62	.59	.49	.50	.48	.34	.35	.34	.33	.41
Replacement livestock	.23	.19	.16	.10	.10	.13	.13	.11	.17	.20
Breeding fees	.18	.19	.19	.20	.20	.19	.19	.18	.18	.19
Veterinary & medicine	.28	.29	.28	.29	.27	.28	.28	.28	.30	.32
Milk marketing	.40	.50	.93	1.03	.80	.84	.74	.52	.49	.53
Other dairy expenses	.49	.52	.54	.55	.53	.52	.53	.56	.60	.68
Lime & fertilizer	.72	.71	.63	.66	.63	.49	.50	.51	.50	.50
Seeds & plants	.23	.23	.21	.22	.23	.21	.21	.21	.22	.22
Spray & other crop expense	.21	.18	.19	.20	.22	.20	.19	.19	.21	.22
Land, building, fence repair	.22	.21	.18	.18	.17	.16	.20	.22	.27	.32
Taxes	.35	.34	.34	.33	.34	.33	.35	.35	.36	.37
Insurance	.23	.23	.21	.20	.22	.22	.22	.23	.23	.24
Telephone & elec. (farm share)	.32	.35	.36	.36	.37	.39	.38	.38	.39	.39
Interest paid	1.43	1.54	1.40	1.40	1.25	1.18	1.04	1.02	1.06	1.05
Misc. (including rent)	.41	.43	.44	.44	.40	.41	.45	.41	.43	.47
Total Operating Expenses	$11.99	$12.04	$12.20	$12.34	$11.50	$11.22	$11.43	$11.57	$12.34	$13.27
Less: Nonmilk cash receipts	1.58	1.47	1.49	1.74	1.58	1.52	1.84	1.86	1.75	1.75
Increase in feed & supplies**	.11	.03	.26	.18	.05	.01	.16	.16	.02	.26
Increase in livestock	.25	.35	.24	.16	.18	.12	.10	.08	.12	.15
OPERATING COST OF MILK PRODUCTION	$10.05	$10.19	$10.21	$10.26	$ 9.69	$ 9.57	$ 9.33	$ 9.47	$10.45	$11.11
Overhead Expenses										
Depreciation: mach. & bldgs.	$ 1.56	$ 1.60	$ 1.56	$ 1.65	$ 1.64	$ 1.54	$ 1.43	$ 1.31	$ 1.31	$ 1.35
Unpaid labor	.14	.14	.12	.12	.12	.13	.10	.11	.12	.19
Operator(s) labor***	.99	.93	.89	.87	.97	.86	.87	.95	.98	1.10
Operator(s) mgmt. (5% of cash rec.)	.76	.75	.76	.76	.72	.71	.74	.74	.81	.85
Interest on farm eq. cap. (5%)	1.32	1.27	1.20	1.22	1.16	1.10	1.15	1.19	1.24	1.24
Total Overhead Expenses	$ 4.77	$ 4.69	$ 4.53	$ 4.62	$ 4.61	$ 4.34	$ 4.28	$ 4.30	$ 4.46	$ 4.73
TOTAL COST OF MILK PRODUCTION	$14.82	$14.88	$14.74	$14.88	$14.30	$13.91	$13.61	$13.77	$14.91	$15.84
AVERAGE FARM PRICE OF MILK	$13.66	$13.56	$13.64	$13.49	$12.90	$12.65	$12.89	$13.03	$14.53	$14.93
Return per cwt. to operator labor, capital, & management	$1.91	$1.63	$1.75	$1.46	$1.45	$1.41	$2.04	$2.14	$2.65	$2.28
Rate of return on farm eq. cap.	0.6%	-0.2%	0.4%	-0.7%	-1.0%	-0.7%	1.9%	1.8%	3.3%	1.3%

*Accrual receipts and expenses. **Increase in grown feeds, 1985-1989. ***1980-1984 = $750/month, 1985 = $800/month, 1986 = $850/month, 1987 = $900/month, 1988 = $1,000/month, 1989 = $1,050/month , 1990 = $1,250/month of operator labor.

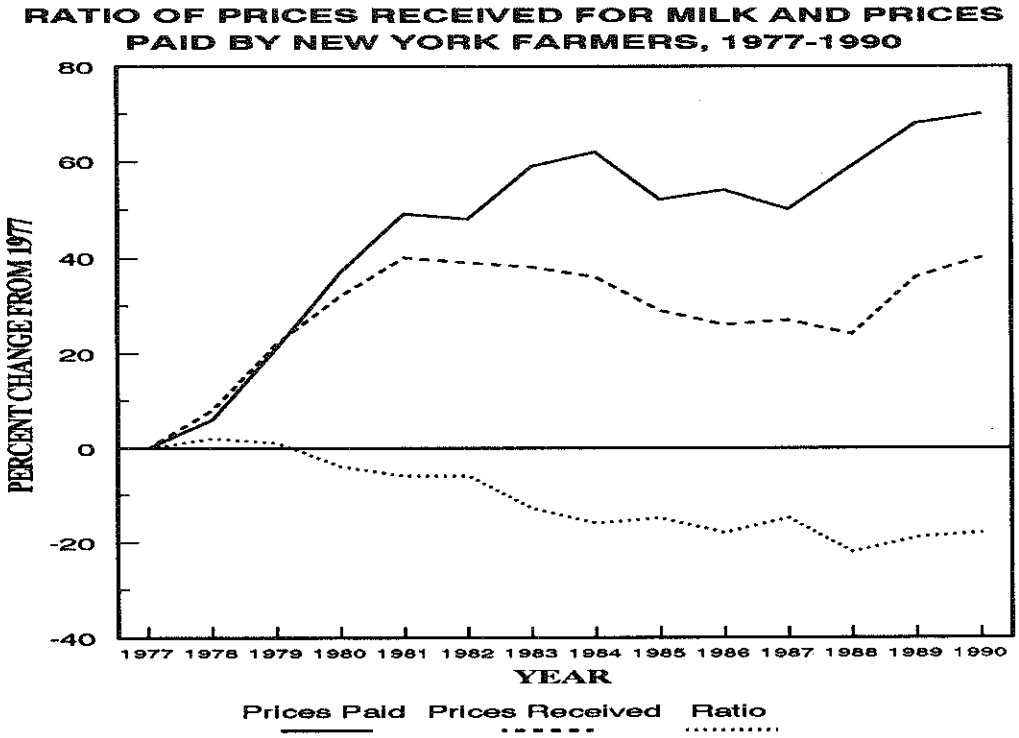
The prices dairy farmers pay for a given quantity of goods and services has a major influence on farm production costs. The astute manager will keep close watch on unit costs and utilize the most economical goods and services.

PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1980-1990

Year	Mixed Dairy Feed 16% Protein	Fertilizer, Urea, 45-46%N	Seed Corn, Hybrid*	Diesel Fuel	Tractor 50-59 PTO*	Wage Rate All Hired Farm Workers
	($/ton)	($/ton)	($/80,000 kernels)	($/gal)	($)	($/hr)
1980	179.60	259	52.50	1.030	13,400	3.12
1981	193.70	275	60.00	1.310	14,900	3.26
1982	176.60	278	63.70	1.240	16,000	3.26
1983	192.60	249	64.60	1.140	17,200	3.52
1984	194.30	250	70.20	1.140	17,400	3.60
1985	164.20	238	67.30	1.080	16,800	4.01***
1986	162.90	200**	65.60	0.840**	16,600	4.41***
1987	152.80**	190**	64.90	0.765**	16,700	4.60***
1988	180.80**	208**	64.20	0.810**	17,150	5.02***
1989	188.50**	227**	71.40	0.828**	17,350	5.25***
1990	176.75**	215**	69.90	1.080**	17,950	5.52***

SOURCE: NYCRS, New York Agricultural Statistics. USDA, ASB, Agricultural Prices. *United States average. **Northeast region average. ***New York and New England combined.

The table above shows average prices of selected goods and services used on New York dairy farms. The chart below shows the ratio of prices received for milk and prices paid by New York dairy farmers as a percent change from 1977. The ratio has been on a downward trend since 1978 except for slight increases in 1985, 1987, 1989, and 1990.



SOURCE: NYCRS, New York Agricultural Statistics.