

NOVEMBER 2011

R.B. 2011-03

# DAIRY FARM MANAGEMENT

## ***BUSINESS SUMMARY NEW YORK STATE 2010***



*You can't manage what you can't measure.  
But if you measure it, you can improve it!*

**Wayne A. Knoblauch  
Linda D. Putnam  
Jason Karszes  
Richard Overton  
Cathryn Dymond**

**Charles H. Dyson School of Applied Economics and Management  
Cornell University Agricultural Experiment Station  
College of Agriculture and Life Sciences  
Cornell University, Ithaca, New York 14853-7801**

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

The Dairy Farm Business Summary and Analysis Project is funded in part by:



Additional funding is provided by:



For additional copies, please contact:

Linda Putnam  
Cornell University  
Charles H. Dyson School of Applied Economics and Management  
216 Warren Hall  
Ithaca, NY 14853-7801

E-mail: [ldp2@cornell.edu](mailto:ldp2@cornell.edu)  
Fax: 607-255-1589  
Voice: 607-255-8429  
Or visit:  
<http://www.dyson.cornell.edu/outreach/order.php>

**Dairy Farm Management  
Business Summary, New York State, 2010<sup>1</sup>**

**Wayne A. Knoblauch\***  
**Linda D. Putnam**  
**Jason Karszes**  
**Richard Overton**  
**Cathryn Dymond**

Charles H. Dyson School of Applied Economics and Management  
Cornell University, Ithaca, New York 14853-7801 USA

\*Author phone: 607-255-1599

\*Author e-mail: wak4@cornell.edu

**Keywords:** BUSINESS ANALYSIS, DAIRY MANAGEMENT, FARM BUSINESS SUMMARY,  
NEW YORK FARMS

**JEL codes:** Q12, Q14

**Acknowledgements**

The authors wish to acknowledge extension field staff, consultants, and cooperating farmers for their invaluable contributions to this project. In addition, the authors appreciate the comments provided by Loren Tauer and George Conneman.

---

<sup>1</sup>This report was written by Wayne A. Knoblauch, Professor, Linda D. Putnam and Richard Overton, Extension Support Specialists, in the Dyson School of Applied Economics and Management at Cornell University; Jason Karszes, Senior Extension Associate, Pro-Dairy, Department of Animal Science at Cornell University; and Cathryn Dymond, work-study student.

## ABSTRACT

Business and financial records for 2010 from 204 New York dairy farm businesses are summarized and analyzed. This analysis uses cash accounting with accrual adjustments to measure farm profitability, financial performance, and costs of producing milk. Traditional methods of analyzing dairy farm businesses are combined with evaluation techniques that show the relationship between good management performance and financial success.

The farms in the project averaged 489 cows per farm and 24,508 pounds of milk sold per cow, which represent above average size and management level for New York dairy farms. The New York Agricultural Statistics Service reports 20,807 pounds milk production per cow for New York. An average New York herd size per farm of 120 is estimated in Appendix Table A3, page 85.

Net farm income excluding appreciation, which is the return to the operator's labor, management, capital, and other unpaid family labor, averaged \$326,482 per farm. The rate of return to all capital invested in the farm business including appreciation averaged 8.5 percent.

Differences in profitability between farms continue to widen. Average net farm income excluding appreciation of the top 10 percent of farms was \$1,585,864, while the lowest 10 percent was -\$78,221. Rates of return on equity with appreciation ranged from positive 31 percent to negative 42 percent for the highest decile and the lowest decile of farms, respectively.

Large freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow. In 2010 they averaged the highest returns to labor, management and capital. Farms milking three times a day (3X) were larger, produced more milk per cow and had higher net farm incomes in 2010 than herds milking two times per day (2X). Operating costs per hundredweight of milk were \$0.08 per hundredweight lower for 3X than 2X milking herds, while output per cow was 5,239 pounds higher.

Farms adopting intensive grazing generally produced less milk per cow than non-grazing farms but averaged higher labor and management incomes per operator. One should not conclude that adoption of these technologies alone were responsible for differences in performance.

## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
Trend Analysis.....	1
Farms Included .....	1
Features .....	1
Acknowledgments .....	1
2010 Regional Summary Publications.....	2
FIFTY YEARS OF NEW YORK STATE DAIRY FARM BUSINESS DATA .....	3
FOUR YEARS OF VARIABILITY .....	3
ADJUSTING PROFIT, PRICE AND COSTS FOR INFLATION.....	6
SUMMARY & ANALYSIS OF THE FARM BUSINESS.....	8
Business Characteristics & Resources Used.....	8
Accounting Procedures .....	9
Income Statement - Expenses .....	9
Income Statement - Receipts.....	11
Profitability Analysis .....	12
Farm & Family Financial Status .....	15
Cash Flow Summary & Analysis.....	18
Repayment Analysis .....	20
Cropping Program Analysis.....	21
Dairy Program Analysis.....	24
Cost of Producing Milk.....	28
Milk Income and Marketing Expense Breakdown.....	40
Capital & Labor Efficiency Analysis.....	42
Farm Business Charts .....	44
Financial Analysis & Management.....	46
Herd Size Comparisons.....	48
SUPPLEMENTAL INFORMATION .....	61
Income & Expense Comparison for Farms Buying Majority of Forages Versus Similar Size Farms Growing Forages.....	63
Comparisons by Type of Barn & Herd Size .....	65
Intensive Grazing Farms vs. Non-Grazing Farms.....	71
Comparison of Farm Business Summary Data, 2001-2010 .....	72
Farm Receipts & Expenses Per Cow & Per Hundredweight for Three Levels of Milk Production & Three Herd Size Categories.....	74
Comparison of Dairy Farm Business Data by Region .....	76
Milk Production & Average Cost of Producing Milk by Region.....	77
Comparison of Farms by Milking Frequency .....	78
Other Comparisons .....	79
APPENDIX: PRICES, COSTS AND TRENDS IN THE NEW YORK DAIRY INDUSTRY .....	83
GLOSSARY & LOCATION OF COMMON TERMS.....	86

## LIST OF TABLES

<u>Table Number</u>	<u>Page</u>
1	Comparison of Farm Business Summary Data, New York Dairy Farms, 1960-2010 .....4
2	Comparison of Farm Business Summary Data, Same 156 New York Dairy Farms, 2007-2010.....5
3	Business Characteristics & Resources Used, 204 New York Dairy Farms, 2010.....8
4	Cash & Accrual Farm Expenses, 204 New York Dairy Farms, 2010.....10
5	Cash & Accrual Farm Receipts, 204 New York Dairy Farms, 2010 .....11
6	Net Farm Income, 204 New York Dairy Farms, 2010.....12
7	Labor & Management Income, 204 New York Dairy Farms, 2010.....13
8	Return to Capital, 204 New York Dairy Farms, 2010 .....14
9	Return to All Labor & Management by Return to All Capital With Appreciation, 204 New York Dairy Farms, 2010 .....14
10	2010 Farm Business & Nonfarm Balance Sheet, 204 New York Dairy Farms, 2010 .....15
11	Farm Balance Sheet Analysis, 204 New York Dairy Farms, 2010.....16
12	Farm Inventory Balance, 204 New York Dairy Farms, 2010 .....16
13	Statement of Owner Equity (Reconciliation), 204 New York Dairy Farms, 2010 .....17
14	Annual Cash Flow Statement, 204 New York Dairy Farms, 2010 .....18
15	Annual Cash Flow Data, 204 New York Dairy Farms, 2010.....19
16	Farm Debt Payments Planned, Same 185 New York Dairy Farms, 2009 & 2010.....20
17	Coverage Ratios, Same 185 New York Dairy Farms, 2009 & 2010.....20
18	Debt to Asset Ratio vs. Cash Flow Coverage, 204 New York Dairy Farms, 2010.....20
19	Land Resources & Crop Production, 204 New York Dairy Farms, 2010 .....21
20	Crop Management Factors, 204 New York Dairy Farms, 2010 .....21
21	Crop Related Accrual Expenses, 198 New York Dairy Farms That Grow Forages, 2010 .....22
22	Accrual Machinery Expenses, 198 New York Dairy Farms That Grow Forages, 2010 .....22
23	Dairy Herd Inventory, 204 New York Dairy Farms, 2010 .....24
24	Milk Production, 204 New York Dairy Farms, 2010.....25
25	Milk Sold Per Cow & Farm Income Measures, 204 New York Dairy Farms, 2010 .....25
26	Culling Rate and Dairy Replacement Information, New York Dairy Farms, 2010 .....27
27	Cost of Producing Milk, Whole Farm Method, 204 New York Dairy Farms, 2010.....28
28	Itemized Costs of Producing Milk Per Hundredweight Based on Whole Farm Data, 204 New York Dairy Farms, 2010 .....29
29	Itemized Costs of Producing Milk per Hundredweight Based on Whole Farm Data, Same 185 New York Dairy Farms, 2009-2010 .....30
30	Cost of Producing Milk, Accrual Receipts from Dairy, and Profitability, 204 New York Dairy Farms, 2010 .....31
31	Farm Cost of Producing Milk by Milk Sold Per Cow, 204 New York Dairy Farms, 2010 .....31
32	Farm Cost of Producing Milk by Herd Size, 204 New York Dairy Farms, 2010 .....33
33	Ten Year Comparison: Average Cost of Producing Milk Per Hundredweight, New York Dairy Farms, 2001 to 2010.....36
34	Ten Year Comparison: Selected Business Factors, New York Dairy Farms, 2001 to 2010 .....37
35	Dairy Related Accrual Expenses, 204 New York Dairy Farms, 2010 .....38
36	Purchased Feed & Crop Expenses Per Hundredweight of Milk and Farm Income Measures, 204 New York Dairy Farms, 2010.....39
37	Average Milk Income and Marketing Report, 140 New York Dairy Farms, 2010.....40
38	Milk Price Information by Quintile, 140 New York Dairy Farms, 2010 .....41
39	Capital Efficiency, 204 New York Dairy Farms, 2010.....42
40	Asset Turnover & Profitability, 204 New York Dairy Farms, 2010.....42
41	Labor Efficiency, 204 New York Dairy Farms, 2010.....42
42	Labor Force Inventory & Cost Analysis, 204 New York Dairy Farms, 2010.....43
43	Milk Sold Per Worker & Net Farm Income, 204 New York Dairy Farms, 2010 .....43
44	Farm Business Chart for Farm Management Cooperators, 204 New York Dairy Farms, 2010 .....44

45	A Farm Finance Checklist, 204 New York Dairy Farms, 2010 .....	46
46	Financial Analysis Chart, 204 New York Dairy Farms, 2010 .....	47
47	Cows Per Farm and Farm Family Income Measures, 204 New York Dairy Farms, 2010.....	48
48	Cows Per Farm and Related Farm Factors, 204 New York Dairy Farms, 2010 .....	49
49	Progress of Farm Businesses with Less Than 110 Cows, Same 34 New York Dairy Farms, 2006-2010....	50
50	Progress of Farm Businesses with 110-499 Cows, Same 53 New York Dairy Farms, 2006-2010.....	51
51	Progress of Farm Businesses with More Than 500 Cows, Same 55 New York Dairy Farms, 2006-2010 ..	52
52	Farm Business Summary by Herd Size, 204 New York Dairy Farms, 2010 .....	53
53	Farm Family Financial Situation by Herd Size, 204 New York Dairy Farms, 2010 .....	55
54	Selected Business Factors by Herd Size, 204 New York Dairy Farms, 2010.....	59
55	Income and Expense Comparison for Farms Buying Majority of Forages Versus Similar Size Farms Growing Forages, 2010.....	63
56	Selected Business Factors for Farms Buying Majority of Forages Versus Similar Size Farms Growing Forages, 2010 .....	64
57	Selected Business Factors by Type of Barn & Herd Size, 191 New York Dairy Farms, 2010.....	65
58	Farm Business Chart for Small Conventional Stall Dairy Farms, 21 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2010 .....	66
59	Farm Business Chart for Large Conventional Stall Dairy Farms, 20 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2010 .....	67
60	Farm Business Chart for Small Freestall Dairy Farms, 40 Freestall Barn Dairy Farms with 200 or less Cows, New York, 2010.....	68
61	Farm Business Chart for Medium Freestall Dairy Farms, 24 Freestall Barn Dairy Farms with 200-400 Cows, New York, 2010 .....	69
62	Farm Business Chart for Large Freestall Dairy Farms, 86 Freestall Barn Dairy Farms with 400 or More Cows, New York, 2010.....	70
63	Intensive Grazing Farms vs. Non-Grazing Farms, New York State Dairy Farms, 2010 .....	71
64	Comparison of Farm Business Data, Same 94 New York Dairy Farms, 2001-2010 .....	72
65	Farm Receipts & Expenses Per Cow & Per Hundredweight for Three Levels of Milk Production, 204 New York Dairy Farms, 2010.....	74
66	Farm Receipts & Expenses Per Cow & Per Hundredweight for Three Herd Size Categories, 204 New York Dairy Farms, 2010.....	75
67	Comparison of Dairy Farm Business Data by Region, 201 New York Dairy Farms, 2010.....	76
68	Milk Production & Average Cost of Producing Milk, Five Regions of New York.....	77
69	Selected Business Factors by Milking Frequency, New York Dairy Farms, 2009 & 2010 .....	78
70	Farm Business Summary & Farm Family Financial Situation, 12 New York Dairy-Renter Farms, 2010 ..	79
71	Farm Business Summary & Farm Family Financial Situation, Average of 20 Top 10 Percent Farms by Rate of Return on All Capital (without appreciation), 2010 .....	80
72	Farm Business Summary & Farm Family Financial Situation, Average of 204 New York Dairy Farms, 2010.....	81
A1	Prices Paid by New York Farmers for Selected Items, 1996-2010.....	84
A2	Values and Indices of New York Dairy Farm Inventory Items, 1994-2010 .....	84
A3	Number of Dairy Farms and Milk Cows by Size of Herd, New York State, 2010 .....	85

## LIST OF FIGURES & CHARTS

		<u>Page</u>
Figure 1.	Location of the 204 New York Dairy Farms in the 2010 Dairy Farm Business Summary .....	2
Figure 2.	Percent Change in Milk Production, Five Regions in New York, 1990-2010.....	77
Chart 1.	Operating Cost of Producing Milk and Price Received for Milk.....	3
Chart 2.	Labor and Management Incomes Per Operator.....	6
Chart 3.	Operating Cost of Producing Milk and Milk Price .....	7
Chart 4.	Distribution of Labor & Management Incomes Per Operator.....	13
Chart 5.	Crop Expense Per Acre by Total Forage Production Per Acre .....	22
Chart 6.	Real Estate Investment Per Cow by Forage and Grazing Acres Per Cow .....	23
Chart 7.	Labor and Management Incomes/Operator/Cow by Forage and Grazing Acres/Cow.....	23
Chart 8.	Net Farm Income (without appreciation) by Herd Size .....	24
Chart 9.	Net Farm Income by Milk Per Cow .....	26
Chart 10.	Net Farm Income Per Cow by Milk Per Cow .....	26
Chart 11.	Milk Sold Per Cow by Cull Rate .....	27
Chart 12.	Net Farm Income Per Cow Without Appreciation by Cull Rate.....	27
Chart 13.	Production Cost by Milk Per Cow .....	32
Chart 14.	Total Cost of Producing Milk Per Cwt. by Milk Per Cow .....	32
Chart 15.	Production Cost by Herd Size.....	33
Chart 16.	Net Farm Income Per Cow by Total Cost of Producing Milk Per Hundredweight.....	34
Chart 17.	Variation in Average Milk Price.....	38
Chart 18.	Net Milk Income Over Purchased Concentrate Per Cow by Return on Assets.....	39



## INTRODUCTION

Dairy farm business summary (DFBS) projects are an integral part of Cornell Cooperative Extension's agricultural educational program in New York State. The Charles H. Dyson School of Applied Economics and Management of the College of Agriculture and Life Sciences at Cornell University, and County and Regional Extension staff, cooperate in sponsoring DFBS projects. In 2010, over 320 dairy farms participated, including dairy owners, renters, full-time, part-time, and out-of-state farms. Business records submitted by dairy farmers from 46 New York counties provide the basis for continuing Extension programs, data for applied studies, and for use in the classroom. Regardless of the use of the data, confidentiality of individual farm data is maintained.

Cornell Cooperative Extension educators enroll the cooperators and collect the records. In addition, assistance is provided by individual consultants Bruce Dehm and Charles Radick; Cathy Wickswat from Cargill Animal Nutrition; and by consultants from Farm Credit East Association. Each cooperator receives a detailed summary and analysis of his or her business. All educators are using a computer in their offices or on the farm to process and return the individual farm business reports for immediate use. The program used to generate the farm business reports can be found at the website <http://dfbs.cornell.edu>. Regional reports are prepared by Cornell faculty and used by DFBS cooperators and other farmers to compare their farm performance with regional averages.

The DFBS program helps farmers improve accounting and financial analysis techniques, develop managerial skills, solve business and financial management problems and plan the future of their business. For more information, please visit <http://dfbs.aem.cornell.edu>

Individual farm records from the three regions and 46 counties of the State (Figure 1, page 2) have been combined and the total data set analyzed to determine the effects of different levels of price, technology, and management on dairy farm incomes. This study provides current dairy farm business information for use by farmers, Cooperative Extension staff, teachers, and others concerned with the New York dairy industry.

### **Trend Analysis**

Farms in New York have changed dramatically over the past 50 years. Farms are larger, more efficient with greater rates of production and generally more profitable. Changes have also occurred in recent years especially in regard to costs and milk price (see pages 3-7).

### **Farms Included**

Data from 204 specialized dairy farms are included in the main body of this report starting on page 8. These farms do NOT represent the "average" for all dairy farms in the State. Participation was on a voluntary basis, therefore, not all areas or types of operations were proportionately represented (Figure 1, page 2). All New York DFBS participants (nearly 280) represent more than five percent of the milk cow operations in New York (see Appendix Table A3). The 204 specialized dairy farms represent a cross section of better than average commercial dairy farm owner/operators in the State. The DFBS participating farms represent 19 percent of the total New York milk production and 16 percent of the total cows in the State. Dairy farm renters, dairy-cash crop farmers with crop sales exceeding 10 percent of milk sales, part-time dairy operators, and organic farms are not included in the main body of this report. Data on dairy farm renters are summarized separately in the supplemental information section of the publication.

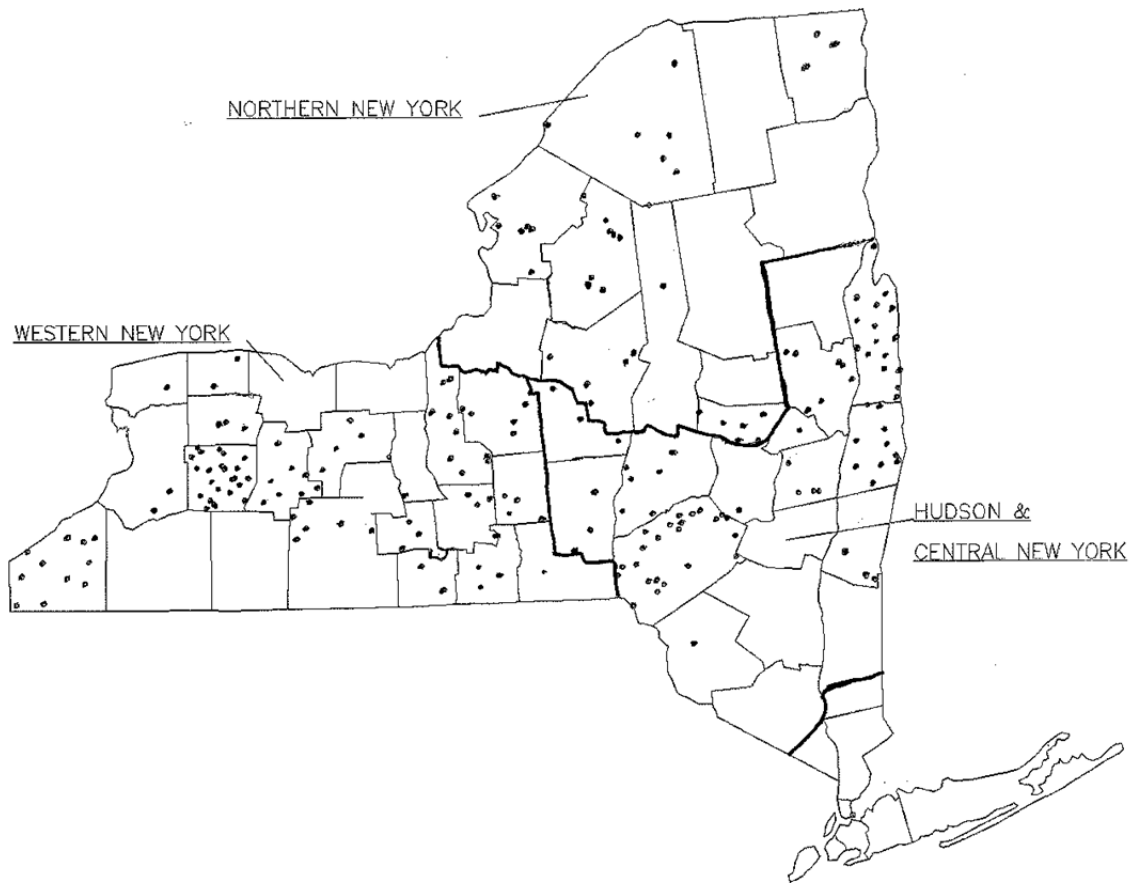
### **Features**

Accrual adjustment procedures have been used to provide the most accurate accounting of farm receipts and farm expenses for measuring farm profits. An explanation of these procedures is found on page 9. Five measures of farm profitability: net farm income, labor and management income, return on equity, return on all capital, and return to all labor and management are calculated on pages 11 through 14. The balance sheet is presented with the current portion of intermediate and long-term debt identified as a current liability, on pages 14 and 15. The statement of owner equity, which shows the interrelationship between farm profitability, non-farm cash flows and net worth is presented on page 17. A detailed cash flow statement, as well as budgeting data and debt repayment analysis are presented on pages 18 through 20.

The whole farm method of calculating the cost of producing milk is detailed on pages 28 through 33. The operating cost, purchased inputs cost and total cost of producing 100 pounds of milk are developed and analyzed. Farm business charts for farms with conventional and freestall housing are presented on pages 66 through 70. Specific studies of the performance of dairy farms using rotational grazing and three times (3X) a day milking are presented on pages 71 and 78.

Figure 1.

**LOCATION OF THE 204 NEW YORK DAIRY FARMS  
IN THE 2010 DAIRY FARM BUSINESS SUMMARY**



**2010 Regional Summary Publications**

<u>Region</u>	<u>Publications</u>	<u>Author(s)</u>
Western New York	E.B. 2011-02	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, John Hanchar, James Grace, Virginia Carlberg, Joan Petzen, Debra Welch, Richard Overton, and Cathryn Dymond.
Northern New York	E.B. 2011-07	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, Peggy Murray, Frans Vokey, Corey Hayes, Anita Deming, David Balbian, Sandy Buxton, Jim Manning, Bonnie Collins, Richard Overton, and Cathryn Dymond.
Hudson and Central New York	E.B. 2011-05	Wayne A. Knoblauch, George J. Conneman, Linda D. Putnam, Jason Karszes, Sandy Buxton, Mariane Kiraly, Kirk Shoen, Patricia Westenbroek, Joe Walsh, Richard Overton, and Cathryn Dymond.

## FIFTY YEARS OF NEW YORK STATE DAIRY FARM BUSINESS DATA

New York dairy farming has changed dramatically over the past 50 years (Table 1, page 4). Dairy cows per farm on cooperating farms increased 14 fold between 1960 and 2010 with nearly a doubling in herd size over the last 10 years. The DFBS sample is not representative of all farms in New York State. Milk output per cow increased 157 percent with the largest increase occurring between 1990 and 2000. Labor efficiency, measured by pounds of milk sold per worker, is up 458 percent on DFBS farms, and the operating cost of producing milk increased more than 620 percent with the largest jump occurring between 1970 and 1980.

There is a large increase in farm capital invested per farm, which is 91 times greater than in 1960. Net farm income per farm increased 788 percent (adjusted for 2010 dollars). Labor and management income per operator is up 314 percent from 50 years ago (adjusted for 2010 dollars). This is a reflection of the increased variability over the last 10 years. Some factors could not be calculated with 1960 and 1970 data because liabilities, interest paid, and/or appreciation were not available in those years. Farm net worth excluding deferred taxes has increased 290 percent over the last 40 years and rate of return on equity capital decreased 3.5 percent since 1980.

### FOUR YEARS OF VARIABILITY

Recognition and evaluation of the progress that has occurred on farms can best be achieved by studying the same farms over a period of time. Table 2, page 5, presents average data from 156 farms that were DFBS cooperators each year since 2007. Chart 1 shows the price received for milk in comparison to the operating cost of producing a hundredweight of milk for these farms. The higher milk price and higher costs in 2007 still provided dairy farmers with the highest operating margin per hundredweight of \$6.70.

Average net farm income without appreciation in 2010 was 40 percent below the 2007 average, and 385 percent above the 2009 average. Net worth increased 22 percent in 2007, increased 5 percent in 2008, decreased 8 percent in 2009, and increased 10 percent in 2010.

The last four years have been a period requiring skillful decision making and improved management skills on the part of New York dairy farm operators. Risk management skills, including output price management, are becoming more important to farm business success.

Chart 1.

**OPERATING COST OF PRODUCING MILK AND PRICE RECEIVED FOR MILK**  
Same 156 New York Dairy Farms, 2007-2010

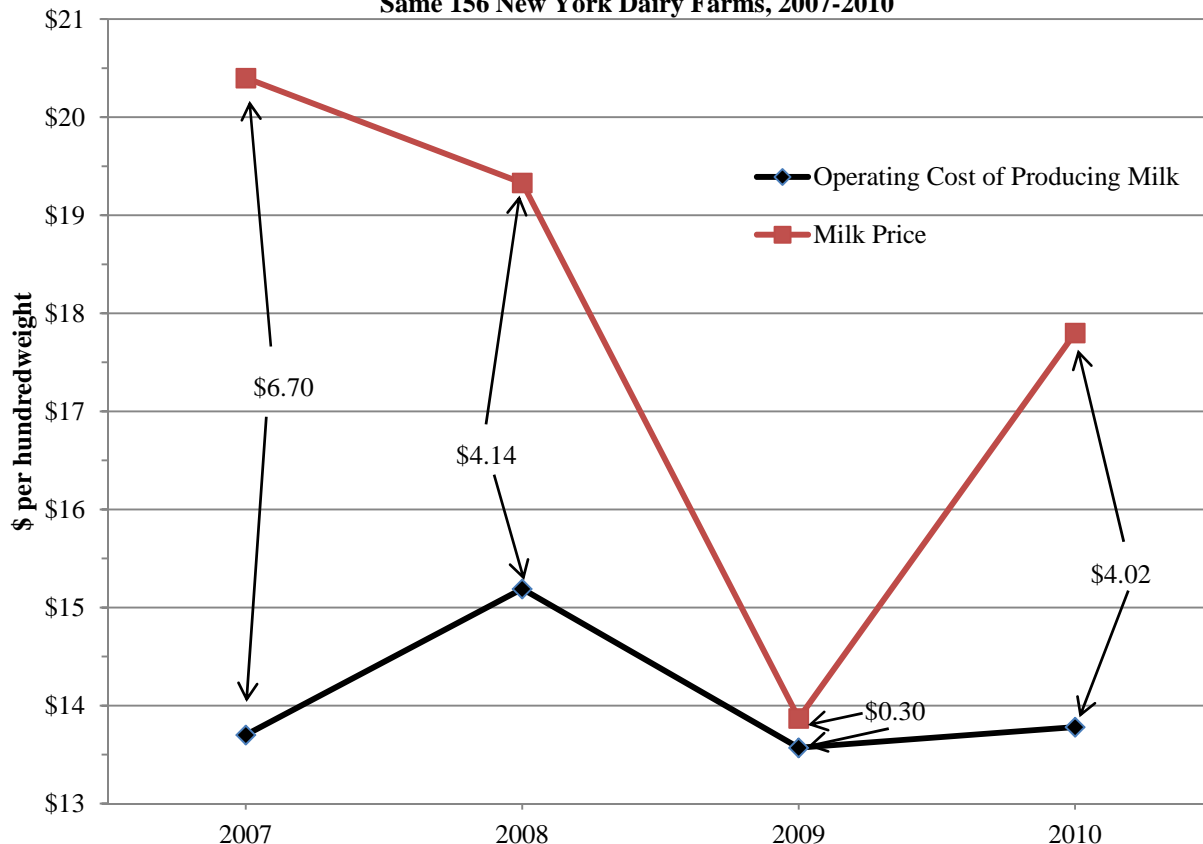


Table 1.

**COMPARISON OF FARM BUSINESS SUMMARY DATA**  
**New York Dairy Farms, 1960 - 2010**

Selected Factors	1960	1970	1980	1990	2000	2010
Number of farms	467	509	600	395	294	204
<u>Size of Business</u>						
Average number of cows	35	65	75	107	246	489
Average number of heifers	21	43	56	87	186	415
Milk sold, cwt.	3,339	8,222	10,761	19,005	52,871	119,782
Worker equivalent	1.70	2.20	2.70	3.37	6.11 <sup>4</sup>	10.93 <sup>4</sup>
Total tillable acres	96 <sup>2</sup>	168 <sup>2</sup>	246 <sup>2</sup>	325	566	987
<u>Rates of Production</u>						
Milk sold per cow, lbs.	9,540	12,600	14,300	17,720	21,516	24,508
Hay DM per acre, tons	2.3	2.7	2.5	2.7	3.3	3.5
Corn silage per acre, tons	10	15	15	14	15	20
<u>Labor Efficiency</u>						
Cows per worker	21	30	28	32	40 <sup>4</sup>	45 <sup>4</sup>
Milk sold per worker, lbs.	196,400	373,700	403,000	563,349	839,432 <sup>4</sup>	1,095,897 <sup>4</sup>
<u>Cost Control</u>						
Grain & conc. as % of milk sales	28%	25%	27%	28%	27%	29%
Dairy feed & crop expense/cwt.	\$1.61	\$1.91	\$4.49	\$5.21	\$4.61	\$6.32
Operating cost of prod. cwt. milk	\$1.91	\$2.43	\$8.65	\$11.11	\$11.31	\$13.76
Total cost of producing cwt. milk	\$3.57	\$5.73	\$14.39	\$15.50	\$14.46	\$17.06
Milk receipts per cwt. milk	\$4.64	\$6.10	\$12.81	\$14.93	\$13.38	\$17.81
<u>Capital Efficiency</u>						
Total farm capital	\$48,745	\$137,280	\$445,712	\$701,492	\$1,607,712	\$4,467,572
Farm capital per cow	\$1,392	\$2,112	\$5,500	\$6,556	\$6,535	\$9,141
Machinery & equipment per cow	\$287	\$447	\$1,015	\$1,233	\$1,225	\$1,570
Real estate per cow	\$644	\$1,026	\$2,600	\$2,977	\$2,615	\$3,857
Livestock investment per cow	\$367	\$495	\$1,569	\$1,436	\$1,572	\$2,182
Asset turnover ratio	0.42	0.48	0.45	0.48	0.54	0.56
<u>Profitability</u>						
Net farm income without apprec. <sup>5</sup>	NA <sup>3</sup>	NA <sup>3</sup>	\$77,852	\$78,523	\$59,195	\$326,482
Net farm income with apprec. <sup>5</sup>	\$46,640	\$159,198	\$140,643	\$94,475	\$107,577	\$413,954
Labor & management income per operator/manager <sup>5</sup>	\$24,531	\$87,031	\$4,147	\$23,928	\$785	\$101,484
Rate of return on:						
Equity capital with appreciation	NA	NA	11.4%	4.8%	3.0%	11.0%
All capital with appreciation	NA	NA	10.2%	6.0%	4.8%	8.5%
All capital without appreciation	NA	NA	6.9%	4.7%	2.5%	6.5%
<u>Financial Summary, End Year</u>						
Farm net worth	NA	\$100,541	\$288,022	\$480,515	\$942,881	\$3,012,912
Change in net worth with apprec.	NA	NA	NA	\$18,390	\$21,271	\$300,575
Debt to asset ratio	NA	0.29	0.36	0.34	0.43	0.35
Farm debt per cow	NA	\$700	\$2,048	\$2,220	\$2,762	\$3,207

<sup>2</sup>Acres of cropland harvested.

<sup>3</sup>NA = not available.

<sup>4</sup>Based on hours actually worked by owner/operator instead of standard 12 months per full-time owner/operator.

<sup>5</sup>Profitability measures adjusted for inflation using Consumer Price Index – 2010 dollars.

Table 2.

**COMPARISON OF FARM BUSINESS SUMMARY DATA**  
**Same 156 New York Dairy Farms, 2007 - 2010**

Selected Factors	2007	2008	2009	2010
Milk receipts per cwt. milk	\$20.40	\$19.33	\$13.87	\$17.80
<u>Size of Business</u>				
Average number of cows	436	451	472	499
Average number of heifers	353	377	403	427
Milk sold, cwt.	103,432	109,979	115,424	123,366
Worker equivalent <sup>6</sup>	10.12	10.57	10.90	11.21
Total tillable acres	894	944	975	1,015
<u>Rates of Production</u>				
Milk sold per cow, lbs.	23,724	24,373	24,429	24,718
Hay DM per acre, tons	3.1	3.6	3.4	3.6
Corn silage per acre, tons	19	20	19	20
<u>Labor Efficiency</u>				
Cows per worker <sup>6</sup>	43	43	43	45
Milk sold per worker, lbs. <sup>6</sup>	1,022,056	1,040,483	1,058,937	1,100,501
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	24%	30%	38%	29%
Dairy feed & crop expense per cwt. milk	\$6.09	\$7.24	\$6.44	\$6.30
Operating cost of producing cwt. milk	\$13.70	\$15.19	\$13.57	\$13.78
Total cost of producing cwt. milk	\$17.02	\$18.70	\$16.92	\$17.07
Hired labor cost per cwt.	\$2.72	\$2.81	\$2.70	\$2.62
Interest paid per cwt.	\$0.77	\$0.53	\$0.51	\$0.55
Labor & machinery costs per cow	\$1,494	\$1,645	\$1,467	\$1,500
<u>Capital Efficiency, Average for Year</u>				
Farm capital per cow	\$8,479	\$9,207	\$9,175	\$9,061
Machinery & equipment per cow	\$1,443	\$1,604	\$1,649	\$1,599
Real estate per cow	\$3,339	\$3,548	\$3,666	\$3,708
Livestock investment per cow	\$2,249	\$2,344	\$2,261	\$2,180
Asset turnover ratio	0.70	0.60	0.44	0.57
<u>Profitability</u>				
Net farm income without appreciation	\$559,950	\$299,385	\$-116,524	\$332,808
Net farm income with appreciation	\$739,503	\$361,861	\$-92,265	\$428,574
Labor & management income per operator/manager	\$250,610	\$87,785	\$-145,266	\$103,752
Rate return on:				
Equity capital with appreciation	26.7%	9.6%	-6.7%	11.5%
All capital with appreciation	19.9%	8.0%	-3.0%	8.8%
All capital without appreciation	14.9%	6.5%	-3.5%	6.7%
<u>Financial Summary, End Year</u>				
Farm net worth	\$2,762,332	\$2,911,959	\$2,691,509	\$3,010,003
Change in net worth with appreciation	\$612,958	\$140,069	\$-221,112	\$301,519
Debt to asset ratio	0.31	0.32	0.38	0.36
Farm debt per cow	\$2,764	\$3,033	\$3,412	\$3,265

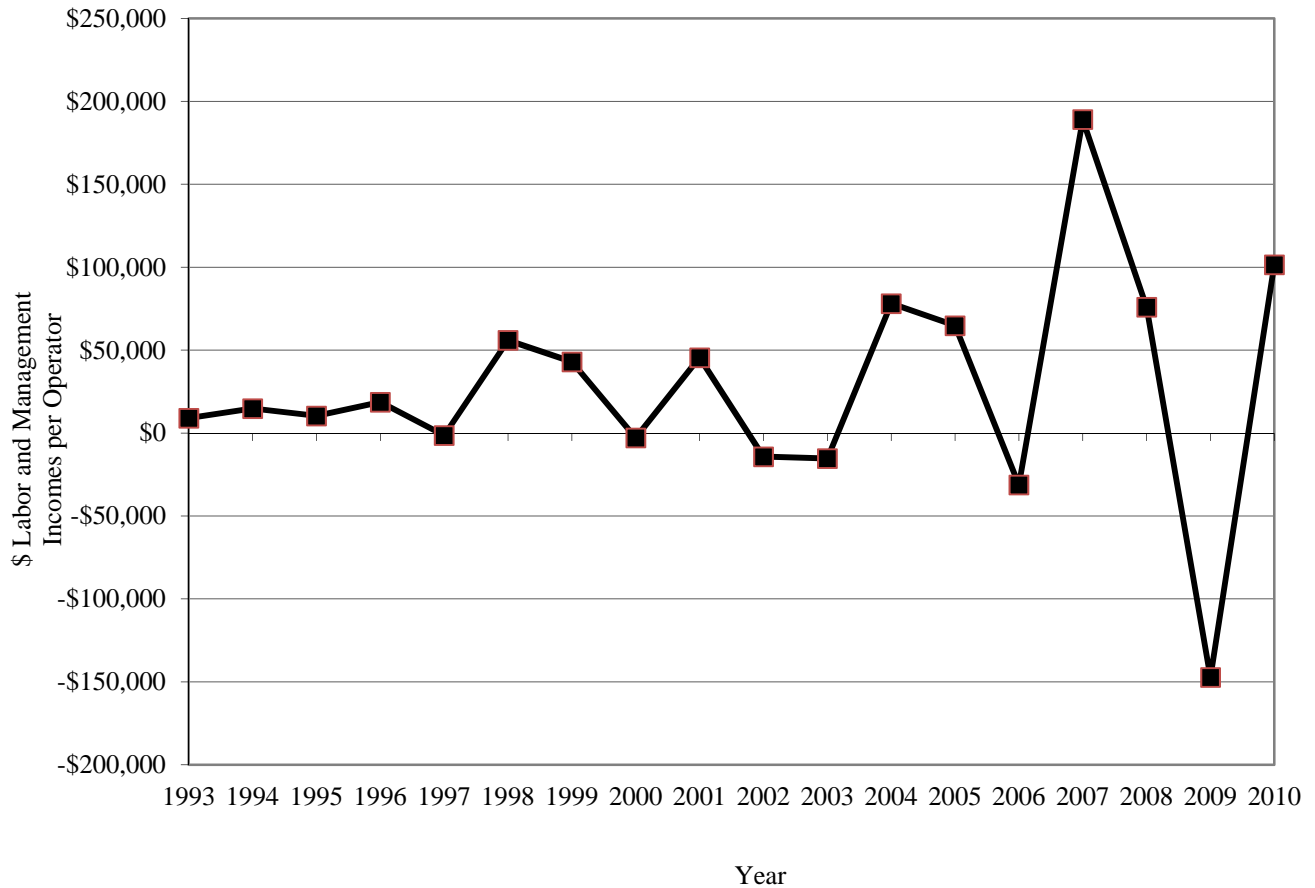
<sup>6</sup>Based on hours actually worked by owner/operator instead of standard 12 months per full-time owner/operator.

## ADJUSTING PROFIT, PRICE AND COSTS FOR INFLATION

Labor and management incomes per operator in 2010 were much improved over 2009, when measured in nominal (actual) value (Chart 2). Over the period 1993 to 2009, labor and management incomes per operator did not exceed \$50,000 except for \$55,000 in 1998, over \$78,000 in 2004, nearly \$65,000 in 2005, \$189,019 in 2007, and \$75,945 in 2008. The reader is reminded that the average herd size of DFBS participating farms steadily increased from 130 cows to 489 cows over this period.

**Chart 2.**

LABOR AND MANAGEMENT INCOMES PER OPERATOR  
Dairy Farm Business Summary Farms, 1993-2010

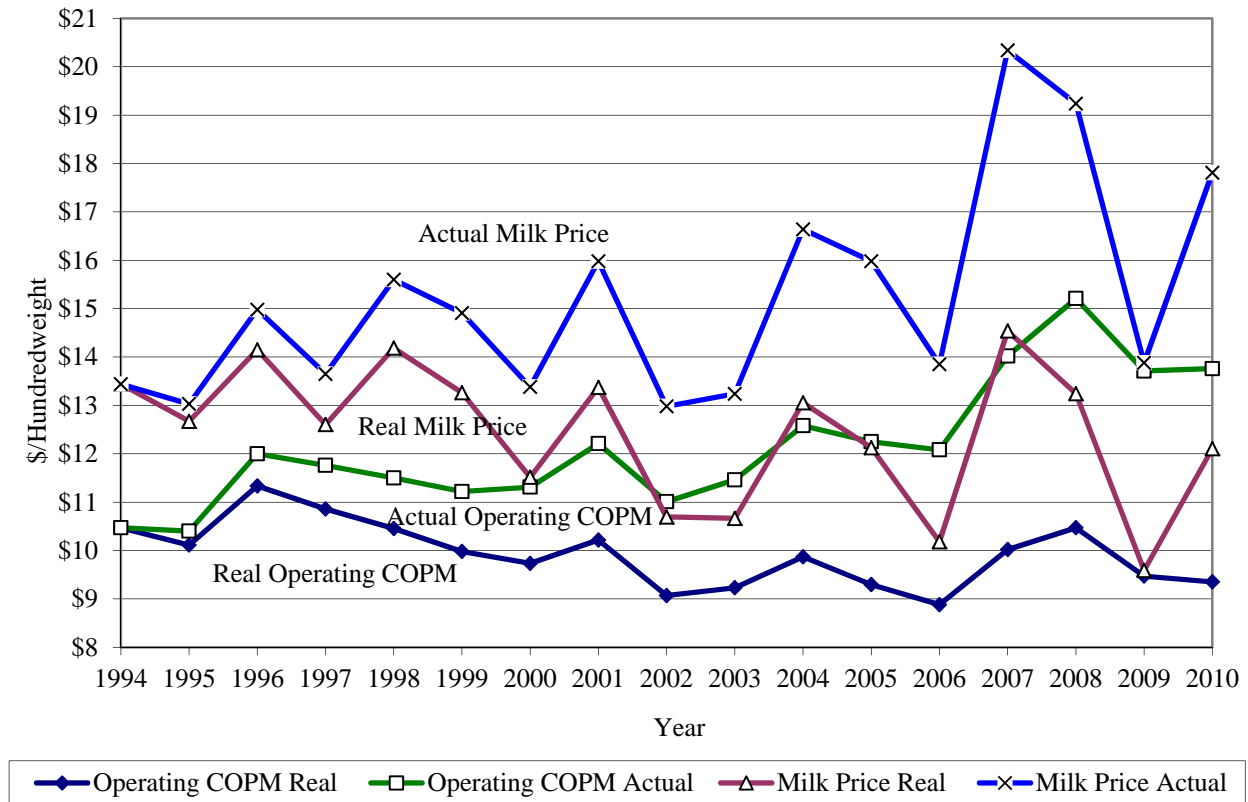


Milk prices in 2010 averaged \$17.81 per hundredweight in actual dollars (Chart 3). However, the 2010 milk price, adjusted for inflation, in 1994 dollars, would have been only \$12.10 per hundredweight.

Operating costs of producing milk (actual) were similar in 1994 and 1995 (Chart 3). Feed costs were higher in 1996 and so were operating costs of producing milk. Operating costs were on a downward trend from 1996 through 2000. Operating costs then increased in 2001, fell in 2002, and increased in 2003 and 2004, but remained higher than the early 1990's. Operating costs decreased slightly in 2005 and 2006 but increased nearly \$2 per hundredweight in 2007 and another \$1.19 in 2008 followed by a \$1.50 decrease in 2009. In 2010, operating costs increased slightly from 2009 to \$13.76 per hundredweight. Real costs of producing milk per hundredweight have been on a downward trend over this 15-year period except for increases in 1996, 2001, 2004, 2007 and 2008.

**Chart 3.**

**OPERATING COST OF PRODUCING MILK AND MILK PRICE<sup>7</sup>**  
Dairy Farm Business Summary Farms, 1994-2010



<sup>7</sup> Actual operating cost of producing milk as well as milk price are adjusted for inflation, to obtain real values, using the Consumer Price Index–1994 dollars.





## **Accounting Procedures**

Accrual accounting adjustments are made to cash receipts and expenses to accurately measure annual receipts, expenses, and farm profitability. These procedures express the true value and cost of production for the year, regardless of whether cash was received or expended in this year. Cash expenses and cash receipts are used when evaluating the cash flow position of the business.

The accrual accounting adjustments consider changes in accounts payable and receivable, prepaid expenses, and changes in inventory of not only such items as crops and livestock, but also the inventory of production items such as fertilizer, seed and fuel. In this manner, the total cost of production and the total value of production are obtained to provide an accurate representation of profitability in that year.

Accrual adjustments are complemented by accounting procedures used to separate changes in inventory of capital assets into changes caused by price and those caused by quality or quantity changes. Separating price changes (appreciation) from physical changes in the farm inventory are important in determining farm profitability. Appreciation of farm assets is included in the return to farm capital, but excluded from the return to labor and management.

## **Income Statement - Expenses**

The accrual income statement begins with an accounting of all farm business expenses. Farm business expenditures are grouped into the following nine major categories:

1. Hired labor includes gross wages plus the farm share of social security, workers' compensation insurance, employee health insurance and other employee benefits paid by the farm employer.
2. Feed expenses are divided into purchased dairy grain and concentrate, purchased dairy roughage and all feed purchased for nondairy livestock to allow more thorough analysis of dairy herd feeding costs. The costs of growing grain and roughage are not included in cash and accrual feed expenses.
3. Machinery costs represent all the operating costs of using machinery on the farm. Ownership costs are excluded here but are included in the analysis of machinery costs presented on page 22.
4. Livestock expenses include the cost of supplies and services directly associated with the care and maintenance of the dairy herd, such as breeding, veterinary, bedding, milking supplies and custom boarding expenses plus milk marketing costs. The purchase of replacement cattle is considered a herd maintenance expense while expansion livestock is not.
5. Crop expenses include the costs of fertilizer, lime, seeds, spray and other crop supplies.
6. Real estate expenses are the direct costs associated with owning and maintaining farm land and buildings.
7. Other includes insurance, the farm share of utilities, interest paid on all farm indebtedness and miscellaneous costs.
8. Expansion livestock is purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year. It is a nonoperating cost included in total expenses.
9. Depreciation of machinery and buildings are nonoperating costs included in total expenses. Depreciation charges are based on those reported for income tax purposes.

Cash and accrual farm expenses are summarized below. Total operating accrual expenses for the 204 farms averaged \$5,264 per day and 92 percent of total farm accrual expenses. Cash paid is the actual amount of money paid out during the year and does not necessarily represent the cost of goods and services actually used.

Table 4.

**CASH AND ACCRUAL FARM EXPENSES**  
**204 New York Dairy Farms, 2010**

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses	Percent
<u>Hired Labor</u>	\$312,194		-\$368 <<		\$-28		\$312,534	16
<u>Feed</u>								
Dairy grain & concentrate	634,598		10,573		-16,874		607,151	32
Dairy roughage	36,951		-533		631		38,115	2
Nondairy livestock	867		0		-1		866	<1
Professional nutritional services	622		0 <<		48		670	<1
<u>Machinery</u>								
Machinery hire, rent & lease	43,121		-54 <<		141		43,316	2
Machinery repairs & farm vehicle expense	96,370		337		-642		95,391	5
Fuel, oil & grease	77,822		327		-133		77,362	4
<u>Livestock</u>								
Replacement livestock	6,600		0 <<		22		6,622	<1
Breeding	25,026		-51		-70		25,007	1
Veterinary & medicine	76,018		-338		-1,050		75,306	4
Milk marketing	106,737		0 <<		325		107,062	6
Bedding	42,187		35		-235		41,916	2
Milking Supplies	44,034		171		-294		43,569	2
Cattle lease & rent	1,492		0 <<		-1		1,490	<1
Custom boarding	41,550		-1,291 <<		174		43,016	2
bST expense	27,663		-365 <<		-42		27,986	1
Livestock professional fees	6,481		122 <<		-54		6,304	<1
Other livestock expense	10,046		2		147		10,191	1
<u>Crops</u>								
Fertilizer & lime	48,543		3,328		-1,281		43,934	2
Seeds & plants	49,905		6,084		-1,168		42,654	2
Spray & other crop expense	21,425		97		-284		21,044	1
Crop professional fees	4,112		74 <<		-27		4,010	<1
<u>Real Estate</u>								
Land, building & fence repair	31,871		41		-396		31,435	2
Taxes	26,560		48 <<		82		26,594	1
Rent & lease	29,102		48 <<		46		29,099	2
<u>Other</u>								
Insurance	20,668		60 <<		-49		20,558	1
Utilities	49,726		-91 <<		-142		49,675	3
Interest paid	63,959		6 <<		90		64,042	3
Other professional fees	11,061		-94 <<		9		11,164	1
Miscellaneous	<u>12,425</u>		<u>3</u>		<u>708</u>		<u>13,129</u>	<u>1</u>
Total Operating	\$1,959,734		\$18,172		\$-20,349		\$1,921,213	100
Expansion livestock	\$10,033		0 <<		0		\$10,033	
Extraordinary expense	\$760		0		0		\$760	
Machinery depreciation							\$94,106	
Building depreciation							\$63,828	
<b>TOTAL ACCRUAL EXPENSES</b>							<b>\$2,089,940</b>	

Change in inventory represents feeds and supplies purchased this year but not used (positive change), and similar items purchased in a prior year and used this year (negative change). For example, used dairy roughage inventory from a prior year was \$533.

Prepaid expenses (noted by « in Table 4) are advance payments made for services and noninventory items to be used in future years. For example, advance payments for utilities decreased an average of \$91 per farm in 2010, and that decrease is added to cash rent to determine the correct 2010 accrual utilities expense.

Changes in accounts payable reflect supplies/services used in this year's production but not paid for (positive change), and payments for production inputs used in a prior year (negative change).

Accrual expenses are cash expenses adjusted for changes in inventory, prepaid expenses and accounts payable. They are the total costs of inputs actually used in this year's business. Total change in inventory and prepaid expenses equals \$18,172 and total change in accounts payable equals \$-20,349.

### **Income Statement - Receipts**

Cash and accrual farm receipts are presented in the following table. Total cash receipts averaged \$2,299,433 per farm. Total accrual receipts averaged \$2,416,422 per farm. Accrual receipts were greater than cash receipts due to dairy herd and homegrown feed inventory growth. Cow numbers increased an average of 21 head per farm. Homegrown feed inventory per cow increased \$57 from beginning to end of year.

**Table 5.**

#### **CASH AND ACCRUAL FARM RECEIPTS 204 New York Dairy Farms, 2010**

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts	Percent
Milk sales	\$2,104,902				\$28,352		\$2,133,253	88
Dairy cattle	98,132		\$41,905		103		140,140	6
Dairy calves	10,975		2,172		5		13,152	1
Other livestock	4,489		912		635		6,037	<1
Crops	24,687		43,732		-696		67,723	3
Government receipts	15,944		-63		214		16,095	1
Custom machine work	5,294				-360		4,934	<1
Gas tax refund	368				0		368	<1
Other	34,642				77		34,720	1
- Nonfarm noncash capital transfer <sup>9</sup>			(-) 0				(-) 0	
<b>Total</b>	<b>\$2,299,433</b>		<b>\$88,659</b>		<b>\$28,330</b>		<b>\$2,416,422</b>	<b>100</b>

<sup>8</sup>Change in advanced government receipts.

<sup>9</sup>Gifts or inheritances of cattle or crops included in inventory.

Cash receipts include the gross value of milk checks received during the year plus all other payments received for the sale of farm products, services and government programs.

Accrual receipts represent the value of all farm commodities produced and services actually provided by the farmer during the year. Increases in livestock inventory caused by herd growth and/or quality, are included. Decreases in inventory caused by herd reduction are deducted. Changes in inventories of crops grown are included. Changes in advanced government receipts are the amount by which government payments received for participating in a future year's program have changed from 2009 to 2010. An increase requires a negative adjustment to cash receipts while a decrease is a positive adjustment. Changes in accounts receivable include the difference between the January milk check for December 2010 marketings and the previous January's check, and other delayed payments.

Nonfarm noncash capital transfers are gifts and inheritances of cattle and crops received by the farm owner/operator, and included in inventory or used in the business during the year. They are deducted from growth in inventory and reduce accrual receipts because they came from outside the farm business. Gifts and inheritances of machinery and real estate are accounted for in Table 12.

## **Profitability Analysis**

Farm owners/operators contribute labor, management, and capital to their businesses. The best combination of these resources produces optimum profits. Farm profits can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

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

Net farm income is computed with and without appreciation. Appreciation represents the change in farm inventory values caused by changes in prices during the year. Appreciation is a major factor contributing to changes in farm net worth and must be included in the profitability analysis. Net appreciation totaled \$87,472 per farm in 2010. On the average, farm real estate appreciated \$65,940 or 3.6 percent of beginning fair market value. Machinery appreciated 2.8 percent while dairy cattle prices appreciated 0.1 percent in 2010.

Average data from 20 farms with the highest rates of return to all capital (without appreciation) are compared with the 204 farm average in Table 8 and in many of the following tables. Net farm income without appreciation averaged \$1,016,663 per farm on the top 10 percent farms, 211 percent greater than the 204-farm average.

**Table 6.**

### **NET FARM INCOME 204 New York Dairy Farms, 2010**

Item	Average 204 Farms		Average Top 10% Farms <sup>10</sup>	
	Per Farm	Per Cow	Per Farm	Per Cow
Total accrual receipts	\$2,416,422		\$4,268,147	
+ Appreciation: Livestock	915		4,047	
Machinery	20,672		30,072	
Real Estate	65,940		46,733	
Other Stock & Certificates	<u>-55</u>		<u>11,874</u>	
= Total including appreciation	\$2,503,894		\$ 4,360,874	
- Total accrual expenses	<u>2,089,940</u>		<u>3,251,484</u>	
= Net Farm Income (with appreciation)	\$413,954	\$847	\$1,109,390	\$1,365
Net Farm Income (without appreciation)	\$326,482	\$668	\$1,016,663	\$1,251

<sup>10</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Labor and management income is the part of net farm income without appreciation returned to the operator(s) labor and management. Appreciation is not included as part of the return to labor and management. Labor and management income is determined by deducting the charge for unpaid family labor and the cost of using equity capital at a real interest rate of five percent, from net farm income excluding appreciation. The interest charge reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments. Operator(s)' labor is not included in unpaid family labor.

Labor and management income per operator measures the return to one full-time operator's labor and management. A full-time operator provides 12 months of labor and management.

**Table 7.**

**LABOR AND MANAGEMENT INCOME  
204 New York Dairy Farms, 2010**

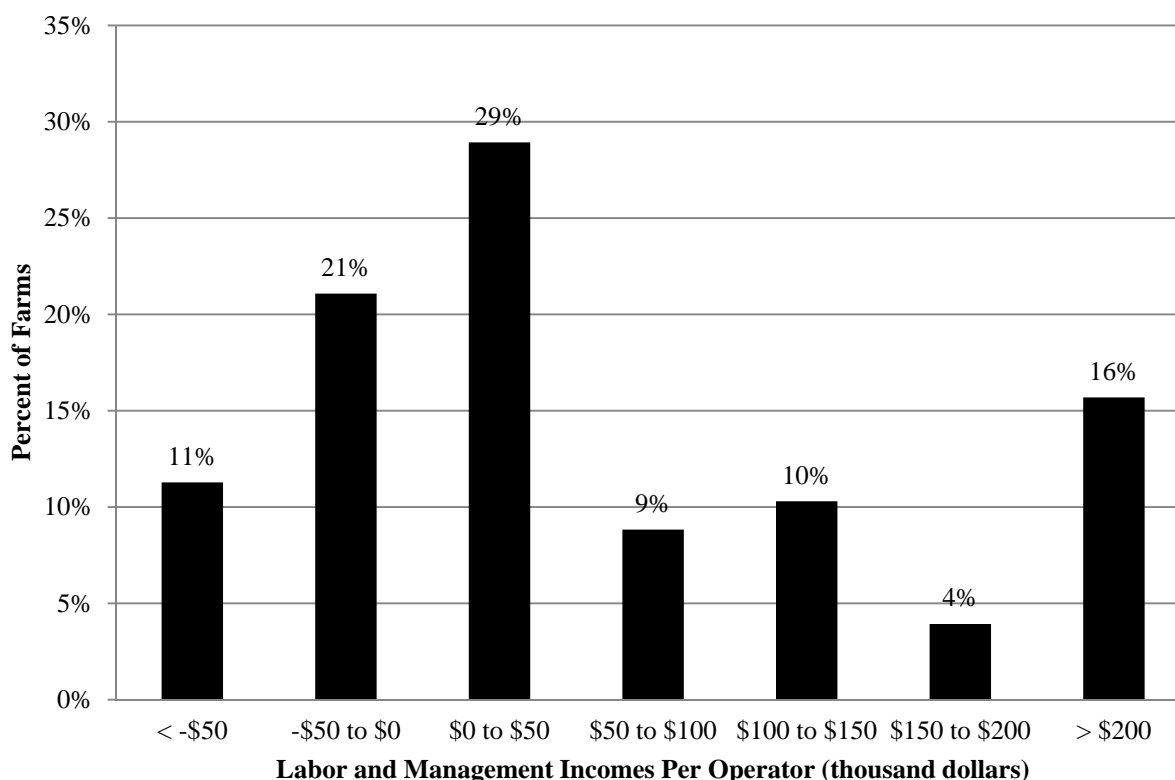
Item	Average 204 Farms		Average Top 10% Farms <sup>11</sup>
Net farm income without appreciation	\$ 326,482		\$1,016,663
- Family labor unpaid @ \$2,500 per month	4,237		888
- Real interest @ 5% on \$2,862,624 equity capital for average & \$4,908,359 for the top 10% farms	<u>137,544</u>		<u>245,418</u>
= Labor & Management Income (1.82 operators)	\$184,702	(1.92 operators)	\$770,358
Labor & Management Income per Operator	\$101,484		\$401,228

<sup>11</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Labor and management income per operator averaged \$101,484 on these 204 dairy farms in 2010. The range in labor and management income per operator was from less than \$-244,000 to more than \$1,070,000. Returns to labor and management were less than \$0 on 32 percent of the farms. Labor and management incomes per operator were between \$0 and \$100,000 on 38 percent of the farms while 30 percent showed labor and management incomes of \$100,000 or more per operator.

**Chart 4.**

**DISTRIBUTION OF LABOR AND MANAGEMENT INCOMES PER OPERATOR  
204 New York Dairy Farms, 2010**



Return to equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner/operator's labor and management and unpaid family labor. The earnings or amount of net farm income allocated to labor and management is the opportunity cost or value of operator(s) labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the year's average farm net worth or equity capital. Return to all capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on average total capital. Net farm income from operations ratio is net farm income (without appreciation) divided by total accrual receipts.

**Table 8.**

**RETURN TO CAPITAL  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>12</sup>
Net farm income with appreciation	\$413,954	\$1,109,390
- Family labor unpaid at \$2,500 per month	4,237	888
- Value of operators' labor & management	<u>95,356</u>	<u>119,488</u>
= Return to equity capital with appreciation	\$314,361	\$989,014
+ Interest paid	<u>64,042</u>	<u>76,691</u>
= Return to all capital with appreciation	\$378,403	\$1,065,705
Return to equity capital without appreciation	\$226,889	\$896,288
Return to all capital without appreciation	\$290,931	\$972,978
Rate of return on average equity capital:		
with appreciation	11.0%	20.2%
without appreciation	7.9%	18.3%
Rate of return on all capital:		
with appreciation	8.5%	15.9%
without appreciation	6.5%	14.5%
Net farm income from operations ratio	0.14	0.24

<sup>12</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Return to all labor and management is another measure of profitability of a business that can be calculated. It is calculated by adding the charge for unpaid family labor and the hired labor expense to labor and management income. Table 9 shows that farms with higher return to all capital with appreciation also had significantly higher return per hour to all labor and management.

**Table 9.**

**RETURN TO ALL LABOR AND MANAGEMENT BY RETURN  
TO ALL CAPITAL WITH APPRECIATION  
204 New York Dairy Farms, 2010**

Item	Quartile by Return to All Capital With Appreciation			
	Lowest 25%	3rd 25%	2nd 25%	Top 25%
Return to all capital with appreciation	\$-47,597	\$107,129	\$468,362	\$985,719
Rate of return on all capital with appreciation	-3.0%	3.5%	7.5%	14.2%
Total returns to all labor & management	\$17,629	\$211,399	\$642,378	\$1,134,483
Worker equivalent	3.88	8.35	14.67	16.82
Return per worker equivalent	\$4,544	\$25,317	\$43,789	\$67,448
Returns/hour (2,760 hours/worker/year)	\$1.65	\$9.17	\$15.87	\$24.44

**Farm and Family Financial Status**

Evaluating the financial status of the farm business and the farm family is an important part of business analysis. The first step is to inventory all the assets, determine all liabilities and fill out the balance sheet. The second step is to analyze the complete balance sheet by evaluating the relationships between assets and liabilities and changes made during the year.

**Table 10.**

**2010 FARM BUSINESS AND NONFARM BALANCE SHEET**  
**204 New York Dairy Farms, 2010**

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 40,391	\$ 42,323	Accounts payable	\$ 87,118	\$ 66,769
Accounts receivable	140,953	169,283	Operating debt	115,563	89,542
Prepaid expenses	4,372	2,833	Short term	6,086	6,954
Feed & supplies	<u>414,094</u>	<u>477,537</u>	Advanced gov't. receipt	378	441
Total Current	\$599,810	\$691,975	Current portion:		
			Intermediate	117,927	126,738
			Long term	<u>44,311</u>	<u>48,062</u>
			Total Current	\$371,384	\$338,505
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy Cows:			Structured debt		
owned	\$655,776	\$684,250	1-10 years	\$653,108	\$628,919
leased	1,128	656	Financial lease		
Heifers	379,370	393,571	(cattle & machinery)	7,298	5,605
Bulls & other livestock	8,006	11,234	Farm Credit stock	<u>1,265</u>	<u>1,227</u>
Mach. & equip. owned	750,363	773,211	Total Intermediate	\$661,671	\$635,751
Mach. & equip. leased	6,170	4,950			
Farm Credit stock	1,265	1,227	<u>Long Term</u>		
Other stock & certificates	<u>93,125</u>	<u>108,590</u>	Structured debt		
Total Intermediate	\$1,895,202	\$1,977,689	≥ 10 years	\$581,741	\$619,932
<u>Long Term</u>			Financial lease		
Land & buildings:			(structures)	<u>263</u>	<u>462</u>
owned	\$1,832,121	\$1,937,436	Total Long Term	\$582,004	\$620,394
leased	<u>263</u>	<u>462</u>			
Total Long Term	\$1,832,384	\$1,937,898	Total Farm Liabilities	\$1,615,059	\$1,594,650
Total Farm Assets	\$4,327,396	\$4,607,562	FARM NET WORTH	\$2,712,337	\$3,012,912
Nonfarm Assets <sup>13</sup>	Jan.1	Dec. 31	Nonfarm Liabilities <sup>13</sup> & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 16,955	\$ 18,052	Nonfarm Liabilities	\$4,194	\$3,949
Cash value life insurance	41,737	45,149	NONFARM NET WORTH	\$261,664	\$270,545
Nonfarm real estate	136,185	129,667	FARM & NONFARM <sup>14</sup>	Jan. 1	Dec. 31
Auto (personal share)	5,472	5,396	Total Assets	\$4,593,254	\$4,882,057
Stocks & bonds	38,346	43,895	Total Liabilities	<u>1,619,253</u>	<u>1,598,599</u>
Household furnishings	6,417	6,514	TOTAL FARM & NON-		
All other	<u>20,746</u>	<u>25,822</u>	FARM NET WORTH	\$2,974,001	\$3,283,458
Total Nonfarm	\$265,858	\$274,495			

<sup>13</sup>Average of 72 farms completing the nonfarm balance sheet.

<sup>14</sup>Sum of average farm values for 204 farms and nonfarm values for 72 farms.

Financial lease obligations are included in the balance sheet. The present values of all future payments are listed as liabilities since the farmer (lessee) is committed to making the payments. The present values are also listed as assets, representing the future value the item has to the business.

The farm balance sheet analysis includes financial and debt ratios and factors measuring levels of debt. Percent equity is calculated by dividing farm net worth by farm assets. Equity increases as the value of assets increase more than liabilities. The debt to asset ratios reflect strength in solvency and the potential capacity to borrow. The debt analysis ratios show how well the debt is structured and managed. The leverage ratio is the dollars of debt per dollar of equity, computed by dividing total farm liabilities by farm net worth. Debt levels per unit of productive capacity include some old standards that are still useful if used with measures of cash flow and repayment ability.

**Table 11.**

**FARM BALANCE SHEET ANALYSIS**  
**204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>15</sup>		
<u>Farm Financial Ratios:</u>				
Percent equity	65%	76%		
Debt/asset ratio: total	0.35	0.24		
long term	0.32	0.17		
intermediate & current	0.36	0.29		
Leverage Ratio:	0.53	0.32		
Current Ratio:	2.04	2.55		
Working Capital: \$353,470    Dollars as % of Total Expenses:	17%	\$702,319    22%		
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	4%	2%		
Long term liabilities as % of total debt	39%	28%		
Current & intermediate liabilities as % of total debt	61%	72%		
Cost of term debt (weighted average)	5.4%	3.9%		
<u>Farm Debt Levels:</u>				
	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$3,207	\$3,224	\$2,026	\$2,156
Long term debt	1,248	1,254	559	595
Intermediate & long term	2,526	2,539	1,486	1,581
Intermediate & current debt	1,959	1,970	1,467	1,561

<sup>15</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

The farm inventory balance accounts for the changes in the values of major farm assets from the beginning to the end of the year.

**Table 12.**

**FARM INVENTORY BALANCE**  
**204 New York Dairy Farms, 2010**

Item	Real Estate	Machinery & Equipment	Livestock
Value beginning of year	\$1,832,121	\$750,363	\$1,043,151
Purchases	\$141,698 <sup>16</sup>	\$103,162	
+ nonfarm noncash transfer <sup>17</sup>	4,196	338	
- Lost capital	40,319		
- Net sales	2,372	7,219	
- Depreciation	<u>63,828</u>	<u>94,106</u>	
= Net Investment	39,374	2,176	44,990
+ Appreciation	<u>65,940</u>	<u>20,672</u>	<u>915</u>
Value end of year	\$1,937,436	\$773,211	\$1,089,056

<sup>16</sup>\$42,598 land and \$99,100 buildings and/or depreciable improvements.

<sup>17</sup>Gifts and inheritances of property transferred into the farm business from outside.



The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are consistent (in accountants' terms they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows the farmer to determine to what degree the changes in equity were caused by (1) earnings from the business, and nonfarm income, (in excess of withdrawals) being retained in the business (retained earnings), (2) outside capital invested in the business or farm capital removed from the business (called contributed/withdrawn capital) and (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity).

Retained earnings are an excellent indicator of farm generated financial progress.

**Table 13.**

**STATEMENT OF OWNER EQUITY (RECONCILIATION)  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>19</sup>
Beginning of year farm net worth	\$2,712,337	\$4,469,605
Net farm income without appreciation	\$326,482	\$1,016,663
+ Nonfarm cash income	9,280	1,956
- Personal withdrawals & family expenditures and income taxes, excluding nonfarm borrowings	<u>109,131</u>	<u>170,511</u>
RETAINED EARNINGS	+ \$226,631	+ \$848,109
Nonfarm noncash transfers to farm	\$ 4,534	\$ 0
+ Cash used in business from nonfarm capital	21,431	9,194
- Note or mortgage from farm real estate sold (nonfarm)	<u>16</u>	<u>0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$25,948	+ \$9,194
Appreciation	\$ 87,472	\$92,727
- Lost capital	<u>40,319</u>	<u>77,096</u>
CHANGE IN VALUATION EQUITY	+ \$47,153	+ \$15,631
IMBALANCE/ERROR	<u>- \$-843</u>	<u>- \$-4,575</u>
End of year farm net worth <sup>18</sup>	\$3,012,912	\$5,347,114
<u>Change in Net Worth</u>		
Without appreciation	\$213,103	\$784,782
With appreciation	\$300,575	\$877,509

<sup>18</sup>May not add due to rounding.

<sup>19</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

### Cash Flow Summary and Analysis

Completing an annual cash flow statement is an important step in understanding and organizing the sources and uses of funds for the business. It is also a means useful in determining accuracy and completeness of the data. Understanding last year's cash flow is the first step in planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows are included. Therefore the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash flows.

**Table 14.**

#### **ANNUAL CASH FLOW STATEMENT 204 New York Dairy Farms, 2010**

Item	Average 204 Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$2,299,433	
- Cash farm expenses	1,959,734	
- Extraordinary expense	<u>760</u>	
= Net cash farm income		\$338,939
Personal withdrawals & family expenses including nonfarm debt payments	\$109,391	
- Nonfarm income	<u>9,280</u>	
- Net cash withdrawals from the farm		<u>\$ 100,112</u>
= Net Provided by Operating Activities		\$238,828
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$7,219	
+ real estate	2,356	
+ other stock & certificates	<u>1,561</u>	
= Total asset sales		\$11,135
Capital purchases: expansion livestock	\$ 10,033	
+ machinery	103,162	
+ real estate	141,698	
+ other stock & certificates	<u>17,081</u>	
- Total invested in farm assets		<u>\$271,974</u>
+ Net Provided by Investment Activities		\$-260,838
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$208,484	
+ Money borrowed (short term)	4,490	
+ Increase in operating debt	0	
+ Cash from nonfarm capital used in business	21,431	
+ Money borrowed - nonfarm	<u>260</u>	
= Cash inflow from financing		\$234,664
Principal payments (intermediate & long term)	\$181,922	
+ Principal payments (short term)	3,623	
+ Decrease in operating debt	<u>26,021</u>	
- Cash outflow for financing		<u>\$211,566</u>
= Net Provided by Financing Activities		\$23,099
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$40,391
- Ending farm cash, checking & savings		<u>\$42,323</u>
= Net Provided from Reserves		\$-1,932
<u>Imbalance (error)</u>		\$-844

Table 15.

**ANNUAL CASH FLOW DATA**  
**204 New York Dairy Farms, 2010**

Item	Average 204 Farms			Average Top 10% Farms <sup>21</sup>		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Average number of cows and cwt. milk		489	119,780		813	206,825
<u>Accrual Operating Receipts</u>						
Milk	\$2,133,254	\$4,365	\$17.81	\$3,731,227	\$4,592	\$18.04
Dairy cattle	140,140	287	1.17	278,803	343	1.35
Dairy calves	13,152	27	0.11	14,439	18	0.07
Other livestock	6,037	12	0.05	21,976	27	0.11
Crops	67,723	139	0.57	136,732	168	0.66
Miscellaneous receipts	<u>56,116</u>	<u>115</u>	<u>0.47</u>	<u>84,970</u>	<u>105</u>	<u>0.41</u>
Total	\$2,416,422	\$4,944	\$20.17	\$4,268,147	\$5,253	\$20.64
<u>Accrual Operating Expenses</u>						
Hired labor	\$ 312,534	\$ 639	\$ 2.61	\$ 542,983	\$ 668	\$ 2.63
Dairy grain & concentrate	607,151	1,242	5.07	951,568	1,171	4.60
Dairy roughage	38,115	78	0.32	62,649	77	0.30
Nondairy feed	866	2	0.01	69	0	0.00
Professional nutritional services	670	1	0.01	1,531	2	0.01
Machinery hire, rent & lease	43,316	89	0.36	78,084	96	0.38
Machinery repairs & vehicle expense	95,391	195	0.80	142,408	175	0.69
Fuel, oil & grease	77,362	158	0.65	113,943	140	0.55
Replacement livestock	6,622	14	0.06	301	0	0.00
Breeding	25,007	51	0.21	40,554	50	0.20
Veterinary & medicine	75,306	154	0.63	119,484	147	0.58
Milk marketing	107,062	219	0.89	174,524	215	0.84
Bedding	41,916	86	0.35	67,515	83	0.33
Milking supplies	43,569	89	0.36	59,066	73	0.29
Cattle lease	1,490	3	0.01	4,134	5	0.02
Custom boarding	43,016	88	0.36	55,825	69	0.27
bST expense	27,986	57	0.23	56,852	70	0.27
Livestock professional fees	6,304	13	0.05	11,738	14	0.06
Other livestock expense	10,191	21	0.09	8,729	11	0.04
Fertilizer & lime	43,934	90	0.37	60,453	74	0.29
Seeds & plants	42,654	87	0.36	69,222	85	0.33
Spray/other crop expense	21,044	43	0.18	27,426	34	0.13
Crop professional fees	4,010	8	0.03	6,059	7	0.03
Land, building & fence repair	31,435	64	0.26	50,045	62	0.24
Taxes	26,594	54	0.22	36,189	45	0.17
Real estate rent & lease	29,099	60	0.24	53,627	66	0.26
Insurance	20,558	42	0.17	28,851	36	0.14
Utilities	49,675	102	0.41	79,410	98	0.38
Miscellaneous	<u>24,293</u>	<u>50</u>	<u>0.20</u>	<u>32,594</u>	<u>40</u>	<u>0.16</u>
Total Less Interest Paid	\$1,857,171	\$3,800	\$15.50	\$2,935,834	\$3,613	\$14.19
<u>Net Accrual Operating Income</u>						
(without interest paid)	\$ 559,251	\$1,144	\$ 4.67	\$1,332,313	\$1,640	\$ 6.44
- Change in livestock & crop inventory	88,659	181	0.74	227,413	280	1.10
- Change in accounts receivable	28,330	58	0.24	101,068	124	0.49
- Change in feed & supply inventory	18,172	37	0.15	82,076	101	0.40
+ Change in accounts payable <sup>20</sup>	<u>-20,439</u>	<u>-42</u>	<u>-0.17</u>	<u>-57,087</u>	<u>-70</u>	<u>-0.28</u>
NET CASH FLOW	\$ 403,652	\$ 826	\$ 3.37	\$ 864,668	\$1,064	\$ 4.18
- Net personal withdrawals & family exp.	<u>98,987</u>	<u>203</u>	<u>0.83</u>	<u>168,522</u>	<u>207</u>	<u>0.81</u>
Available for Farm Debt Payments & Invest.	\$ 304,665	\$ 623	\$ 2.54	\$ 696,147	\$ 857	\$ 3.37
- Farm debt payments	<u>313,250</u>	<u>641</u>	<u>2.62</u>	<u>476,766</u>	<u>587</u>	<u>2.31</u>
Cash available for Farm Investments	\$ -8,585	\$ -18	\$ -0.08	\$ 219,381	\$ 270	\$ 1.06

<sup>20</sup>Exclude change in interest account payable.<sup>21</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

### Repayment Analysis

The second step in cash flow planning and management is to compare and evaluate debt payments planned and made last year, and then to estimate the payments required in the current year. It is helpful to compare and evaluate a farm's repayment position by using debt payments per unit of production and receipt/debt payment ratios. The data below are from farms that completed summaries for both 2009 and 2010.

**Table 16.**

#### FARM DEBT PAYMENTS PLANNED 185 New York Dairy Farms, 2010

Debt Payments	185 Dairy Farms			20 Top 10% Farms		
	2010 Payments		Planned	2010 Payments		Planned
	Planned	Made	2011	Planned	Made	2011
Long term	\$ 64,780	\$ 79,780	\$ 77,303	\$ 60,045	\$ 122,211	\$ 105,332
Intermediate term	150,248	174,855	166,465	218,045	269,424	222,151
Short term	4,468	4,092	4,588	0	0	13,972
Operating (net reduction)	14,798	34,410	9,500	27,778	38,251	15,000
Accts. payable (net reduction)	4,430	31,366	3,797	5,556	75,687	0
Total	\$238,724	\$324,403	\$261,653	\$311,423	\$505,572	\$356,455
Per cow	\$467	\$635		\$369	\$600	
Per cwt. 2010 milk	\$1.89	\$2.57		\$1.40	\$2.27	
Percent of 2010 milk receipts	11%	14%		8%	13%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments from normal operation of the business. Debt coverage ratio indicates the income generated to make payments while cash flow coverage ratio shows the cash available to make payments.

**Table 17.**

#### COVERAGE RATIOS 185 New York Dairy Farms, 2010

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$2,422,175	Net farm income (without appreciation)	\$347,620
- Cash farm expenses	2,063,625	+ Depreciation	166,514
+ Interest paid (cash)	66,195	+ Interest paid (accrual)	66,319
- Net personal withdrawals from farm <sup>22</sup>	104,903	- Net personal withdrawals from farm <sup>22</sup>	104,903
(A) = Amount Available for Debt Service	\$319,842	(A') = Repayment Capacity	\$475,550
(B) = Debt Payments Planned for 2010 (as of December 31, 2009)	\$238,725	(B) = Debt Payments Planned for 2010 (as of December 31, 2009)	\$238,725
(A/B)= Cash Flow Coverage Ratio for 2010	1.34	(A'/B)= Debt Coverage Ratio for 2010	1.99
-----			
20 Top 10% Dairy Farms, 2010			
(A) = Amount Available for Debt Service	\$735,385	(A') = Repayment Capacity	\$1,215,180
(B) = Debt Payments Planned for 2010	311,423	(B) = Debt Payments Planned for 2010	311,423
(A/B)= Cash Flow Coverage Ratio for 2010	2.36	(A'/B)= Debt Coverage Ratio for 2010	3.90

<sup>22</sup>Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If excluded, the coverage ratios will represent repayment ability of the farm only.

The debt to asset ratio is a good measure of the current relationship between assets and liabilities, but not the business' ability to meet cash flow obligations. Even with a debt to asset ratio of less than 40 percent, 15.7 percent of the farms had a cash flow coverage ratio less than 1.0.

**Table 18.**

#### DEBT TO ASSET RATIO VS. CASH FLOW COVERAGE 204 New York Dairy Farms, 2010

Debt/Asset Ratio	Cash Flow Coverage Ratio (Farm & Nonfarm)			
	<.5	.5 to .99	1 to 1.49	>=1.5
	percent of farms			
<40%	4.9	10.8	12.2	29.9
40 to 60%	7.8	11.3	8.8	5.9
60% & over	2.9	2.0	2.5	1.0

### Cropping Program Analysis

The cropping program is an important part of the dairy farm business that is sometimes overlooked and often neglected. A complete evaluation of available land resources, how they are used, and what it costs to produce the crops, are required to evaluate alternative cropping and feed purchase choices.

**Table 19.**

#### **LAND RESOURCES AND CROP PRODUCTION 204 New York Dairy Farms, 2010**

Item	Average 204 Farms			Average Top 10% Farms <sup>23</sup>		
	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
<u>Land</u>						
Tillable	494	493	987	787	676	1,463
Nontillable pasture	39	8	47	12	3	15
Other nontillable	<u>149</u>	<u>5</u>	<u>154</u>	<u>148</u>	<u>0</u>	<u>148</u>
Total	682	506	1,188	947	679	1,626
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres</u>	<u>Prod/Acre</u>	<u>Farms</u>	<u>Acres</u>	<u>Prod/Acre</u>
Hay crop	197	485	3.5 tn DM	20	673	3.5 tn DM
Corn silage	182	381	19.6 tn	19	552	20.8 tn
			6.8 tn DM			7.2 tn DM
Other forage	23	100	2.2 tn DM	0	0	0.0 tn DM
Total forage	198	845	4.8 tn DM	20	1,226	5.1 tn DM
Corn grain	109	191	143 bu	14	203	147 bu
Oats	19	40	58 bu	0	0	0.0 bu
Wheat	18	133	63 bu	5	73	67 bu
Other crops	61	104		8	95	
Tillable pasture	33	84		2	340	
Idle	34	57		3	60	

<sup>23</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Crop acres and yields are the average for the farms reporting each crop. All but seven of the 204 farms produced hay or hay crop silage in 2010. Eighty-nine percent produced corn silage, 53 percent grew and harvested corn grain, and nine percent grew oats for grain. Although 33 farms used tillable pasture in 2010, only 27 of the 204 farms reported using rotational grazing.

Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent.

Crop acres represent planted acres, therefore, any unharvested acres are reflected in lower yields per acre.

The following measures of crop management indicate how effectively the land resource is being used and how well total forage requirements are being met. These measures are the averages of farms that grow forages.

**Table 20.**

#### **CROP MANAGEMENT FACTORS 204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>24</sup>
Total tillable acres per cow	2.05	1.80
Total forage acres per cow	1.71	1.51
Harvested forage dry matter, tons per cow	8.25	7.64

<sup>24</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs.

**Table 21.**

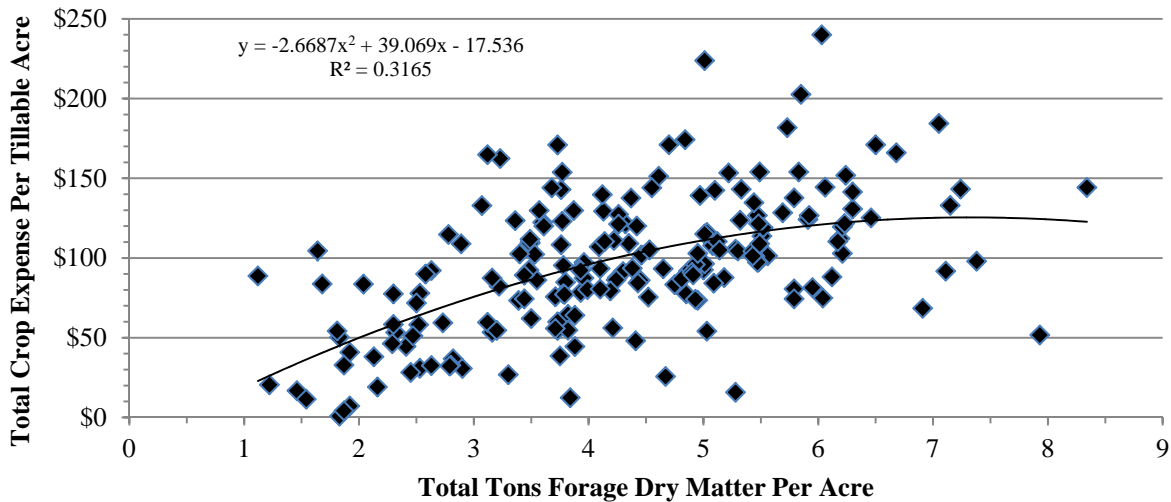
**CROP RELATED ACCRUAL EXPENSES**  
**198 New York Dairy Farms That Grow Forages, 2010**

Item	Average 198 Farms		Average Top 10% Farms <sup>26</sup>	
	Total Per Tillable Acre		Total Per Tillable Acre	
Number of farm reporting	198		20	
Average number of acres	1,014		1,463	
Fertilizer and lime expense	\$43.36		\$41.32	
Seeds & plants	35.80		47.31	
Spray and other crop expense	19.05		22.89	
Total	\$98.21		\$111.52	

<sup>25</sup>Average of farms with highest rates of return to all capital (without appreciation).

**Chart 5.**

**CROP EXPENSE PER ACRE BY TOTAL FORAGE PRODUCTION PER ACRE**  
**198 New York Dairy Farms That Grow Forages, 2010**



Most machinery costs are associated with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Machinery costs have not been allocated to individual crops, but they are calculated per total tillable acre.

**Table 22.**

**ACCRUAL MACHINERY EXPENSES**  
**198 New York Dairy Farms That Grow Forages, 2010**

Machinery Expense Item	Average 198 Farms		Average Top 10% Farms <sup>26</sup>	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 79,080	\$77.98	\$113,943	\$ 77.88
Machinery repairs & vehicle expense	97,191	95.84	142,408	97.34
Machine hire, rent & lease	44,200	43.59	78,084	53.37
Interest (5%)	38,453	37.92	51,924	35.49
Depreciation	95,760	94.43	139,148	95.11
Total	\$354,684	\$349.76	\$525,508	\$359.19

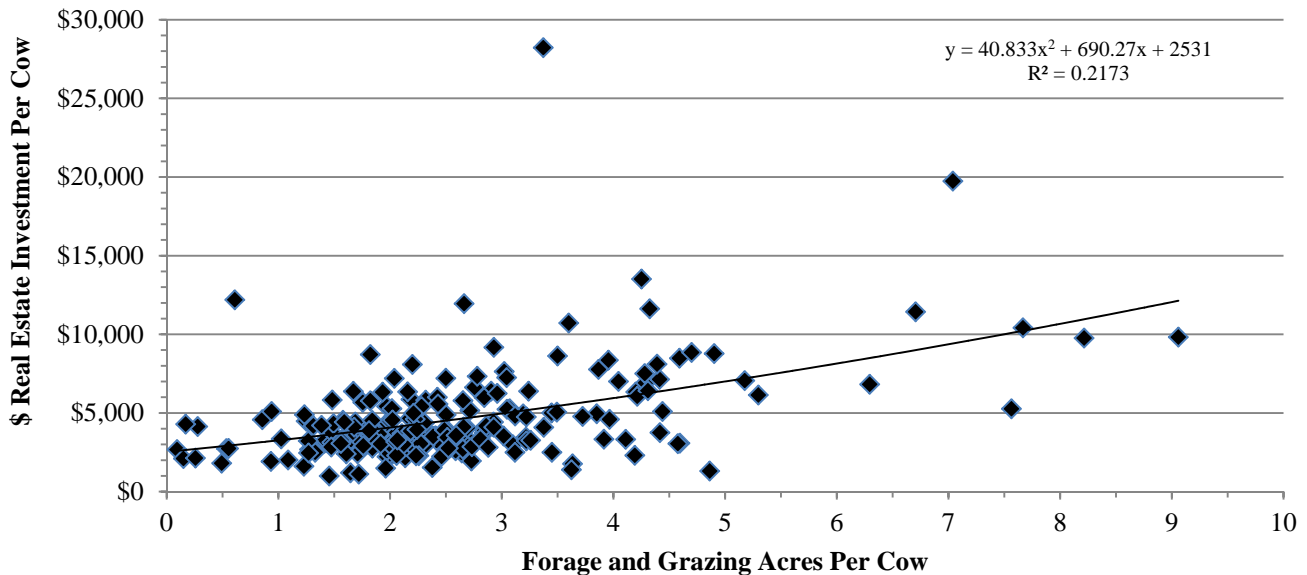
<sup>26</sup>Average of 20 farms with highest rates of return to all capital (without appreciation) that grow forages.

The trend lines on charts on the previous and following pages were completed using regression techniques. The predictive formulas and  $R^2$  are presented for each relationship. An  $R^2$  of 1.00 indicates a perfect relationship between the data and the trend line. An  $R^2$  of .30 for example, is interpreted as the trend line explaining 30% of the variability in the relationship. The higher the  $R^2$ , the better the trend line fits the data. With a low  $R^2$ , other factors, not measured, are important in explaining the relationship. The very low  $R^2$  value for Chart 12 indicates little statistical relationship in the 2010 data.

The charts below show the relationship between the stocking rate (forage and grazing acres per cow) and labor and management income per operator per cow and real estate investment per cow. Stocking rate is total tillable acres plus nontillable pasture acres less corn grain acres, all divided by the average number of cows.

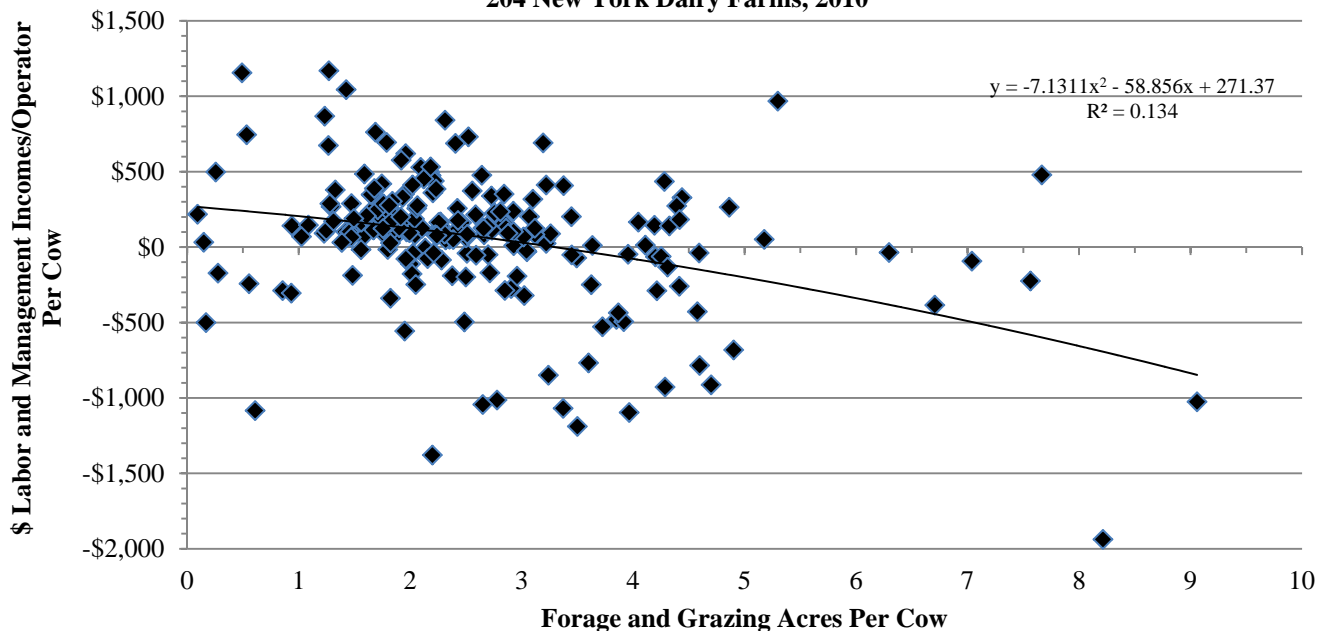
**Chart 6.**

**REAL ESTATE INVESTMENT PER COW BY FORAGE AND GRAZING ACRES PER COW**  
**204 New York Dairy Farms, 2010**



**Chart 7.**

**LABOR AND MANAGEMENT INCOMES/OPERATOR/COW BY FORAGE AND GRAZING ACRES/COW**  
**204 New York Dairy Farms, 2010**



### Dairy Program Analysis

An analysis of the dairy enterprise can be the most important step in evaluating the strengths and weaknesses of the dairy farm business. Changes in dairy herd size and market values are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. This change in inventory is included as an accrual farm receipt when calculating profitability.

**Table 23.**

#### **DAIRY HERD INVENTORY 204 New York Dairy Farms, 2010**

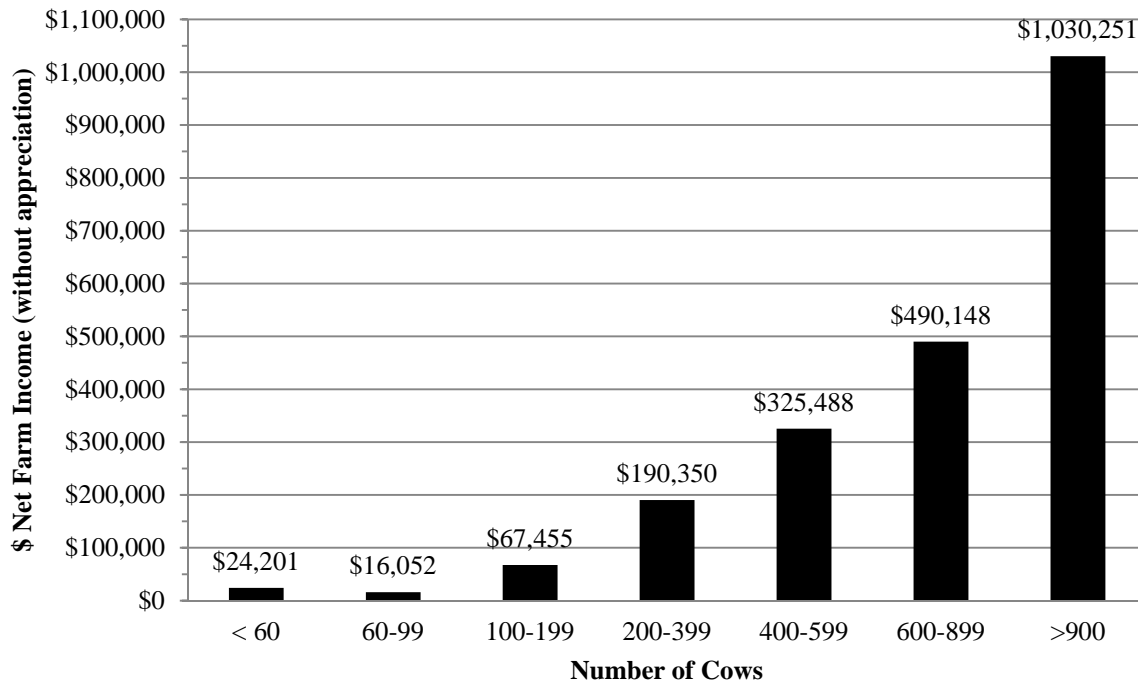
Item	Dairy Cows		Heifers				Calves	
	No.	Value	Bred		Open		No.	Value
	No.	Value	No.	Value	No.	Value	No.	Value
Beg. year (owned)	471	\$655,776	148	\$204,479	138	\$117,337	118	\$57,554
+ Change w/o apprec.		28,315		6,863		6,728		2,172
+ Appreciation		<u>160</u>		<u>-589</u>		<u>423</u>		<u>-1,395</u>
End year (owned)	492	\$684,250	153	\$210,753	145	\$124,487	122	\$58,331
End including leased	497							
Average number	489		415	(all age groups)				
<u>Average Top 10% Farms:<sup>27</sup></u>								
Beg. year (owned)	759	\$1,003,357	234	\$314,296	188	\$159,219	251	\$128,084
+ Change w/o apprec.		76,473		24,068		27,121		-76
+ Appreciation		<u>10,569</u>		<u>-6,916</u>		<u>-1,429</u>		<u>-8,368</u>
End year (owned)	817	\$1,090,399	250	\$331,448	221	\$184,912	245	\$119,640
End including leased	837							
Average number	813		714	(all age groups)				

<sup>27</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Historically, there has been a strong relationship between farm size and net farm income on well-managed dairy farms. In 2010, there was a consistent increase in net farm incomes as herd size increased (Chart 8). For more information on herd size comparisons, see pages 48-57.

**Chart 8.**

#### **NET FARM INCOME (WITHOUT APPRECIATION) BY HERD SIZE 204 New York Dairy Farms, 2010**





Total milk sold and milk sold per cow are extremely valuable measures of productivity on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Milk components per cow in the table below are an average of 140 farms that provided the data.

**Table 24.**

**MILK PRODUCTION  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>28</sup>
Total milk sold, pounds	11,978,152	20,682,529
Milk sold per cow, pounds	24,508	25,454
	<u>Average 140 Farms</u>	<u>Average 20 Farms</u>
Butterfat per cow, pounds	907	924
Protein per cow, pounds	763	775
Total butterfat and protein per cow, pounds	1,670	1,699
Other solids per cow, pounds	1,447	1,459
Total components per cow, pounds	3,117	3,158

<sup>28</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Farms with higher rates of production tend to have higher net farm incomes. This is due to more cows per farm, not necessarily higher net farm income per cow. In 2010, farms with higher milk production per cow and more cows did have higher labor and management incomes per operator.

**Table 25.**

**MILK SOLD PER COW AND FARM INCOME MEASURES  
204 New York Dairy Farms, 2010**

Pounds of Milk Sold Per Cow	Number of Farms	Average Number of Cows	Net Farm Income without Appreciation	Net Farm Income Per Cow	Labor & Management Income/Operator
Under 16,000	18	162	\$72,970	\$451	\$14,811
16,000 to 17,999	20	148	41,659	282	-3,901
18,000 to 19,999	15	117	54,870	467	5,017
20,000 to 21,999	30	219	137,234	626	17,213
22,000 to 23,999	36	503	225,914	449	51,518
24,000 to 25,999	40	716	448,328	626	131,726
26,000 & over	45	861	743,325	863	250,338

The relationship between milk output per cow and net farm income on all dairy farms is shown in Table 27 above and is diagrammed in Charts 9 and 10 on page 26. Each spot on each scatter diagram represents one of the 204 Farms.

Historically, net farm income per cow has increased as pounds of milk sold per cow increased. This relationship held true in 2010 (see Table 27 and Charts 9 and 10). As pounds of milk sold per cow increased, total net farm income increased as did net farm income per cow, with some fluctuation.

Chart 9.

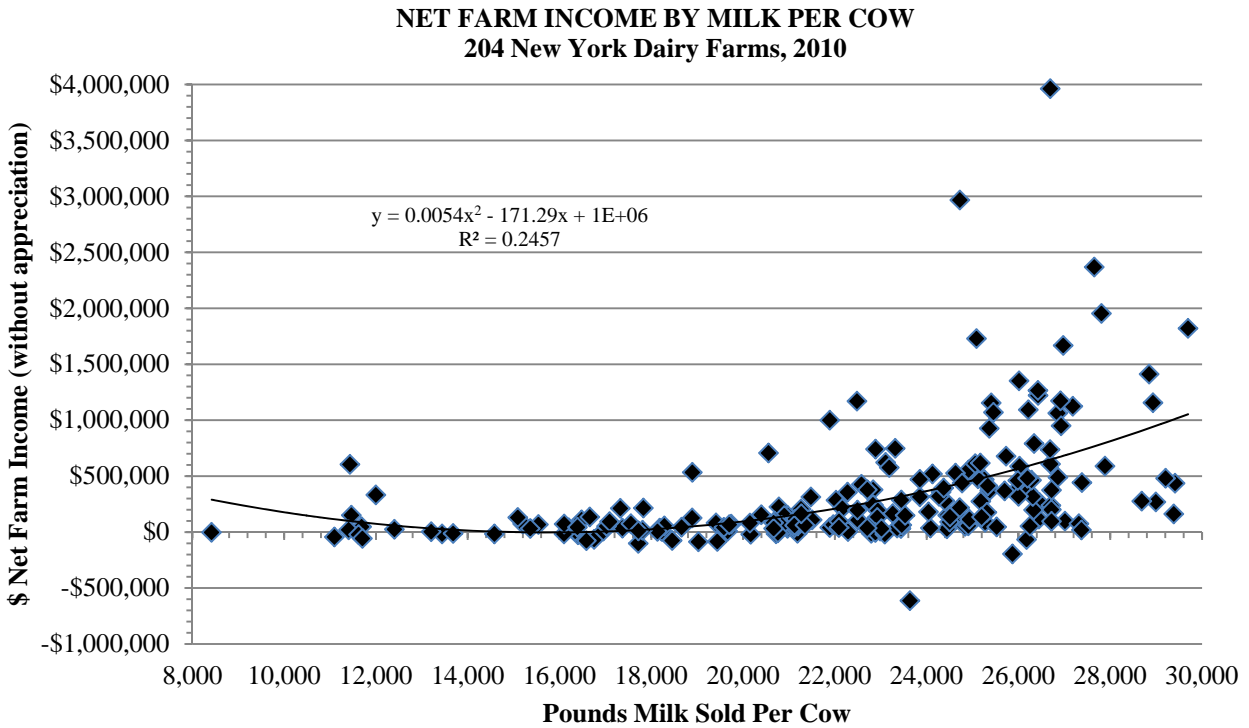
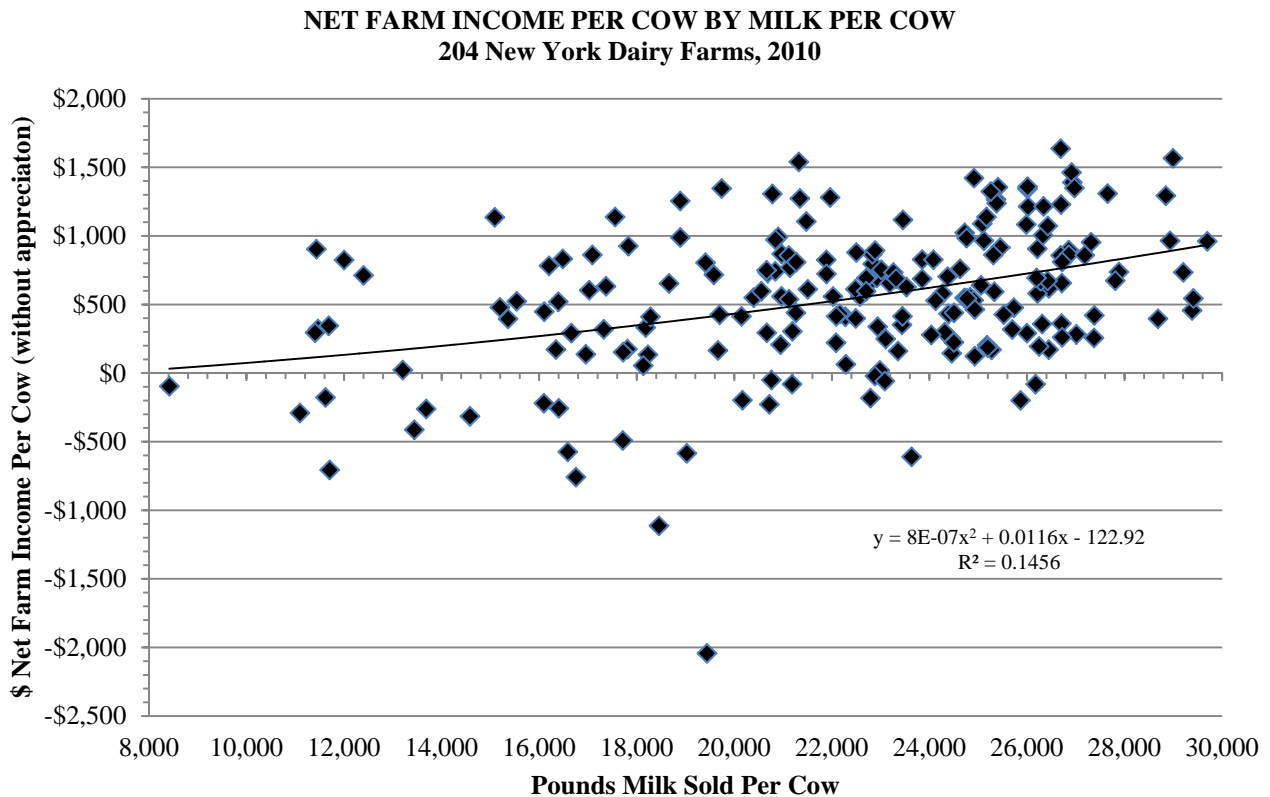


Chart 10.



Charts 11 and 12 show relationships between cull rates and milk production and net farm income per cow. For the 2010 year, supplementary information concerning dairy replacements was collected from 29 participating farms. The culling chart (Table 26) reports the decile range of reported factors for the different information that was collected. The average culling rate was 34 percent, sell rate was 28 percent, and death rate was 7 percent. The average number of cows sold for beef equaled 135, six cows were sold for dairy, and 32 cows died. Please refer to the glossary for definitions of the different terms and how the measures were calculated.

Chart 11.

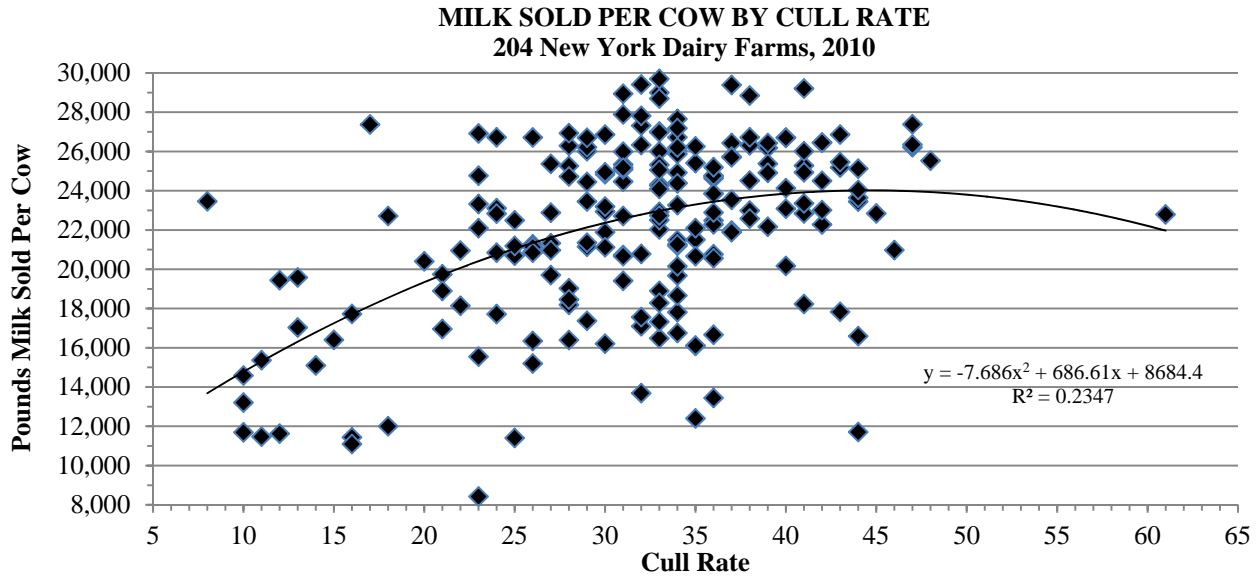


Chart 12.

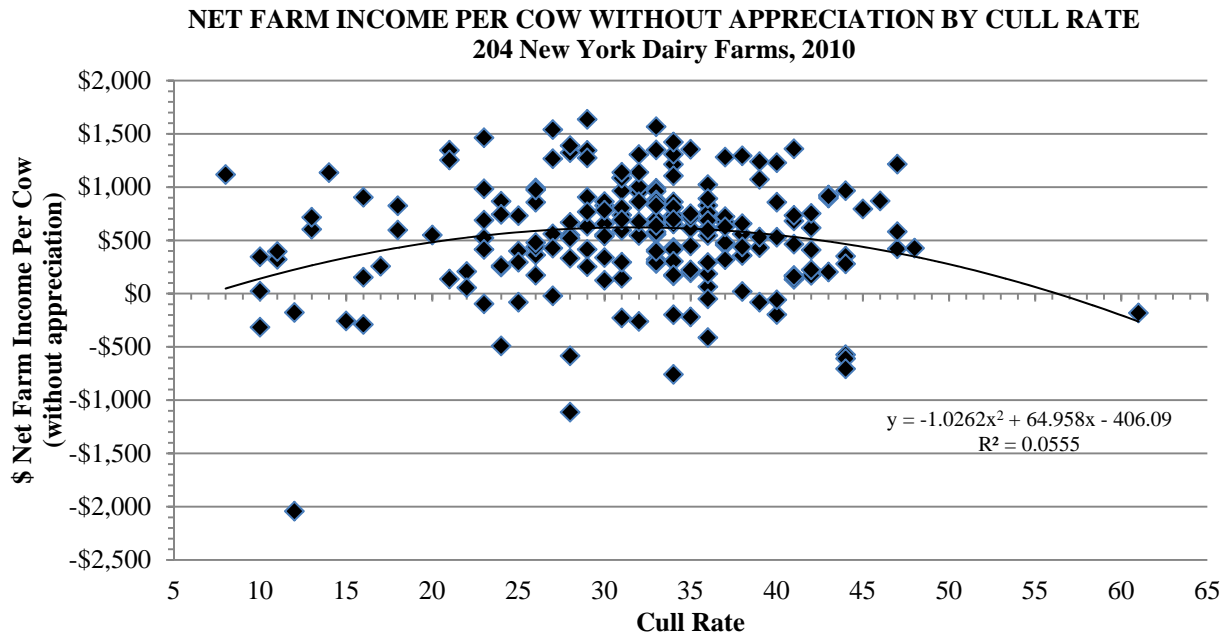


Table 26.

**CULLING RATE AND DAIRY REPLACEMENT INFORMATION**  
New York Dairy Farms, 2010

Decile	Sell Rate	Death Rate	Cull Rate	Value of Cows Sold	Value of Animals Purchased	Percent of Replacements Purchased	Percent of Heifers Custom Raised
-----204 Farms <sup>29</sup> -----				\$/head (37 Farms)		----- 29 Farms <sup>29</sup> -----	
1	9%	1%	14%	\$264	\$ 62	0%	0%
2	18	2	24	449	852	0	0
3	21	3	28	518	1,089	0	0
4	23	4	30	564	1,319	0	0
5	26	5	32	612	1,469	0	0
6	28	6	34	651	1,570	0	0
7	30	7	35	698	1,694	0	0
8	31	8	37	762	1,759	0.33	8
9	34	10	40	922	2,114	3.13	15
10	39	14	45	1,230	5,392	5.17	48

<sup>29</sup>204 DFBS farms provided culling information. Twenty-nine farms provided supplemental information on heifer acquisitions.

**Cost of Producing Milk**

The cost of producing milk has been compiled below using the whole farm method. The following steps are used in the calculations.

1. The cost of expansion livestock is added to total accrual operating expenses to offset any related inventory increase included in accrual receipts.
2. Accrual milk sales are deducted from total accrual receipts to get total accrual nonmilk receipts, which are used to represent total nonmilk operating costs. This assumes that costs equal revenues for nonmilk costs.
3. Total accrual nonmilk receipts are subtracted from total accrual operating expenses including expansion livestock to calculate the operating cost of producing milk.
4. Machinery depreciation and building depreciation are added to operating costs to determine the purchased inputs cost of producing milk.
5. The opportunity cost of equity capital, operator's labor and operator's management and the value of unpaid family labor are added to all other costs to obtain the total cost of producing milk. This cost includes all the operating, depreciation, and imputed costs of producing milk.

**Table 27.**

**COST OF PRODUCING MILK, WHOLE FARM METHOD  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>30</sup>
Total Accrual Operating Expenses	\$1,921,213	\$3,012,525
Expansion Livestock, Accrual	<u>+10,033</u>	<u>+ 9,352</u>
1. Total Accrual Operating Expenses, Including Expansion Livestock	\$1,931,246	\$3,021,877
Total Accrual Receipts	\$2,416,422	\$4,268,147
Milk Sales, Accrual	<u>-2,133,253</u>	<u>- 3,731,227</u>
2. Total Accrual Nonmilk Receipts	<u>- \$283,169</u>	<u>-\$ 536,920</u>
3. Operating Cost of Producing Milk	\$1,648,077	\$2,484,957
Machinery Depreciation	+ 94,106	+ 139,148
Building Depreciation	+ 63,828	+ 90,459
Extraordinary Expense	<u>+ 760</u>	<u>+ 0</u>
4. Purchased Inputs Cost of Producing Milk	\$1,806,771	\$2,714,564
Family Labor Unpaid (\$2,500/month)	+ 4,237	+ 888
Real Interest on Equity Capital	+ 137,544	+ 245,418
Value of Operator's Labor & Management	<u>+ 95,356</u>	<u>+ 119,488</u>
5. Total Costs of Producing Milk	\$2,043,908	\$3,080,358
6. Costs Per Cwt.:		
Cwt. Milk Sold	119,782	206,825
Operating Cost Per Cwt.	\$13.76	\$12.01
Purchased Inputs Cost Per Cwt.	\$15.08	\$13.12
Total Cost Per Cwt.	\$17.06	\$14.89

<sup>30</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Costs of producing milk per hundredweight are presented for eight expenditure categories in Table 28. The whole farm method assumption that accrual nonmilk receipts represent nonmilk operating costs is used in computing net costs. A \$43,732 average increase in crop inventories per farm, (\$0.37 per hundredweight of milk), is included in crop sales on the 204 farms. The top 10 percent farms had a \$102,716 average increase in crop inventories per farm (\$0.50 per hundredweight of milk).

**Table 28.**

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT  
BASED ON WHOLE FARM DATA  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms	Average Top 10% Farms <sup>32</sup>
Dairy grain and concentrate	\$5.07	\$4.60
Dairy roughage	0.32	0.30
Nondairy feed	0.01	0.00
Professional nutritional services	<u>0.01</u>	<u>0.01</u>
Total feed expense	\$5.41	\$4.91
Crop expense	0.95	0.78
- Crop sales and government receipts <sup>31</sup>	<u>0.70</u>	<u>0.76</u>
Net Feed and Crop Expense	\$5.66	\$4.93
Hired labor	2.61	2.63
Operator's and family labor	<u>0.83</u>	<u>0.58</u>
Total Labor Expense	\$3.44	\$3.21
Machine repairs, fuel and hire	1.81	1.62
Machinery depreciation	0.79	0.67
- Gas tax refunds and custom work	<u>0.04</u>	<u>0.01</u>
Net Machinery Expense	\$2.56	\$2.28
Replacement and expansion cattle purchases	0.14	0.05
- Sales and inventory growth	<u>1.33</u>	<u>1.53</u>
Net Cattle Purchases	\$-1.19	\$-1.48
Milk marketing costs	0.89	0.84
All other livestock expense excluding purchases	<u>2.29</u>	<u>2.06</u>
Net Livestock Expense	\$3.18	\$2.90
Real estate repairs, rent and taxes	0.72	0.67
Building depreciation	<u>0.53</u>	<u>0.44</u>
Total Real Estate Expense	\$1.25	\$1.11
Interest paid	0.53	0.37
Interest on equity	<u>1.15</u>	<u>1.19</u>
Total Interest Expense	\$1.68	\$1.56
Other operating and miscellaneous expenses	0.78	0.68
- Miscellaneous income	<u>0.29</u>	<u>0.30</u>
Net Miscellaneous Expenses	<u>\$ 0.49</u>	<u>\$0.38</u>
Total Cost of Producing Milk	\$17.06	\$14.89
Purchased Inputs Cost of Producing Milk	\$15.08	\$13.12
Total Operating Cost of Producing Milk	\$13.76	\$12.01

<sup>31</sup>Non-crop related government payments may bias the results.

<sup>32</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Costs of producing milk per hundredweight are presented in the table below for 185 farms that participated both in 2009 and 2010. Costs of production decreased in nearly all expense categories except net machinery expense, net livestock expense, real estate expense and net miscellaneous expense when 2010 data were compared to 2009.

**Table 29.**

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT  
BASED ON WHOLE FARM DATA  
Same 185 New York Dairy Farms, 2009 & 2010**

Item	2009	2010	Percent Change
Dairy grain and concentrate	\$5.17	\$5.07	-1.9%
Dairy roughage	0.26	0.31	19.2%
Nondairy feed	0.00	0.01	
Professional nutritional services	<u>0.00</u>	<u>0.01</u>	
Total feed expense	\$5.43	\$5.40	-0.6%
Crop expense	0.97	0.93	
- Crop sales and government receipts <sup>33</sup>	<u>0.76</u>	<u>0.72</u>	
Net Feed and Crop Expense	\$5.64	\$5.61	-0.5%
Hired labor	2.66	2.60	
Operator's and family labor	<u>0.82</u>	<u>0.81</u>	
Total Labor Expense	\$3.48	\$3.41	-2.0%
Machine repairs, fuel and hire	1.61	1.79	
Machinery depreciation	0.79	0.79	
- Gas tax refunds and custom work	<u>0.04</u>	<u>0.05</u>	
Net Machinery Expense	\$2.36	\$2.53	7.2%
Replacement and expansion cattle purchases	0.19	0.15	
- Sales and inventory growth	<u>1.27</u>	<u>1.31</u>	
Net Cattle Purchases	-\$1.08	-\$1.16	-7.4%
Milk marketing costs	0.87	0.89	
All other livestock expense excluding purchases	<u>2.25</u>	<u>2.28</u>	
Net Livestock Expense	\$3.12	\$3.17	1.6%
Real estate repairs, rent and taxes	0.69	0.76	
Building depreciation	<u>0.52</u>	<u>0.53</u>	
Total Real Estate Expense	\$1.21	\$1.29	6.6%
Interest paid	0.50	0.52	
Interest on equity	<u>1.24</u>	<u>1.13</u>	
Total Interest Expense	\$1.74	\$1.65	-5.2%
Other operating and miscellaneous expenses	0.74	0.79	
- Miscellaneous income	<u>0.28</u>	<u>0.29</u>	
Net Miscellaneous Expenses	<u>\$0.46</u>	<u>\$0.50</u>	8.7%
Total Cost of Producing Milk	\$16.93	\$16.99	0.4%
Purchased Inputs Cost	\$14.87	\$15.04	1.1%
Total Operating Cost	\$13.56	\$13.72	1.2%
Average Price Received for Milk	\$13.86	\$17.80	28.4%

<sup>33</sup>Non-crop related government payments may bias the results.

The three measures of the accrual cost of producing milk calculated on a per cow and per hundredweight basis are compared with accrual receipts from milk sales in Table 30.

**Table 30.**

**COST OF PRODUCING MILK, ACCRUAL RECEIPTS FROM DAIRY, AND PROFITABILITY  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms			Average Top 10% Farms <sup>34</sup>		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating Cost	\$1,648,077	\$3,372	\$13.76	\$2,484,957	\$3,058	\$12.01
Purchased Inputs Cost	1,806,771	3,697	15.08	2,714,564	3,341	13.12
Total Cost	2,043,908	4,182	17.06	3,080,358	3,791	14.89
<u>Accrual Receipts from Milk</u>						
Net Milk Receipts	\$2,133,254	\$4,365	\$17.81	\$3,731,227	\$4,592	\$18.04
	2,026,192	4,146	16.92	3,556,703	4,377	17.20
<u>Profitability</u>						
Net Farm Income without Appreciation	\$326,482	\$668	\$2.73	\$1,016,663	\$1,251	\$4.92
Net Farm Income with Appreciation	\$413,954	\$847	\$3.46	\$1,109,390	\$1,365	\$5.36

<sup>34</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

The operating cost of producing milk on all 204 dairy farms averaged \$13.76 per hundredweight, leaving \$4.05 to cover depreciation, unpaid labor and operator resources.

The total cost of producing milk on the 204 dairy farms averaged \$17.06 per hundredweight, \$0.75 less than the average price received for milk sold from these farms during 2010. The imputed costs or charge for the operator's labor, management and equity capital averaged \$1.95 per hundredweight in 2010; however, the farm operator received \$2.70 per hundredweight for these inputs. The 20 most profitable farms held their operating costs to \$12.01 per hundredweight and their total cost of producing milk averaged \$14.89 per hundredweight. This left a profit of \$3.15 per hundredweight of milk sold.

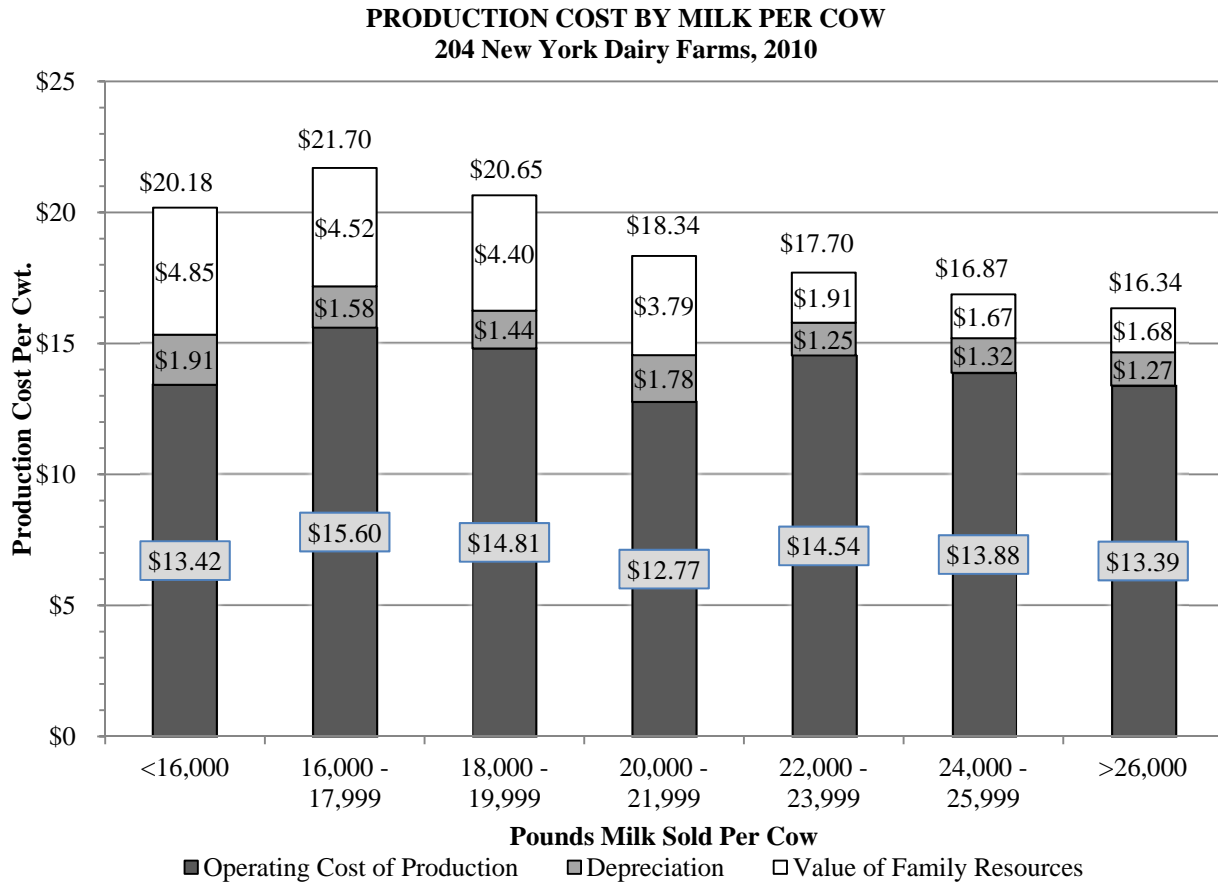
The strong relationship between milk output per cow and the total cost of producing milk is shown in Table 31 and Chart 13 on page 32. Farms selling less than 20,000 pounds of milk per cow had average total costs of production of \$20.84 per hundredweight while those selling 20,000 pounds and over averaged \$17.31 for a difference of \$3.53 per hundredweight.

**Table 31.**

**FARM COST OF PRODUCING MILK BY MILK SOLD PER COW  
204 New York Dairy Farms, 2010**

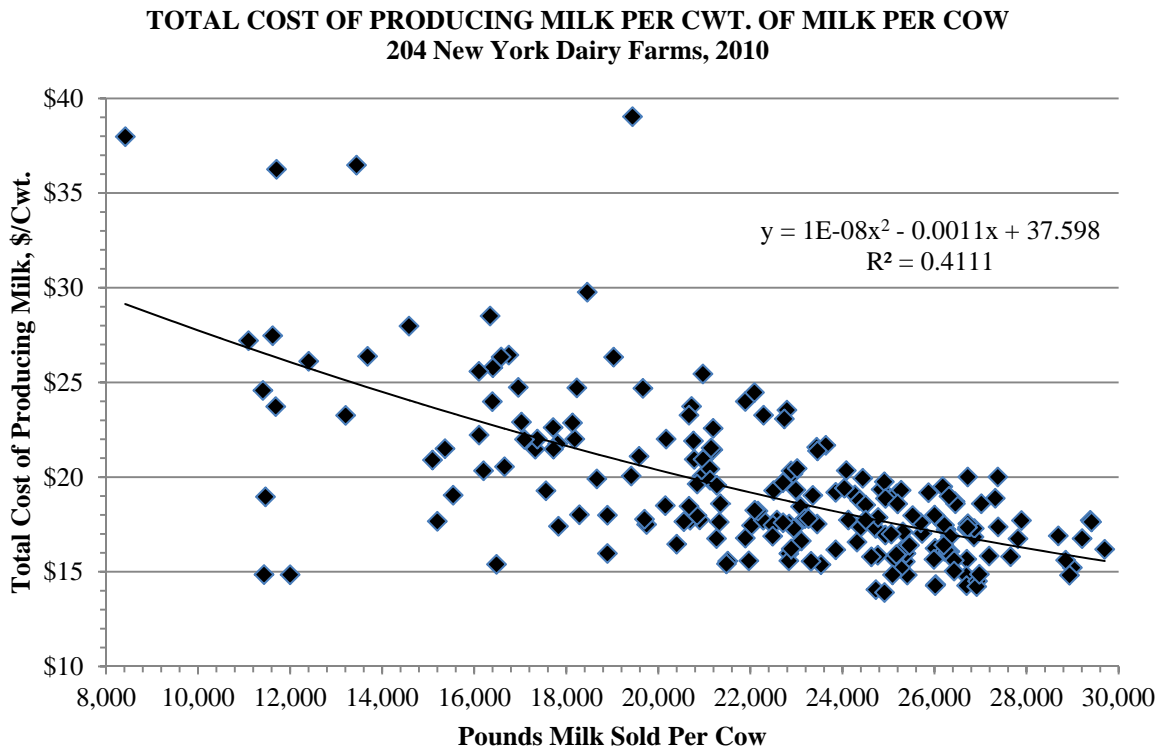
Pounds Milk Sold Per Cow	Costs per Hundredweight					Accrual Receipts From Milk Per Cwt.	Return Per Cwt. To Operator's Labor, Mgmt. & Capital
	Operating Costs		Costs of Producing Milk				
	Hired Labor	Dairy Grain & Concentrate	Total Operating	Purchased Inputs	Total		
Under 16,000	\$2.18	\$4.82	\$13.42	\$15.33	\$20.18	\$18.98	\$3.27
16,000-17,999	2.22	5.61	15.60	17.18	21.70	18.84	1.33
18,000-19,999	1.62	5.20	14.81	16.25	20.65	18.72	1.93
20,000-21,999	2.07	4.92	12.77	14.55	18.34	17.52	2.84
22,000-23,999	2.55	5.17	14.54	15.79	17.70	17.74	1.94
24,000-25,999	2.71	5.16	13.88	15.20	16.87	17.70	2.49
26,000 & over	2.70	4.97	13.39	14.66	16.34	17.83	3.16

Chart 13.



The relationship between total cost of producing milk and milk sold per cow is diagrammed in Chart 14. It shows that as milk sold per cow increases, on the average, total cost of production generally decreases.

Chart 14.





Data in Table 32 and Chart 15 show that the average total cost of production generally declines as herd size increases. This is attributable to spreading fixed costs over more units of output.

Total operating costs are lowest at the under 60 herd size group and generally increase as herd size increases. Hired labor cost increases with herd size, while purchased dairy grain and concentrate are not related to herd size.

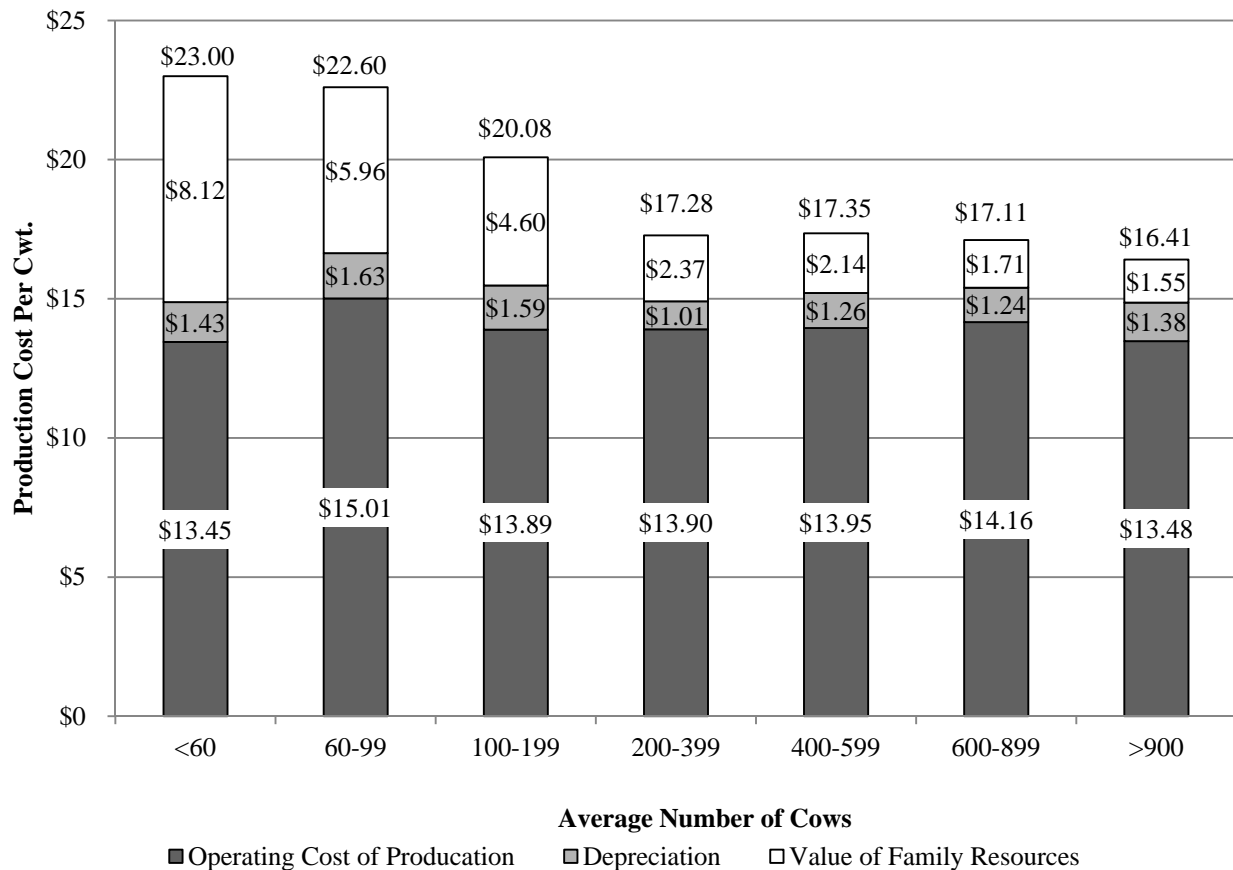
**Table 32.**

**FARM COST OF PRODUCING MILK BY HERD SIZE  
204 New York Dairy Farms, 2010**

Number of Cows	Costs per Hundredweight					Accrual Receipts From Milk	Return Per Cwt. To Operator's Labor, Mgmt. & Capital
	Operating Costs		Costs of Producing Milk				
	Hired Labor	Dairy Grain & Concentrate	Total Operating	Purchased Inputs	Total		
Under 60	\$0.51	\$4.91	\$13.45	\$14.88	\$23.00	\$17.54	\$1.46
60 to 99	1.40	5.95	15.01	16.64	22.60	17.74	0.55
100 to 199	1.87	5.08	13.89	15.48	20.08	17.91	2.20
200 to 399	2.33	5.19	13.90	14.91	17.28	17.65	2.72
400 to 599	2.54	5.07	13.95	15.21	17.35	18.11	2.88
600 to 899	2.71	5.03	14.16	15.40	17.11	18.06	2.65
900 and over	2.76	5.04	13.48	14.86	16.41	17.65	2.79

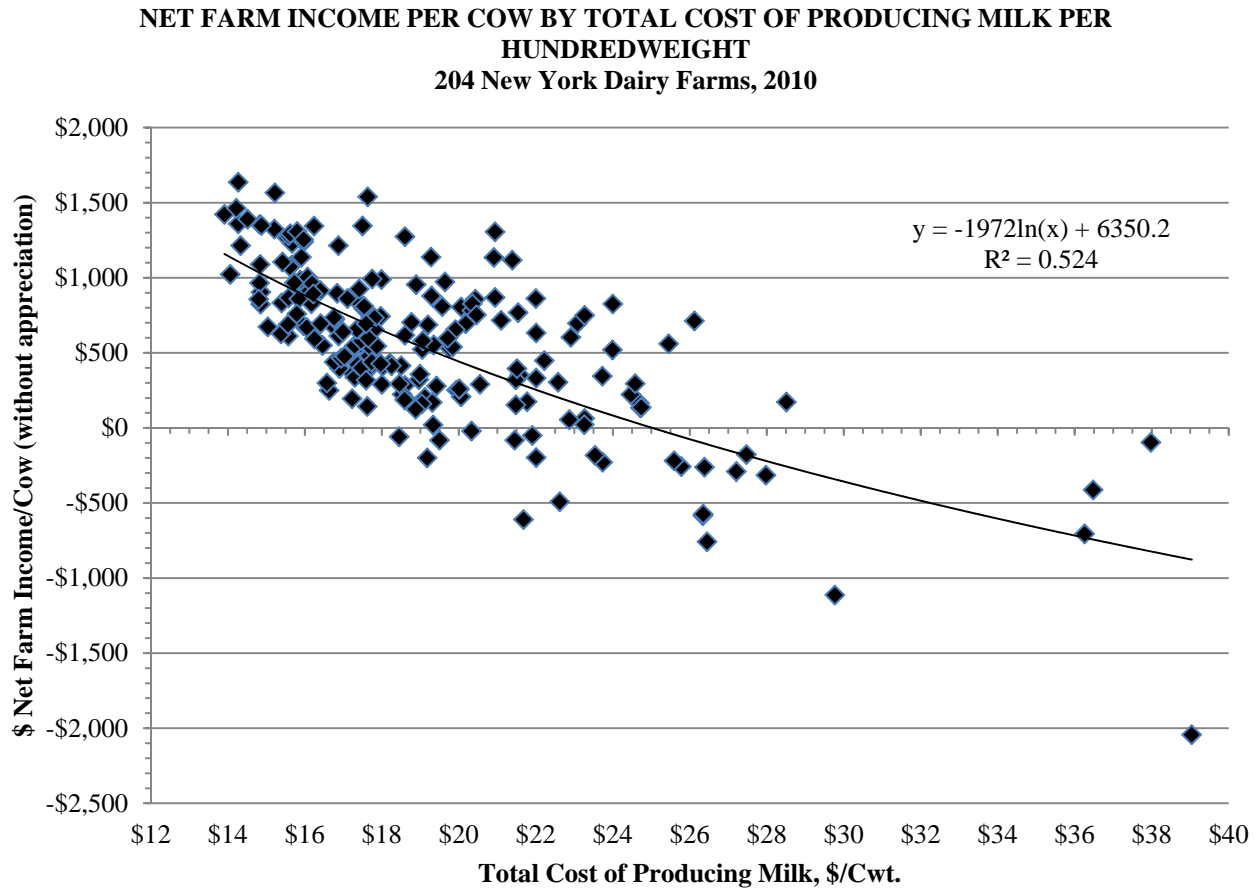
**Chart 15.**

**PRODUCTION COST BY HERD SIZE  
204 New York Dairy Farms, 2010**



The importance of cost control and its impact on farm profitability are illustrated in Chart 16. As the total cost of producing milk per hundredweight increased, net farm income per cow fell. All farms had a positive net farm income per cow until the total cost of producing milk exceeded \$18 per hundredweight. The majority of the farms experienced positive net farm incomes per cow in 2010.

Chart 16.



### **Cost of Producing Milk (continued)**

A ten-year comparison of the average costs and returns of producing milk per hundredweight is presented in Table 33 on page 36. Average individual operating and overhead expenses per hundredweight of milk sold are reported on all specialized dairy farms included in the New York State Summary from 2001 through 2010. In 2010, the average operating cost of producing milk increased 0.4 percent after decreasing 9.9 percent from 2008 to 2009. The average return per hundredweight to operator labor, management, and capital was \$3.85 higher in 2010, 332 percent greater than 2009. In only four years during the last ten years has milk price exceeded the total cost of producing a hundredweight of milk. The years were 2001, 2004, 2007, and 2010.

Hired labor expense per hundredweight has increased consistently from 2000 to 2004, remained constant in 2005, decreased three percent in 2006, increased five percent in 2007, increased three percent in 2008, decreased three percent in 2009, and decreased another three percent in 2010. Hired labor expense was \$2.41 in 2001 and has risen to \$2.61 in 2010. Thus, even as pounds of milk sold per worker have increased from 897,167 in 2001 to 1,095,897 in 2010, labor expense per worker has also increased. Some of this effect is due to increasing farm size where a larger portion of the labor force is comprised of hired workers. Another effect is an increase in hired labor cost per worker as shown by a 13 percent increase in hired labor expense per hired worker equivalent from 2001 to 2010.

Purchased feed expense per hundredweight of milk can fluctuate greatly, as much as \$2.07 per hundredweight. At \$4.10 in 2002, it was at its lowest in the past ten years. In 2008, purchased feed expense was at its highest in the past ten years at \$6.17, due mostly to demand for corn for ethanol and the U.S. dollar foreign exchange rate. Purchased feed expense decreased one percent in 2010 to \$5.41 per hundredweight.

Interest paid on debt per hundredweight of milk sold has fluctuated over this period. In 2001, interest expense was \$0.82 per hundredweight. In 2009, interest expense was at a ten-year low of \$0.51 per hundredweight. In 2010, interest expense increased slightly to \$0.53 per hundredweight. Property taxes per hundredweight of milk were fairly constant during this ten-year period. Property taxes were \$0.21 per hundredweight in 2001 and \$0.22 in 2010. This is due to productivity increases and more of the land resources being rented, rather than owned, and fewer acres per cow.

A ten-year comparison of selected average business factors for all specialized DFBS farms is presented in Table 34 on page 37. The reader is reminded that the same farms are not in the survey each year. Average cow numbers are up 77 percent, tillable acres have increased 60 percent, and milk sold per farm has jumped 99 percent since 2001. Capital investment per cow has increased 35 percent over the last ten years. Labor and management income per operator increased 169 percent in 2010 compared to 2009, farm net worth increased 14 percent, and percent equity increased 5 percent in 2010 compared to 2009.

Hay crop yields were 2.8 tons dry matter per acre in 2001 and 3.5 tons dry matter per acre in 2010. Corn silage yields, as fed, have varied more widely and were at a ten-year high of 19.9 tons per acre in 2008, decreased to 18.7 tons per acre in 2009, and increased to 19.6 tons per acre in 2010. As yields increased from 2009 to 2010, fertilizer and lime expense increased \$1 per tillable acre, from \$42 to \$43 per acre. Pounds of milk sold per cow increased by 12.6 percent, from 21,762 pounds in 2001 to 24,508 pounds in 2010.

Average number of workers per farm increased by 4.21 and operators/managers per farm were stable. Cows per worker equivalent increased from 41 in 2001 to 45 in 2010, but labor cost per cow increased from \$706 to \$771 over the same time period.

The asset turnover ratio ranged from a low of 0.44 in 2009 to a high of 0.67 in 2007. Total accrual receipts as a proportion of total farm assets equals asset turnover ratio. Percent equity was 60 percent in 2001, was relatively constant over the next five years, increased to 68 percent in 2007 and 2008, decreased to 62 percent in 2009, and increased to 65 percent in 2010.

Table 33.

**TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT**  
**New York Dairy Farms, 2001 to 2010**

Item	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<u>Operating Expenses</u>										
Hired labor	\$2.41	\$2.44	\$2.51	\$2.67	\$2.66	\$2.58	\$2.70	\$2.79	\$2.70	\$2.61
Purchased feed	4.25	4.10	4.29	4.88	4.37	4.30	5.21	6.17	5.45	5.41
Machinery repair, vehicle expense & rent	1.21	1.01	.91	1.09	1.07	1.04	1.27	1.24	1.07	1.16
Fuel, oil & grease	.32	.28	.33	.41	.53	.58	.67	.91	.57	.65
Replacement livestock	.20	.16	.15	.16	.11	.07	.07	.08	.06	.06
Breeding fees	.19	.21	.19	.21	.22	.23	.24	.26	.21	.21
Veterinary & medicine	.54	.56	.56	.59	.62	.65	.65	.68	.63	.63
Milk marketing	.63	.65	.69	.72	.76	.80	.80	.85	.88	.89
Other dairy expenses	1.26	1.25	1.30	1.27	1.32	1.29	1.41	1.52	1.44	1.45
Fertilizer & lime	.33	.27	.26	.30	.34	.31	.40	.47	.41	.37
Seeds & plants	.20	.20	.20	.24	.22	.23	.28	.33	.35	.36
Spray & other crop expense	.25	.22	.19	.20	.19	.19	.25	.26	.20	.21
Land, building & fence repair	.26	.19	.14	.21	.25	.22	.32	.34	.23	.26
Taxes	.21	.20	.21	.22	.23	.21	.23	.21	.22	.22
Insurance	.14	.16	.15	.16	.16	.17	.19	.18	.17	.17
Utilities (farm share)	.33	.34	.34	.36	.39	.41	.44	.43	.38	.41
Interest paid	.82	.61	.56	.57	.65	.78	.83	.54	.51	.53
Misc. (including rent)	.42	.44	.40	.43	.37	.45	.49	.49	.44	.44
Total Operating Expenses	\$13.98	\$13.27	\$13.39	\$14.67	\$14.54	\$14.51	\$16.46	\$17.77	\$15.90	\$16.04
Less: Nonmilk cash receipts	1.49	1.91	1.57	1.70	1.96	1.94	1.75	1.57	1.89	1.62
Increase in grown feed & supplies	.10	.12	.27	.17	.12	.22	.39	.66	-.04	.36
Increase in livestock	.52	.23	.09	.22	.21	.27	.30	.33	.34	.30
<b>OPERATING COST OF MILK PRODUCTION</b>	<b>\$11.87</b>	<b>\$11.01</b>	<b>\$11.46</b>	<b>\$12.58</b>	<b>\$12.25</b>	<b>\$12.08</b>	<b>\$14.02</b>	<b>\$15.21</b>	<b>\$13.71</b>	<b>\$13.76</b>
<u>Overhead Expenses</u>										
Depreciation: machinery & buildings	\$1.30	\$1.39	\$1.23	\$1.32	\$1.32	\$1.26	\$1.32	\$1.38	\$1.28	\$1.32
Unpaid labor	.10	.08	.10	.07	.06	.07	.07	.04	.05	.04
Operator(s) labor <sup>35</sup>	.74	.74	.70	.67	.61	.63	.65	.58	.54	.50
Operator(s) management (5% of cash receipts)	.87	.75	.73	.90	.90	.79	1.07	1.10	.80	.96
Interest on farm equity capital (5%)	.91	.89	.85	.92	1.02	1.06	1.20	1.29	1.21	1.15
Total Overhead Expenses	\$3.92	\$3.85	\$3.61	\$3.88	\$3.91	\$3.81	\$4.31	\$4.39	\$3.88	\$3.97
<b>TOTAL COST OF MILK PRODUCTION</b>	<b>\$15.79</b>	<b>\$14.86</b>	<b>\$15.07</b>	<b>\$16.46</b>	<b>\$16.16</b>	<b>\$15.89</b>	<b>\$18.33</b>	<b>\$19.60</b>	<b>\$17.59</b>	<b>\$17.73</b>
<b>AVERAGE FARM PRICE OF MILK</b>	<b>\$15.98</b>	<b>\$12.98</b>	<b>\$13.24</b>	<b>\$16.64</b>	<b>\$15.98</b>	<b>\$13.85</b>	<b>\$20.34</b>	<b>\$19.24</b>	<b>\$13.88</b>	<b>\$17.81</b>
Return per cwt. to operator labor, capital & mgmt.	\$2.71	\$0.50	\$0.45	\$2.67	\$2.35	\$0.44	\$4.93	\$2.61	\$-1.16	\$2.69
Rate of return on farm equity capital	6.0%	-5.6%	-5.7%	6.0%	4.1%	-4.6%	13.4%	3.6%	-10.3%	5.2%

<sup>35</sup>2001 = \$2,000/month, 2002 = \$2,100/month, 2003 through 2005 = \$2,200/month, 2006 = \$2,300/month, 2007 = \$2,400/month, and 2008 through 2010 = \$2,500/month of operator labor.

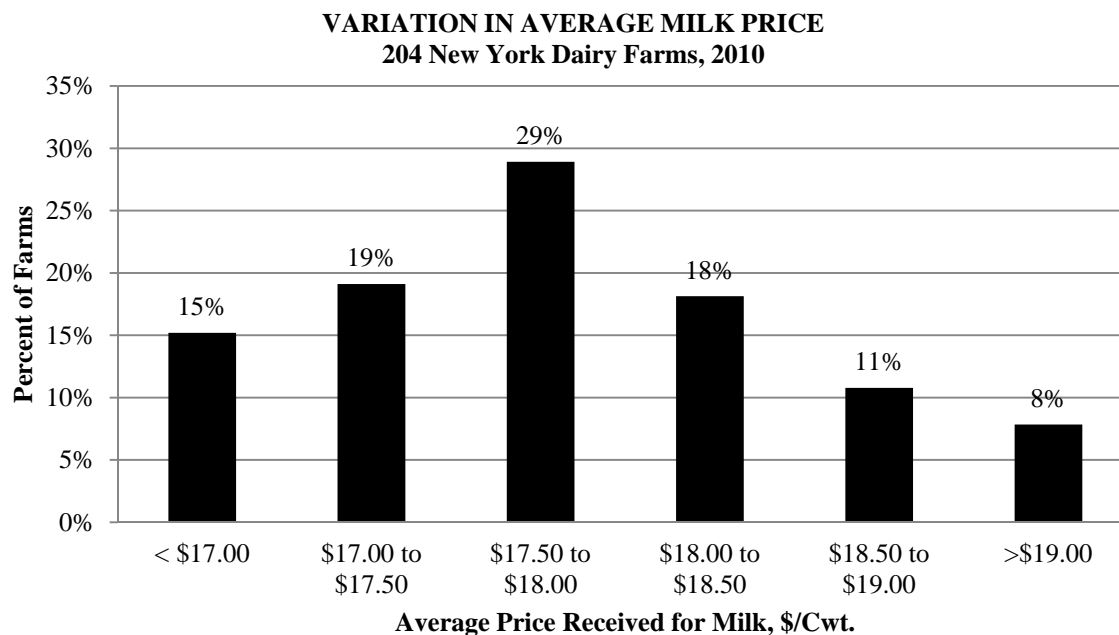
Table 34.

**TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS**  
**New York Dairy Farms, 2001 to 2010**

Item	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of farms	228	219	201	200	225	240	250	224	204	204
<u>Cropping Program</u>										
Total tillable acres	618	660	659	701	729	730	758	883	965	987
Tillable acres rented	290	337	323	345	365	360	385	446	482	493
Hay crop acres	302	323	321	339	361	366	364	421	464	469
Corn silage acres	210	232	233	245	246	249	258	297	348	340
Hay crop, tons DM/acre	2.8	3.1	3.2	3.5	3.2	3.2	3.0	3.5	3.4	3.5
Corn silage, tons/acre	16.5	15.4	17.2	17.7	18.8	18.4	18.9	19.9	18.7	19.6
Fertilizer & lime exp./tillable acre	\$32	\$27	\$28	\$31	\$33	\$30	\$40	\$49	\$42	\$43
Machinery cost/cow	\$554	\$520	\$497	\$565	\$624	\$618	\$708	\$800	\$660	\$712
<u>Dairy Analysis</u>										
Number of cows	277	297	314	334	340	350	358	414	469	489
Number of heifers	207	226	240	260	270	283	289	348	391	415
Milk sold, cwt.	60,290	66,177	70,105	73,767	78,250	80,862	82,315	99,884	113,555	119,782
Milk sold/cow, lbs.	21,762	22,312	22,302	22,070	22,998	23,083	22,983	24,115	24,208	24,508
Purchased dairy feed/cwt. milk	\$4.25	\$4.10	\$4.27	\$4.86	\$4.37	\$4.29	\$5.20	\$6.16	\$5.45	\$5.39
Purchased grain & concentrate as % of milk receipts	25%	30%	30%	27%	26%	29%	24%	31%	38%	29%
Purchased feed & crop exp/cwt.milk	\$5.03	\$4.79	\$4.92	\$5.60	\$5.12	\$5.02	\$6.13	\$7.23	\$6.41	\$6.32
<u>Capital Efficiency</u>										
Farm capital/cow	\$6,755	\$6,794	\$6,748	\$7,010	\$7,508	\$7,762	\$8,426	\$9,145	\$9,060	\$9,141
Real estate/cow	\$2,713	\$2,612	\$2,722	\$2,809	\$2,950	\$3,030	\$3,356	\$3,606	\$3,713	\$3,857
Machinery investment/cow	\$1,222	\$1,261	\$1,208	\$1,226	\$1,314	\$1,384	\$1,448	\$1,535	\$1,553	\$1,570
Asset turnover ratio	0.63	0.53	0.54	0.64	0.60	0.52	0.67	0.59	0.44	0.56
<u>Labor Efficiency</u>										
Worker equivalent	6.72	7.21	7.50	7.97	8.18	8.19	8.40	9.75	10.74	10.93
Operator/manager equivalent	1.94	1.82	1.86	1.64	1.60	1.63	1.62	1.72	1.83	1.82
Milk sold/worker, lbs.	897,167	917,854	934,733	925,553	956,698	987,550	980,234	1,024,799	1,057,063	1,095,897
Cows/worker	41	41	42	42	42	43	43	42	44	45
Labor cost/cow	\$706	\$725	\$738	\$752	\$765	\$757	\$784	\$823	\$794	\$771
Hired labor exp./hired worker equiv.	\$31,448	\$31,755	\$32,659	\$33,311	\$33,539	\$34,071	\$34,924	\$36,312	\$35,908	\$35,643
<u>Profitability &amp; Financial Analysis</u>										
Labor & mgmt. income/operator	\$45,479	\$-14,243	\$-15,360	\$78,061	\$64,745	\$-31,269	\$189,019	\$75,945	\$-147,313	\$101,484
Farm net worth, end year	\$1,181,055	\$1,173,836	\$1,207,964	\$1,466,674	\$1,690,427	\$1,736,505	\$2,200,655	\$2,640,168	\$2,639,640	\$3,012,912
Percent equity	60%	57%	56%	60%	63%	62%	68%	68%	62%	65%

The average or mean price per hundredweight of milk sold is calculated by dividing gross milk receipts by total pounds of milk sold. The average price for the 204 farms was \$17.81 but there was considerable variation among the individual farms. The variation in average price received and the distribution of farms around the mean are shown below.

**Chart 17.**



Forty-seven percent of the farms received from \$17.50 to \$18.50 per hundredweight of milk sold. Nineteen percent of the farms received \$18.50 or more and 34 percent received less than \$17.50 per hundredweight. Location and organization of markets are factors contributing to the difference in average milk prices on these dairy farms. Management practices on farms as well as in milk companies also affect farm milk prices. Seasonality of production and milk components are two variables that affect milk price. More milk price analysis can be found on pages 40 and 41.

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Evaluating these costs per unit of production enables the comparison of different size dairy farms for strengths and areas for improvement.

**Table 35.**

**DAIRY RELATED ACCRUAL EXPENSES  
204 New York Dairy Farms, 2010**

Item	Average 204 Farms		Average Top 10% Farms <sup>36</sup>	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$1,242	\$5.07	\$1,171	\$4.60
Purchased dairy roughage	78	.32	77	.30
Total Purchased Dairy Feed	\$1,320	\$5.39	\$1,248	\$4.90
Purchased grain & concentrate as % of milk receipts		29%		25%
Purchased feed & crop expense	\$1,549	\$6.32	\$1,449	\$5.69
Purchased feed & crop expense as % of milk receipts		37%		33%
Breeding	\$51	\$.21	\$50	\$.20
Veterinary & medicine	154	.63	147	.58
Milk marketing	219	.89	215	.84
Bedding	86	.35	83	.33
Milking Supplies	89	.36	73	.29
Cattle lease	3	.01	5	.02
Custom boarding	88	.36	69	.27
bST expense	57	.23	70	.27
Other livestock expense	34	.14	25	.10

<sup>36</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Feed costs per cow and per hundredweight of milk sold are influenced by a number of factors. These cost measures are affected by the amount of homegrown grains fed, quality and quantity of the roughage harvested, and the number of youngstock. Feed costs are also influenced by the farmer's ability to purchase grains and concentrates at reasonable prices and to balance nutrients fed with energy and protein requirements.

Purchased dairy grain and concentrates per cow is calculated by dividing the total accrual expenses for dairy grains and concentrates purchased by the average number of cows. Because this also included the amount spent for calf and heifer feed, it actually represents feed cost for one cow and associated replacements being raised (averaged 0.85 animals in 2010).

Purchased feed and crop expense per hundredweight of milk is one of the most useful feed cost measures because it accounts for some of the variations in feeding and cropping programs, and milk production between herds. It includes all purchased feeds used on the farm, and it includes crop expenses that are associated with feed production. It does not represent total feed costs because machinery, labor and other costs of producing feed crops are excluded.

Purchased grain and concentrates as percent of milk sales is calculated by dividing feed purchased by milk receipts. This is another useful measure of feed efficiency although variations in homegrown grains fed, heifers fed, and milk prices can have an impact. Purchased feed and crop expense as percent of milk sales removes much of the variation caused by the feeding of home grown grains.

Cost control has an important effect on farm profitability. The relationship between purchased feed and crop expense per hundredweight of milk and farm profitability is shown below. On average, farms with feed and crop expenses exceeding \$6.50 reported below average profits in 2010. Net milk income over purchased concentrate per cow shows a similar relationship when compared to rate of return on assets without appreciation (Chart 18).

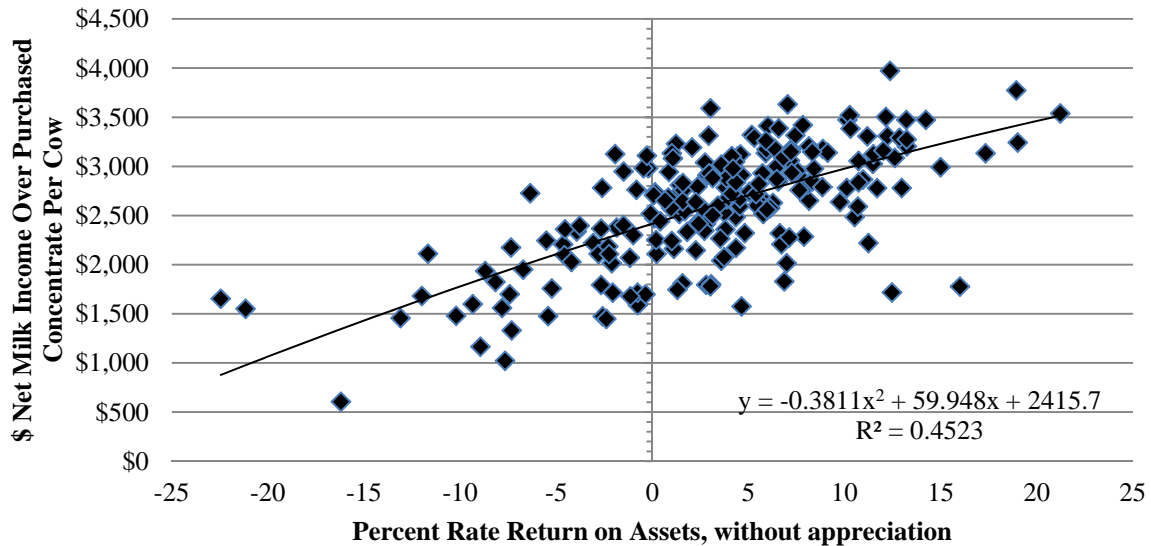
**Table 36.**

**PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT  
OF MILK AND FARM INCOME MEASURES  
204 New York Dairy Farms, 2010**

Feed & Crop Expense Per Cwt. of Milk	Number of Farms	Number of Cows	Forage Dry Matter Harvested Per Cow	Pounds Milk Per Cow	Net Farm Income Without Appreciation	Labor & Management Income Per Operator	Labor & Management Per Operator Per Cow
\$7.50 or more	36	194	7.2	20,139	\$57,308	\$3,103	\$16
7.00 to 7.49	19	657	7.9	25,185	278,556	52,773	80
6.50 to 6.99	36	512	7.6	23,930	249,095	57,433	112
6.00 to 6.49	50	558	8.9	25,640	378,838	117,031	210
5.50 to 6.00	35	570	8.1	24,422	479,057	173,201	304
Less than 5.50	28	499	8.7	24,715	520,373	170,532	342

**Chart 18.**

**NET MILK INCOME OVER PURCHASED CONCENTRATE PER COW BY  
RETURN ON ASSETS  
204 New York Dairy Farms, 2010**



### Milk Income and Marketing Expense Breakdown

Starting January 1<sup>st</sup>, 2000, the Northeast switched to multiple component pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 140 farms filled out a detailed form including all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different sections, each representing a different area of income or expense. The cumulative total for these six sections is the net price received on farms. MILC payments are not included as a milk receipt, but as a government receipt.

Table 37 reports the averages for the 140 farms providing the data. Table 38 on page 41 contains the quintile averages for each of the individual lines of the report. This table is in a farm business chart format with each item sorted independently and ranked by fifths. Numbers for the different sections will not add to the totals for that quintile or to the net price received because each item is sorted independently. This table shows the range of income and expenses received by farms for all the different sections. More milk price information was presented on page 38.

**Table 37.**

### AVERAGE<sup>37</sup> MILK INCOME AND MARKETING REPORT 140 New York Dairy Farms, 2010

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
<b>BASE FARM PRICE</b>					
Butterfat	543,216	3.64%	\$1.86	\$1,007,813	\$6.76
Protein	457,187	3.07%	\$2.30	\$1,051,749	\$7.06
Solids	866,464	5.81%	\$0.17	\$150,109	\$1.01
<b>Total Component Contribution</b>					<b>\$14.82</b>
<b>PPD</b>	14,906,425			\$253,426	<b>\$1.70</b>
<b>Base Farm Price</b>					<b>\$16.52</b>
<b>Premiums</b>					
Quality				\$40,466	\$0.27
Volume				\$44,788	\$0.30
Market Premiums				\$82,845	\$0.56
<b>Total Premiums</b>					<b>\$1.13</b>
<b>BASE FARM PRICE + PREMIUM</b>					
<hr style="border-top: 1px dashed black;"/>					
<b>Deductions</b>					
Promotion				\$22,817	\$0.15
Hauling & Stop Charges.				\$92,046	\$0.62
Market Fees & Coop Dues				\$21,093	\$0.14
<b>Total Deductions</b>					<b>\$0.91</b>
<b>BASE FARM PRICE + PREMIUMS – DEDUCTIONS</b>					
<b>Marketing Programs</b>					
Futures Contracts, Forward Contracting, Etc.				\$-813	\$-0.01
<b>Total Marketing Income</b>					<b>\$-0.01</b>
<b>Patronage Dividends</b>				\$28,313	<b>\$0.19</b>
<b>NET PRICE RECEIVED ON FARM, ALL SOURCES</b>					
<b>PPD – Hauling, per cwt.</b>					\$1.08
<b>PPD – Hauling + Market Premiums, per cwt.</b>					\$1.64
<b>Net Marketing Value, per cwt. (PPD + Total Premiums - Total Deductions)</b>					<b>\$1.92</b>

<sup>37</sup>Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals. However, detail in the “\$/Cwt of Milk” column will result in the totals. Average herd size for these 140 farms is 599 cows.





### Capital and Labor Efficiency Analysis

Capital efficiency factors show how intensively capital is being used in the farm business. Capital efficiency can be measured as investment per worker and per cow. It can also be measured in terms of the relationship to farm receipts.

**Table 39.**

<b>CAPITAL EFFICIENCY</b>				
<b>204 New York Dairy Farms, 2010</b>				
Item (Average for Year)	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$408,735	\$9,141	\$4,525	\$9,032
Real estate		\$3,857		\$3,811
Machinery & equipment	\$70,206	\$1,570	\$777	
<b>Ratios</b>				
Asset turnover	Operating Expense	Interest Expense		Depreciation Expense
0.56	0.77	0.03		0.07
<b>Average Top 10% Farms:<sup>39</sup></b>				
Farm capital	\$410,251	\$8,255	\$4,585	\$8,525
Real estate		\$3,350		\$3,459
Machinery & equipment	\$63,516	\$1,278	\$710	
<b>Ratios</b>				
Asset turnover ratio	Operating Expense	Interest Expense		Depreciation Expense
0.65	0.69	0.02		0.05

<sup>39</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

Asset turnover ratio measures the relationship between capital investment and farm receipts. It is computed by dividing the year's total farm accrual receipts including appreciation by the average farm assets. The relationship the asset turnover ratio has to farm profitability and other factors is shown in the following table. As a general rule, dairy farmers should aim for an asset turnover ratio of 0.6 or higher. The operational ratios reflect the relationship of expense categories to total farm receipts. The sum of the operating, interest, and depreciation expense ratios expresses total farm expenses per dollar of total farm receipts.

**Table 40.**

<b>ASSET TURNOVER AND PROFITABILITY</b>						
<b>204 New York Dairy Farms, 2010</b>						
Ratio	Number of Farms	Number of Cows	Farm Capital (average for year)		Labor & Manage- ment Income Per Operator	Net Farm Income (without appreciation)
			Per Cow	Per Worker		
≥ .60	56	809	\$7,618	\$363,151	\$256,314	\$642,281
.50 to .59	47	699	9,612	423,731	110,916	436,685
.40 to .49	46	316	10,604	468,696	35,686	183,051
Less than .40	55	128	13,735	470,114	-28,516	30,730

Measures of labor efficiency are key indicators of the work accomplished by an average worker. The 20 farms with the highest rates of return on all capital (without appreciation) were above the average of all 204 farms in all measures of labor efficiency except tillable acres per worker. The top 10 percent averaged five more cows per worker and sold 15 percent more milk per worker than the average of all farms.

**Table 41.**

<b>LABOR EFFICIENCY</b>				
<b>204 New York Dairy Farms, 2010</b>				
Labor Efficiency	Average Farms		Average Top 10% Farms <sup>41</sup>	
	Total	Per Worker <sup>40</sup>	Total	Per Worker <sup>40</sup>
Cows, average number	489	45	813	50
Milk sold, pounds	11,978,152	1,095,897	20,682,529	1,265,051
Tillable acres	987	90	1,463	89

<sup>40</sup>The method used to calculate worker equivalent incorporates the number of hours actually worked by the owner/operators, instead of using a standard 12 months for each full-time owner/operator of the business. A full-time month is specified to be 230 hours of labor per month.

<sup>41</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

The labor force averaged 10.93 full-time worker equivalents per farm (based on 230 hours per month). Eighteen percent of the labor was supplied by the farm operator/managers. There were two operators on 131 farms, three on 51 farms, and 25 farms reported four or more operators.

Labor costs, labor efficiency, and farm profitability are closely related. Farms with high rates of return can attribute some of their success to the control of labor and machinery costs. Labor and machinery costs average \$1,395 per cow and \$5.48 per hundredweight on the 20 farms in the top decile.

**Table 42.**

**LABOR FORCE INVENTORY AND COST ANALYSIS  
204 New York Dairy Farms, 2010**

Labor Force	Months <sup>42</sup>	Age	Years of Education	Value of Labor & Management	
Operator number 1	12.9	53	14	\$49,239	
Operator number 2	7.3	48	14	30,103	
Operator number 3	2.7	42	15	11,427	
Operator number 4	1.4	49	15	<u>4,587</u>	
Family paid	3.9			Total \$95,356	
Family unpaid	1.7				
Hired	<u>101.3</u>				
Total	131.2	÷ 12 =	10.93 Worker Equivalent		
			1.82 Operator/Manager Equivalent		
<u>Average Top 10% Farms:</u> <sup>43</sup>					
Total	196.2	÷ 12 =	16.35 Worker Equivalent		
Operators'			1.92 Operator/Manager Equivalent		
		Average 204 Farms		Avg. Top 10% Farms <sup>43</sup>	
Labor Costs	Total	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Value operators' labor (\$2,500/month)	\$ 60,031	\$ 123	\$ 0.50	\$ 79	\$0.31
Family unpaid (\$2,500/month)	4,184	9	0.03	1	0.00
Hired	<u>312,534</u>	<u>639</u>	<u>2.61</u>	<u>668</u>	<u>2.63</u>
Total Labor	\$376,748	\$ 771	\$ 3.15	\$ 748	\$2.94
Machinery Cost	<u>347,863</u>	<u>712</u>	<u>2.90</u>	<u>647</u>	<u>2.54</u>
Total Labor & Machinery	\$724,611	\$1,483	\$ 6.05	\$1,395	\$5.48
Hired labor exp. per hired worker equiv.	\$35,643			\$38,288	
Hired labor exp. as % of milk sales	14.7%			14.6%	

<sup>42</sup>See footnote number 40 in Table 41.

<sup>43</sup>Average of 20 farms with highest rates of return to all capital (without appreciation).

The relationship of labor efficiency to net farm income and labor and management income per operator is usually positive over the range of efficiency levels. The higher outputs of milk sold per worker are partially attributable to higher producing cows. In 2010, increased labor efficiency did result in larger net farm incomes.

**Table 43.**

**MILK SOLD PER WORKER AND NET FARM INCOME  
204 New York Dairy Farms, 2010**

Pounds of Milk Sold Per Worker	No. of Farms	No. of Cows	Pounds of Milk Per Cow	Net Farm Income (without appreciation)	Labor & Manage- ment Income Per Operator
Under 500,000	24	67	15,643	\$3,383	\$-26,615
500,000 to 699,999	43	140	20,027	75,306	8,479
700,000 to 899,999	29	235	22,668	98,272	6,835
900,000 to 1,099,999	50	546	24,114	299,803	83,062
1,100,000 & over	58	1,000	25,620	783,500	243,684

### 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 204 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 44.**

#### FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS 204 New York Dairy Farms, 2010

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent	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
34.6	1,715	44,507,767	28,024	5.9	27	65	1,496,743
21.9	992	25,065,046	26,486	4.4	23	51	1,239,084
16.5	722	18,382,622	25,611	4.0	22	48	1,131,389
12.4	548	12,786,314	24,763	3.7	20	44	1,052,995
8.3	385	8,896,608	23,569	3.4	19	42	991,796
-----							
5.7	233	5,098,220	22,603	3.1	18	38	888,445
4.3	150	2,980,442	21,295	2.7	18	36	749,166
3.2	105	1,958,629	19,859	2.2	17	32	656,722
2.4	70	1,322,994	17,279	1.9	15	29	530,202
1.7	46	824,194	13,227	1.3	11	21	361,659
-----							
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		
\$569	18%	\$427	\$1,019	\$800	\$4.47		
846	23	561	1,292	1,114	5.53		
967	26	623	1,394	1,251	5.86		
1,079	27	671	1,478	1,363	6.10		
1,169	29	717	1,531	1,452	6.33		
-----							
1,234	30	755	1,603	1,518	6.53		
1,288	31	803	1,661	1,595	6.79		
1,357	33	872	1,796	1,677	7.14		
1,436	35	954	1,951	1,782	7.76		
1,575	41	1,164	2,354	2,007	9.55		

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.

Farm Business Charts for farms with freestall barns and 200 cows or less, 200 to 400 cows, and more than 400 cows, and farms with conventional barns with less than 60 cows and equal to or more than 60 cows are discussed in the supplemental section on pages 66-70.

**Table 44. (continued)**

**FARM BUSINESS CHART FOR  
FARM MANAGEMENT COOPERATORS  
204 New York Dairy Farms, 2010**

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Production Per Cwt.	
\$5,056	\$19.76	\$1,742	\$10.09	\$2,903	\$14.79	
4,718	18.65	2,307	11.64	3,547	15.81	
4,520	18.29	2,647	12.46	3,786	16.67	
4,370	18.07	2,898	13.16	3,958	17.45	
4,189	17.85	3,081	13.74	4,116	17.83	
-----						
4,013	17.71	3,246	14.13	4,265	18.76	
3,778	17.52	3,428	14.66	4,442	19.67	
3,491	17.31	3,612	15.43	4,625	21.11	
3,125	17.03	3,872	16.60	4,863	23.11	
2,402	16.49	4,272	19.05	5,330	28.67	
-----						
Net Farm Income Without Appreciation			Profitability Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
\$1,585,864	\$1,366	0.29	\$1,900,618	\$1,938	\$1,164,968	\$608,745
662,211	1,070	0.23	829,592	1,295	422,477	233,448
437,842	874	0.19	601,181	1,098	263,930	126,152
300,908	754	0.16	387,604	936	140,197	71,428
183,729	653	0.14	248,959	798	79,500	42,780
-----						
114,646	542	0.12	154,252	695	41,512	25,059
68,027	409	0.09	89,447	556	8,766	6,299
41,582	278	0.06	49,752	391	-14,134	-9,501
11,394	97	0.02	17,122	137	-46,357	-35,267
-78,221	-466	-0.14	-60,960	-421	-166,013	-110,938

## Financial Analysis and Management

Analysis and astute management of farm financial affairs must receive high priority if the farm business is to be successful and if the farm family is to achieve a reasonable living standard.

The farm finance checklist and the financial analysis chart are provided to serve as guidelines. Dairy farmers can determine how their financial management measures up by comparing with average data from other farms.

**Table 45.**

### **A FARM FINANCE CHECKLIST 204 New York Dairy Farms, 2010**

	Average 204 Farms		Average Top 10% Farms <sup>44</sup>	
<u>How farm assets are being used (average for the year):</u>				
Total assets (capital) per cow	\$9,141		\$8,255	
Farm assets in livestock	24%		25%	
Farm assets in farm real estate	42%		41%	
Farm assets in machinery	17%		15%	
<u>Measures of debt capacity &amp; debt structure:</u>				
Equity in the business	65%		76%	
Farm debt per cow	\$3,207		\$2,026	
Long term debt/asset ratio <sup>45</sup>	0.32		0.17	
Intermediate & current term debt/asset ratio <sup>45</sup>	0.36		0.29	
Intermediate & current term debt as % of total debt	61%		72%	
<u>Debt repayment ability:<sup>46</sup></u>				
Cash flow coverage ratio	1.34		2.36	
Debt coverage ratio	1.99		3.90	
Debt payments made per cow	\$635		\$600	
Debt payments made as % of milk receipts	14%		13%	
<u>Indicators of annual financial progress:</u>				
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Annual change in farm assets	+\$280,166	+6.5%	+\$671,879	+10.5%
Annual change in farm debt	-\$ 20,409	-1.3%	-\$205,629	-10.8%
Annual change in farm net worth	+\$300,575	+11.0%	+\$877,509	19.6%

<sup>44</sup>Twenty farms with highest rates of return on all capital (without appreciation).

<sup>45</sup>Long or intermediate and current term debt divided by long or intermediate and current term assets.

<sup>46</sup>Average of 185 farms that participated in DFBS both in 2009 and 2010. Eighteen top 10 percent farms that participated both years.

The most profitable farms carried \$1,181 less debt per cow, the average equity in their businesses was 11 percent higher than that of the average of all 204 farms, and they had a greater ability to make 2011 debt payments when measured by cash flow coverage ratio and debt coverage ratio. Because, with higher income they were able to pay down debt, it does not mean that lower debt farms are more profitable.

Average farm assets grew 6.2 percentage points faster than debt during 2010 on the 204 dairy farms. Average farm net worth increased 11 percent.

The farm financial analysis chart is designed just like the farm business chart on pages 44-45 and may be used to measure the financial health of the farm business. Most of the financial measures are defined on pages 16, 18, 22, and 42 in this publication.

**Table 46.**

**FINANCIAL ANALYSIS CHART**  
**204 New York Dairy Farms, 2010**

Liquidity/Repayment							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
\$43	\$1,196	7.39	12.09	3%	\$ 161	65%	32.07
236	861	2.17	3.43	6	1,038	36	4.79
332	741	1.65	2.33	8	1,871	28	3.30
448	661	1.42	1.89	10	2,417	22	2.63
548	595	1.22	1.59	12	2,904	18	2.18
-----							
632	511	1.05	1.27	14	3,392	14	1.85
742	433	0.85	1.00	15	3,900	11	1.50
858	348	0.73	0.72	17	4,395	7	1.19
1,006	206	0.43	0.23	20	5,065	-2	0.85
1,601	-178	-0.59	-0.50	31	6,936	-19	0.35
-----							
Solvency				Operational Ratios			
Leverage Ratio <sup>47</sup>	Percent Equity	Debt/Asset Ratio		Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio	
		Current & Intermediate	Long Term				
0.01	99%	0.02	0.00	0.63	0.00	0.02	
0.12	90	0.10	0.00	0.68	0.01	0.04	
0.23	82	0.18	0.01	0.72	0.01	0.05	
0.30	78	0.25	0.10	0.75	0.02	0.05	
0.44	72	0.31	0.21	0.77	0.02	0.06	
-----							
0.61	63	0.37	0.33	0.79	0.03	0.07	
0.72	59	0.42	0.44	0.81	0.04	0.07	
0.87	54	0.50	0.53	0.84	0.04	0.09	
1.17	47	0.60	0.63	0.88	0.05	0.10	
3.03	33	0.79	0.95	1.01	0.09	0.15	
-----							
Efficiency (Capital)				Profitability			
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth With Appreciation	Percent Rate of Return with Appreciation on:		
					Equity	Investment <sup>48</sup>	
0.82	\$1,796	\$616	\$5,927	\$1,559,343	31%	19%	
0.68	2,600	996	7,238	647,486	17	12	
0.62	3,022	1,324	8,088	436,905	13	9	
0.55	3,332	1,528	8,673	271,545	10	8	
0.52	3,755	1,719	9,280	163,158	8	6	
-----							
0.48	4,207	1,892	9,915	77,763	5	5	
0.44	4,755	2,109	10,545	37,984	3	3	
0.39	5,643	2,282	11,585	16,650	0	1	
0.31	6,902	2,710	13,138	-4,658	-6	-2	
0.21	11,328	4,163	18,676	-136,008	-42	-10	

<sup>47</sup>Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

<sup>48</sup>Return on all farm capital (no deduction for interest paid) divided by total farm assets.

## Herd Size Comparisons

The 204 New York dairy farms have been sorted into seven herd size categories and averages for the farms in each category are presented in Tables 47 through 54. Note that after the less than 60 cow category, the herd size categories increase by 40 cows up to 100 cows, by 100 cows up to 200 cows, by 200 cows up to 600 cows and by 300 cows up to 900 cows.

In most years, as herd size increases, the net farm income increases (Table 47); and that was generally the case for 2010. Net farm income without appreciation averaged \$24,201 per farm for the less than 60 cow farms and \$1,030,251 per farm for those with more than 900 cows. Return to all capital without appreciation generally increased as herd size increased. With herd sizes between 60 and 200 cows, many farms find it difficult to find a low cost combination of technology and labor to produce milk. Thus profits are lower for these herds than other herd sizes.

It is more than size of herd that determines profitability on dairy farms. Farms with 900 and more cows averaged \$715 net farm income per cow while 60 cows or less dairy farms averaged \$509 net farm income per cow. The over 900 herd size category had the highest net farm income per cow while the 60 to 99 herd size category had the lowest net farm income per cow at \$210. Other factors that affect profitability and their relationship to the size classifications are shown in Table 48.

**Table 47.**

### **COWS PER FARM AND FARM FAMILY INCOME MEASURES 204 New York Dairy Farms, 2010**

Number of Cows	Number of Farms	Average Number of Cows	Net Farm Income Without Appreciation	Net Farm Income Per Cow	Labor & Management Income Per Operator	Return to All Capital Without Appreciation
Under 60	24	48	\$24,201	\$509	\$-8,307	-3.4%
60 to 99	23	76	16,052	210	-15,740	-3.5%
100 to 199	42	139	67,455	484	-978	1.3%
200 to 399	26	290	190,350	657	58,665	5.6%
400 to 599	25	490	325,488	665	89,346	6.8%
600 to 899	30	740	490,148	662	153,264	7.3%
900 & over	34	1,440	1,030,251	715	273,170	7.9%

This year, net farm income per cow did generally exhibit the usual increase as herd size increased. All herd size categories except the largest category saw an increase in operating cost of producing milk from a year earlier (Table 48). Net farm income per cow will increase as farms become larger if the costs of increased purchased inputs are offset by greater and more efficient output.

The farms with more than 900 cows averaged more milk sold per cow than any other size category (Table 48). With 25,649 pounds of milk sold per cow, farms in the largest herd size group averaged 9.6 percent more milk output per cow than the average of all herds in the summary with less than 900 cows.

Many dairy farmers who have been willing and able to employ and manage the labor required to milk three times per day have been successful. Only four percent of the 47 DFBS farms with less than 100 cows used a milking frequency greater than two times per day. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 200 cows reported five percent of the herds milking more often than two times per day, the 200-399 cow herds reported 58 percent, 400-599 cow herds reported 64 percent, 600-899 cow herds reported 87 percent, and the 900 cow and larger herds reported 94 percent exceeding the two times per day milking frequency.



**Table 48.**

**COWS PER FARM AND RELATED FARM FACTORS**  
**204 New York Dairy Farms, 2010**

Number of Cows	Average Number of Cows	Milk Sold Per Cow (lbs.)	Milk Sold Per Worker (cwt.)	Tillable Acres Per Cow	Forage DM Per Cow (tons)	Farm Capital Per Cow	Cost of Producing Milk Per Cwt.	
							Operating	Total
Under 60	48	19,166	4,623	3.6	8.7	\$12,659	\$13.45	\$23.00
60 to 99	76	19,147	5,506	2.8	7.9	11,324	15.01	22.60
100 to 199	139	19,898	7,011	3.0	8.6	12,187	13.89	20.08
200 to 399	290	24,039	9,889	2.0	8.0	9,051	13.90	17.28
400 to 599	490	22,956	9,990	2.4	8.2	8,201	13.95	17.35
600 to 899	740	24,921	11,249	2.0	7.9	8,887	14.16	17.11
900 & over	1,440	25,649	12,576	1.8	8.4	8,980	13.48	16.41

Milk output per worker has always shown a strong correlation with herd size. The farms with 100 cows or more averaged over 1,125,600 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 509,700 pounds per worker.

In achieving the highest productivity per cow and per worker, the largest farms had the fewest crop acres per cow and above average forage dry matter harvested per cow. The 400 to 599 herd size group had the more efficient use of farm capital with an average investment of \$8,201 per cow.

The 34 farms with 900 or more cows had the lowest total cost of producing milk at \$16.41 per hundredweight. This is \$1.34 below the \$17.75 average for the remaining 170 dairy farms.

Tables 49 through 51 show progress of the farm businesses that have participated in DFBS in each of the last five years for three herd size groups.

A detailed list of accrual expenses, receipts and a profitability analysis is presented in Table 52, on pages 53 and 54 for the seven herd size categories. Purchased feed is the largest expense on all farms, regardless of size. However, larger farms find hired labor expense as the second largest expense category.

Assets, liabilities and financial measures are presented in Table 53 on pages 55-58. All herd size categories saw an increase in net worth during 2010. The largest herd size category experienced an increase in net worth of \$962,958. However, percent equity went down as assets increased. The largest herds had the lowest percent equity; while the smaller herds averaged 79 percent.

Selected business factors by herd size group are presented in Table 54 on pages 59 and 60. George Warren, father of farm business management at Cornell, said in his 1918 farm management text, "No size of farm is large enough to ensure a profit." Therefore, larger farms are, on average, more profitable; but no farm is large enough to guarantee a profit. For a more detailed analysis of large herd farms, see Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2010. For analysis of smaller herds, see Dairy Farm Business Summary, New York Small Herd Farms, 120 Cows or Fewer, 2010. Both publications are available from Linda Putnam, Dyson School of Applied Economics and Management, Cornell University, 216 Warren Hall, Ithaca, New York 14853-7801; phone 607-255-8429; e-mail [ldp2@cornell.edu](mailto:ldp2@cornell.edu). Visit the Charles H. Dyson School of Applied Economics and Management website <http://www.dyson.cornell.edu/outreach/> for a list of all department publications and a publication order form.

**Table 49.**

**PROGRESS OF FARM BUSINESSES WITH LESS THAN 110 COWS**  
Same 34 New York Dairy Farms, 2006 - 2010

Selected Factors	2006	2007	2008	2009	2010
Milk receipts per cwt. milk	\$13.70	\$20.54	\$19.36	\$13.63	\$17.73
<u>Size of Business</u>					
Average number of cows	63	65	66	68	68
Average number of heifers	52	55	58	57	57
Milk sold, cwt.	12,185	12,518	12,964	13,157	13,369
Worker equivalent	2.34	2.38	2.38	2.44	2.42
Total tillable acres	172	172	181	182	189
<u>Rates of Production</u>					
Milk sold per cow, lbs.	19,351	19,233	19,546	19,306	19,559
Hay DM per acre, tons	2.4	2.1	2.3	2.5	2.4
Corn silage per acre, tons	15	17	19	17	17
<u>Labor Efficiency</u>					
Cows per worker	27	27	28	28	28
Milk sold per worker, lbs.	520,740	525,979	544,695	539,212	552,444
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	32%	25%	32%	40%	31%
Dairy feed & crop expense per cwt. milk	\$5.84	\$6.58	\$8.13	\$7.14	\$7.23
Operating cost of producing cwt. milk	\$11.47	\$13.27	\$15.09	\$12.57	\$14.88
Total cost of producing cwt. milk	\$18.44	\$20.32	\$22.30	\$19.94	\$21.93
Hired labor cost per cwt.	\$0.91	\$1.07	\$0.98	\$0.92	\$1.08
Interest paid per cwt.	\$0.74	\$0.78	\$0.65	\$0.62	\$0.66
Labor & machinery costs per cow	\$1,670	\$1,768	\$1,812	\$1,708	\$1,766
Replacement livestock expense	\$1,444	\$1,543	\$1,151	\$84	\$908
Expansion livestock expense	\$1,096	\$18	\$837	\$1,013	\$694
<u>Capital Efficiency</u>					
Farm capital per cow	\$9,409	\$9,664	\$10,175	\$10,191	\$10,369
Machinery & equipment per cow	\$1,987	\$2,000	\$2,151	\$2,163	\$2,216
Real estate per cow	\$4,230	\$4,287	\$4,385	\$4,457	\$4,629
Livestock investment per cow	\$2,220	\$2,293	\$2,383	\$2,307	\$2,249
Asset turnover ratio	0.36	0.50	0.43	0.32	0.37
<u>Profitability</u>					
Net farm income without appreciation	\$10,927	\$73,719	\$37,103	-\$3,493	\$21,071
Net farm income with appreciation	\$18,874	\$94,555	\$42,135	-\$3,560	\$23,681
Labor & management income per operator/manager	\$-17,361	\$31,714	-\$1,089	-\$32,702	-\$12,345
Rate return on:					
Equity capital with appreciation	-6.3%	10.0%	-1.4%	-11.2%	-5.5%
All capital with appreciation	-3.2%	9.1%	0.2%	-7.1%	-2.7%
All capital without appreciation	-4.5%	5.8%	-0.6%	-7.1%	-3.1%
<u>Financial Summary, End Year</u>					
Farm net worth	\$438,521	\$506,343	\$518,671	\$505,581	\$515,191
Change in net worth with appreciation	-\$6,318	\$64,826	\$9,986	-\$16,080	\$11,131
Debt to asset ratio	0.26	0.23	0.25	0.28	0.28
Farm debt per cow	\$2,472	\$2,260	\$2,545	\$2,781	\$2,895

**Table 50.**

**PROGRESS OF FARM BUSINESSES WITH 110-499 COWS**  
Same 53 New York Dairy Farms, 2006 - 2010

Selected Factors	2006	2007	2008	2009	2010
Milk receipts per cwt. milk	\$13.79	\$20.49	\$19.35	\$13.75	\$17.68
<u>Size of Business</u>					
Average number of cows	226	235	245	256	269
Average number of heifers	186	192	203	219	234
Milk sold, cwt.	50,227	52,726	56,198	58,404	62,340
Worker equivalent	5.83	5.93	6.24	6.44	6.62
Total tillable acres	517	528	557	570	602
<u>Rates of Production</u>					
Milk sold per cow, lbs.	22,252	22,413	22,903	22,829	23,152
Hay DM per acre, tons	3.3	3.2	3.4	3.3	3.4
Corn silage per acre, tons	17	19	19	18	19
<u>Labor Efficiency</u>					
Cows per worker	39	40	39	40	41
Milk sold per worker, lbs.	861,526	889,132	900,605	906,901	941,687
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	29%	23%	31%	39%	29%
Dairy feed & crop expense per cwt. milk	\$5.05	\$6.13	\$7.52	\$6.61	\$6.37
Operating cost of producing cwt. milk	\$11.80	\$13.78	\$15.45	\$13.03	\$13.64
Total cost of producing cwt. milk	\$15.55	\$17.72	\$19.52	\$16.86	\$17.43
Hired labor cost per cwt.	\$2.39	\$2.43	\$2.61	\$2.54	\$2.46
Interest paid per cwt.	\$0.71	\$0.67	\$0.50	\$0.47	\$0.52
Labor & machinery costs per cow	\$1,429	\$1,568	\$1,705	\$1,489	\$1,532
Replacement livestock expense	\$5,605	\$5,931	\$6,033	\$4,511	\$3,893
Expansion livestock expense	\$1,808	\$5,206	\$8,710	\$6,744	\$5,635
<u>Capital Efficiency</u>					
Farm capital per cow	\$8,059	\$8,460	\$9,082	\$9,073	\$9,087
Machinery & equipment per cow	\$1,612	\$1,643	\$1,740	\$1,758	\$1,730
Real estate per cow	\$3,201	\$3,273	\$3,540	\$3,647	\$3,730
Livestock investment per cow	\$2,035	\$2,152	\$2,218	\$2,142	\$2,073
Asset turnover ratio	0.48	0.66	0.57	0.42	0.54
<u>Profitability</u>					
Net farm income without appreciation	\$40,588	\$285,830	\$144,048	\$-26,699	\$175,529
Net farm income with appreciation	\$86,307	\$375,912	\$178,357	\$-38,143	\$239,817
Labor & management income per operator/manager	\$-16,906	\$130,812	\$35,908	\$-65,081	\$52,676
Rate return on:					
Equity capital with appreciation	1.6%	21.5%	6.5%	-7.0%	9.8%
All capital with appreciation	3.1%	17.2%	6.0%	-3.7%	8.0%
All capital without appreciation	0.6%	12.7%	4.5%	-3.2%	5.4%
<u>Financial Summary, End Year</u>					
Farm net worth	\$1,272,560	\$1,575,672	\$1,661,124	\$1,557,086	\$1,746,458
Change in net worth with appreciation	\$19,570	\$293,905	\$71,040	\$-110,396	\$169,562
Debt to asset ratio	0.31	0.26	0.28	0.33	0.31
Farm debt per cow	\$2,488	\$2,306	\$2,598	\$2,951	\$2,863

**Table 51.**

**PROGRESS OF FARM BUSINESSES WITH MORE THAN 500 COWS**  
Same 55 New York Dairy Farms, 2006 - 2010

Selected Factors	2006	2007	2008	2009	2010
Milk receipts per cwt. milk	\$13.82	\$20.36	\$19.31	\$13.93	\$17.82
<u>Size of Business</u>					
Average number of cows	853	873	899	943	1,002
Average number of heifers	685	701	750	800	851
Milk sold, cwt.	205,638	211,866	224,724	236,545	254,190
Worker equivalent	18.31	18.96	19.80	20.41	21.24
Total tillable acres	1,595	1,672	1,783	1,858	1,931
<u>Rates of Production</u>					
Milk sold per cow, lbs.	24,096	24,269	24,986	25,085	25,368
Hay DM per acre, tons	3.5	3.3	3.9	3.6	3.8
Corn silage per acre, tons	19	19	20	19	20
<u>Labor Efficiency</u>					
Cows per worker	47	46	45	46	47
Milk sold per worker, lbs.	1,123,092	1,117,435	1,134,970	1,158,969	1,196,752
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	29%	24%	30%	37%	29%
Dairy feed & crop expense per cwt. milk	\$4.99	\$6.07	\$7.19	\$6.40	\$6.28
Operating cost of producing cwt. milk	\$12.26	\$13.70	\$15.19	\$13.73	\$13.82
Total cost of producing cwt. milk	\$15.09	\$16.72	\$18.42	\$16.84	\$16.88
Hired labor cost per cwt.	\$2.77	\$2.84	\$2.93	\$2.80	\$2.71
Interest paid per cwt.	\$0.75	\$0.77	\$0.53	\$0.50	\$0.53
Labor & machinery costs per cow	\$1,349	\$1,450	\$1,609	\$1,443	\$1,477
Replacement livestock expense	\$14,485	\$20,349	\$28,622	\$10,256	\$12,824
Expansion livestock expense	\$41,984	\$26,159	\$49,756	\$42,970	\$18,449
<u>Capital Efficiency</u>					
Farm capital per cow	\$7,655	\$8,310	\$9,114	\$9,091	\$8,910
Machinery & equipment per cow	\$1,254	\$1,356	\$1,536	\$1,599	\$1,540
Real estate per cow	\$2,975	\$3,203	\$3,430	\$3,561	\$3,573
Livestock investment per cow	\$2,128	\$2,258	\$2,364	\$2,277	\$2,188
Asset turnover ratio	0.55	0.72	0.62	0.46	0.59
<u>Profitability</u>					
Net farm income without appreciation	\$54,494	\$1,127,103	\$603,392	\$-274,266	\$669,295
Net farm income with appreciation	\$277,961	\$1,507,626	\$744,513	\$-208,702	\$856,768
Labor & management income per operator/manager	\$-71,951	\$426,519	\$153,722	\$-246,330	\$178,920
Rate return on:					
Equity capital with appreciation	4.1%	29.6%	11.2%	-6.5%	12.7%
All capital with appreciation	4.9%	21.4%	9.0%	-2.7%	9.4%
All capital without appreciation	1.4%	16.1%	7.3%	-3.5%	7.3%
<u>Financial Summary, End Year</u>					
Farm net worth	\$4,017,076	\$5,335,066	\$5,662,146	\$5,195,873	\$5,840,395
Change in net worth with appreciation	\$40,715	\$1,280,364	\$299,891	\$-460,070	\$618,022
Debt to asset ratio	0.40	0.32	0.33	0.40	0.37
Farm debt per cow	\$3,077	\$2,846	\$3,109	\$3,495	\$3,320

Table 52.

**FARM BUSINESS SUMMARY BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farm Size:	Less than 60 Cows	60 to 99 Cows	100 to 199 Cows	200 to 399 Cows
Number of farms		24	23	42	26
<b><u>ACCRUAL EXPENSES</u></b>					
Hired labor		\$4,642	\$20,418	\$51,812	\$162,320
Dairy grain & concentrate		44,709	86,912	140,877	361,550
Dairy roughage		3,770	8,051	7,214	35,251
Nondairy feed		6	356	111	549
Professional nutritional services		0	0	65	238
Machine hire, rent & lease		3,468	4,942	9,345	42,813
Machine repairs & farm vehicle expense		11,242	18,962	31,256	52,905
Fuel, oil & grease		7,459	10,841	24,927	46,816
Replacement livestock		1,031	2,412	581	7,957
Breeding		2,783	4,804	6,443	15,777
Veterinary & medicine		4,348	7,511	14,778	39,113
Milk marketing		11,680	15,776	28,086	62,028
Bedding		1,691	2,636	7,289	28,732
Milking supplies		4,805	8,360	10,221	24,865
Cattle lease & rent		0	1	839	938
Custom boarding		1,208	152	2,511	19,241
bST expense		514	542	1,842	15,298
Livestock professional fees		1,324	1,295	1,666	4,444
Other livestock expense		1,635	5,344	5,347	4,215
Fertilizer & lime		4,815	6,029	15,680	28,927
Seeds & plants		2,662	4,269	11,293	18,995
Spray & other crop expense		1,970	2,812	6,290	8,216
Crop professional fees		113	203	1,233	2,106
Land, building & fence repair		2,628	3,349	7,050	12,781
Taxes & rent		7,905	8,766	19,565	32,976
Utilities		6,662	9,162	15,423	33,172
Interest paid		6,098	10,797	19,159	36,702
Other professional fees		1,159	1,047	2,019	5,157
Misc. (including insurance)		<u>4,275</u>	<u>6,810</u>	<u>11,165</u>	<u>22,406</u>
Total Operating Expenses		\$144,599	\$252,558	\$454,088	\$1,126,491
Expansion livestock		971	1,026	1,876	10,231
Extraordinary expense		0	0	0	1,411
Machinery depreciation		9,370	16,886	30,196	39,220
Building depreciation		<u>3,701</u>	<u>6,938</u>	<u>13,884</u>	<u>30,147</u>
Total Accrual Expenses		\$158,641	\$277,408	\$500,044	\$1,207,499
<b><u>ACCRUAL RECEIPTS</u></b>					
Milk sales		\$159,811	\$259,268	\$496,975	\$1,228,822
Dairy cattle		11,381	14,228	25,983	75,464
Dairy calves		1,517	2,582	3,875	12,092
Other livestock		-12	1,814	661	389
Crops		2470	7,822	20,132	45,578
Miscellaneous receipts		<u>7,676</u>	<u>7,746</u>	<u>19,872</u>	<u>35,504</u>
Total Accrual Receipts		\$182,842	\$293,460	\$567,498	\$1,397,849
<b><u>PROFITABILITY ANALYSIS</u></b>					
Net farm income (without appreciation)		\$24,201	\$16,052	\$67,455	\$190,350
Net farm income (with appreciation)		\$24,514	\$27,339	\$109,331	\$240,872
Labor & management income		\$-10,218	\$-22,508	\$-1,614	\$105,011
Number of operators		1.23	1.43	1.65	1.79
Labor & management income/operator		\$-8,307	\$-15,740	\$-978	\$58,665
Rates of return on: Equity capital w/o apprec.		-5.6%	-6.7%	0.2%	6.5%
Equity capital with appreciation		-5.5%	-4.8%	3.5%	9.5%
All capital without appreciation		-3.4%	-3.5%	1.3%	5.6%
All capital with appreciation		-3.3%	-2.2%	3.7%	7.5%

Table 52. (continued)

**FARM BUSINESS SUMMARY BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farm Size:	400 to 599 Cows	600 to 899 Cows	900 or More Cows
Number of farms		25	30	34
<b><u>ACCRUAL EXPENSES</u></b>				
Hired labor		\$285,646	\$499,489	\$1,019,225
Dairy grain & concentrate		570,289	928,819	1,863,172
Dairy roughage		31,871	58,217	109,913
Nondairy feed		88	13	4,319
Professional nutritional services		330	1,310	2,356
Machine hire, rent & lease		72,000	61,747	102,401
Machine repairs & farm vehicle expense		96,446	145,625	273,106
Fuel, oil & grease		79,806	119,798	220,594
Replacement livestock		11,251	6,855	16,249
Breeding		25,256	40,262	70,709
Veterinary & medicine		67,061	123,126	237,572
Milk marketing		100,452	173,895	314,027
Bedding		34,674	71,298	129,140
Milking supplies		44,544	68,501	127,534
Cattle lease & rent		169	1,108	6,086
Custom boarding		25,262	91,319	140,173
bST expense		10,232	40,912	109,589
Livestock professional services		8,250	7,061	18,261
Other livestock expense		8,752	16,796	25,291
Fertilizer & lime		59,359	61,913	116,360
Seeds & plants		43,429	66,460	132,106
Spray & other crop expense		26,420	37,451	56,447
Crop professional fees		3,151	7,068	12,158
Land, building & fence repair		26,559	45,333	106,476
Taxes & rent		57,878	77,343	162,464
Utilities		53,700	69,139	142,240
Interest paid		59,494	102,700	186,547
Other professional fees		10,840	17,312	35,773
Misc. (including insurance)		30,589	57,247	90,572
Total Operating Expenses		<u>\$1,843,796</u>	<u>\$2,998,118</u>	<u>\$5,830,861</u>
Expansion livestock		9,960	10,662	31,947
Extraordinary expense		2,474	1,457	379
Machinery depreciation		81,613	139,454	296,248
Building depreciation		58,129	88,884	214,289
Total Accrual Expenses		<u>\$1,995,972</u>	<u>\$3,238,575</u>	<u>\$6,373,724</u>
<b><u>ACCRUAL RECEIPTS</u></b>				
Milk sales		\$2,034,855	\$3,332,164	\$6,521,367
Dairy cattle		132,172	222,054	440,264
Dairy calves		18,943	18,369	31,924
Other livestock		11,232	13,896	13,368
Crops		70,454	75,981	220,735
Misc. receipts		53,804	66,258	176,317
Total Accrual Receipts		<u>\$2,321,460</u>	<u>\$3,728,723</u>	<u>\$7,403,975</u>
<b><u>PROFITABILITY ANALYSIS</u></b>				
Net farm income (without appreciation)		\$325,488	\$490,148	\$1,030,251
Net farm income (with appreciation)		\$409,673	\$631,559	\$1,270,188
Labor & management income		\$195,669	\$289,669	\$652,875
Number of operators		2.19	1.89	2.39
Labor & management income/operator		\$89,346	\$153,264	\$273,170
Rates of return on: Equity capital w/o apprec.		8.4%	9.4%	10.2%
Equity capital with appreciation		11.7%	12.9%	13.1%
All capital without appreciation		6.8%	7.3%	7.9%
All capital with appreciation		8.9%	9.4%	9.8%

Table 53.

**FARM FAMILY FINANCIAL SITUATION BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farms with:		60 to 99 Cows	
	Less than 60 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<b><u>ASSETS</u></b>				
Farm cash, checking & savings	\$ 5,421	\$ 6,963	\$ 3,784	\$ 5,540
Accounts receivable	10,519	12,124	18,169	20,307
Prepaid expenses	76	375	182	85
Feed & supplies	36,552	39,546	59,613	63,898
Livestock <sup>49</sup>	104,740	106,930	166,725	166,601
Machinery & equipment <sup>49</sup>	119,285	122,150	161,561	169,744
Farm Credit stock	321	329	768	779
Other stock & certificates	4,163	4,934	16,311	16,013
Land & buildings <sup>49</sup>	<u>296,316</u>	<u>332,856</u>	<u>426,541</u>	<u>432,563</u>
Total Farm Assets	\$577,392	\$626,207	\$853,654	\$875,529
Nonfarm Assets <sup>50</sup>	<u>\$102,031</u>	<u>\$110,355</u>	<u>\$118,153</u>	<u>\$122,650</u>
Farm & Nonfarm Assets	\$679,423	\$736,562	\$971,807	\$998,179
<b><u>LIABILITIES (excluding deferred taxes)</u></b>				
Accounts payable	\$8,828	\$7206	\$22,251	\$23,503
Operating debt	1,701	2,826	8,031	5,491
Short term	1,530	1,431	2,240	3,378
Advanced government receipt	0	0	0	0
Current Portion:				
Intermediate	7,866	9,120	14,912	18,705
Long Term	3,340	3,480	5,352	6,408
Intermediate <sup>51</sup>	47,452	44,419	92,367	88,204
Long term <sup>49</sup>	<u>64,582</u>	<u>62,235</u>	<u>109,188</u>	<u>110,680</u>
Total Farm Liabilities	\$135,298	\$130,717	\$254,340	\$256,368
Nonfarm Liabilities <sup>50</sup>	<u>3,517</u>	<u>2,784</u>	<u>700</u>	<u>1,544</u>
Farm & Nonfarm Liabilities	\$138,815	\$133,501	\$255,040	\$257,912
Farm Net Worth (Equity Capital)	\$442,094	\$495,490	\$599,313	\$619,161
Farm & Nonfarm Net Worth	\$540,608	\$603,061	\$716,767	\$740,267
<b><u>FINANCIAL MEASURES</u></b>				
	<u>Less than 60 Cows</u>		<u>60 to 99 Cows</u>	
Percent Equity	79%		71%	
Debt/asset ratio-long term	0.19		0.26	
Debt/asset ratio-intermediate & current	0.23		0.33	
Debt/asset ratio-total	0.21		0.29	
Leverage ratio	0.26		0.41	
Current ratio	2.45		1.56	
Working capital as % of total expenses	22%		12%	
Accounts payable as % of total debt	6%		9%	
Long-term debt as % of total debt	48%		43%	
Cost of term debt (weighted average)	3.88%		4.43%	
Change in net worth with appreciation	\$53,396		\$19,848	
Total farm debt per cow	\$2,670		\$3,320	
Debt payments made per cow	\$523		\$722	
Debt payments as % of milk sales	16%		21%	
Amount available for debt service	\$21,081		\$32,292	
Cash flow coverage ratio for 2010	1.17		0.93	
Debt coverage ratio for 2010	1.50		1.16	

<sup>49</sup>Includes discounted lease payments.<sup>50</sup>Average of farms reporting nonfarm assets and liabilities for 2010.<sup>51</sup>Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 53. (cont'd)

**FARM FAMILY FINANCIAL SITUATION BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farms with:		200 to 399 Cows	
	100 to 199 Cows		Jan. 1	Dec. 31
<b>ASSETS</b>				
Farm cash, checking & savings	\$ 15,017	\$ 14,164	\$ 31,125	\$ 28,401
Accounts receivable	40,704	43,181	87,977	109,719
Prepaid expenses	0	0	1,973	2,073
Feed & supplies	122,237	133,773	252,926	307,931
Livestock <sup>52</sup>	299,735	303,723	594,730	617,467
Machinery & equipment <sup>52</sup>	324,571	332,856	488,262	504,521
Farm Credit stock	970	963	1,038	731
Other stock & certificates	30,867	34,642	61,015	65,576
Land & buildings <sup>52</sup>	<u>833,941</u>	<u>867,503</u>	<u>1,015,679</u>	<u>1,072,209</u>
Total Farm Assets	\$1,668,041	\$1,730,803	\$2,534,725	\$2,708,626
Nonfarm Assets <sup>53</sup>	\$ <u>161,226</u>	\$ <u>162,823</u>	\$ <u>577,485</u>	\$ <u>600,472</u>
Farm & Nonfarm Assets	\$1,829,266	\$1,893,626	\$3,112,210	\$3,309,098
<b>LIABILITIES (excluding deferred taxes)</b>				
Accounts payable	\$29,038	\$25,802	\$80,758	\$68,625
Operating debt	22,426	24,375	91,805	74,390
Short term	3,221	2,020	636	5,387
Advanced government receipt	447	568	0	0
Current Portion:				
Intermediate	33,006	15,710	53,194	62,361
Long Term	8,997	11,014	24,398	25,894
Intermediate <sup>54</sup>	173,130	173,718	334,342	327,806
Long term <sup>52</sup>	<u>168,631</u>	<u>184,865</u>	<u>349,188</u>	<u>394,091</u>
Total Farm Liabilities	\$438,896	\$438,071	\$934,320	\$958,555
Nonfarm Liabilities <sup>53</sup>	<u>12,891</u>	<u>13,116</u>	<u>9,861</u>	<u>7,004</u>
Farm & Nonfarm Liabilities	\$451,787	\$451,187	\$944,181	\$965,559
Farm Net Worth (Equity Capital)	\$1,229,145	\$1,292,732	\$1,600,405	\$1,750,072
Farm & Nonfarm Net Worth	\$1,377,480	\$1,442,439	\$2,168,029	\$2,343,539
<b>FINANCIAL MEASURES</b>				
	<u>100 to 199 Cows</u>		<u>200 to 399 Cows</u>	
Percent equity	75%		65%	
Debt/asset ratio-long term	0.21		0.37	
Debt/asset ratio-intermediate & current	0.29		0.34	
Debt/asset ratio-total	0.25		0.35	
Leverage ratio	0.34		0.55	
Current ratio	1.89		1.89	
Working capital as % of total expenses	18%		18%	
Accounts payable as % of total debt	6%		7%	
Long-term debt as % of total debt	42%		41%	
Cost of term debt (weighted average)	4.43%		4.00%	
Change in net worth with appreciation	\$63,587		\$149,667	
Total farm debt per cow	\$3,097		\$3,274	
Debt payments made per cow	\$654		\$546	
Debt payments as % of milk sales	18%		13%	
Amount available for debt service	\$62,251		\$118,223	
Cash flow coverage ratio for 2010	0.92		0.96	
Debt coverage ratio for 2010	1.27		1.82	

<sup>52</sup>Includes discounted lease payments.<sup>53</sup>Average of farms reporting nonfarm assets and liabilities for 2010.<sup>54</sup>Includes Farm Credit stock & discounted lease payments for cattle & machinery.



Table 53. (cont'd)

**FARM FAMILY FINANCIAL SITUATION BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farms with: 400 to 599 Cows		600 to 899 Cows	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<b><u>ASSETS</u></b>				
Farm cash, checking & savings	\$ 39,955	\$ 32,399	\$ 74,216	\$ 65,959
Accounts receivable	150,530	171,430	199,769	238,115
Prepaid expenses	2,036	1,476	2,136	3,113
Feed & supplies	353,566	424,297	654,960	750,003
Livestock <sup>55</sup>	989,038	1,042,309	1,640,454	1,710,460
Machinery & equipment <sup>55</sup>	671,175	710,036	1,156,695	1,190,593
Farm Credit stock	2080	2,200	2,061	1,995
Other stock & certificates	77,452	95,661	109,433	138,752
Land & buildings <sup>55</sup>	<u>1,612,882</u>	<u>1,650,631</u>	<u>2,525,893</u>	<u>2,693,269</u>
Total Farm Assets	\$3,898,714	\$4,130,439	\$6,365,616	\$6,792,258
Nonfarm Assets <sup>56</sup>	\$ <u>246,837</u>	\$ <u>250,417</u>	\$ <u>594,690</u>	\$ <u>600,230</u>
Farm & Nonfarm Assets	\$4,145,551	\$4,380,856	\$6,960,306	\$7,392,488
<b><u>LIABILITIES (excluding deferred taxes)</u></b>				
Accounts payable	\$ 92,622	\$72,920	\$119,029	\$75,950
Operating debt	98,733	62,211	137,656	80,114
Short term	5,715	9,617	6,747	2,213
Advanced government receipt	0	0	1,947	2,206
Current Portion:				
Intermediate	117,360	139,547	212,943	239,468
Long Term	36,659	40,956	61,797	71,942
Intermediate <sup>57</sup>	567,233	553,963	1,221,235	1,206,423
Long term <sup>55</sup>	<u>577,535</u>	<u>561,304</u>	<u>831,686</u>	<u>904,693</u>
Total Farm Liabilities	\$1,495,858	\$1,440,517	\$2,593,039	\$2,583,010
Nonfarm Liabilities <sup>56</sup>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Farm & Nonfarm Liabilities	\$1,495,858	\$1,440,517	\$2,593,039	\$2,583,010
Farm Net Worth (Equity Capital)	\$2,402,856	\$2,689,922	\$3,772,577	\$4,209,248
Farm & Nonfarm Net Worth	\$2,649,693	\$2,940,339	\$4,367,267	\$4,809,478
<b><u>FINANCIAL MEASURES</u></b>				
	<u>400 to 599 Cows</u>		<u>600 to 899 Cows</u>	
Percent equity	65%		62%	
Debt/asset ratio-long term	0.34		0.34	
Debt/asset ratio-intermediate & current	0.35		0.41	
Debt/asset ratio-total	0.35		0.38	
Leverage ratio	0.54		0.61	
Current ratio	1.94		2.24	
Working capital as % of total expenses	15%		18%	
Accounts payable as % of total debt	5%		3%	
Long-term debt as % of total debt	39%		35%	
Cost of term debt (weighted average)	4.36%		4.10%	
Change in net worth with appreciation	\$287,066		\$436,671	
Total farm debt per cow	\$2,872		\$3,427	
Debt payments made per cow	\$653		\$685	
Debt payments as % of milk sales	15%		15%	
Amount available for debt service	\$269,584		\$447,281	
Cash flow coverage ratio for 2010	1.06		1.05	
Debt coverage ratio for 2010	1.67		1.59	

<sup>55</sup>Includes discounted lease payments.<sup>56</sup>Average of farms reporting nonfarm assets and liabilities for 2010.<sup>57</sup>Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 53. (cont'd)

**FARM FAMILY FINANCIAL SITUATION BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farms with:	
	Jan. 1	Dec. 31
<b>ASSETS</b>		
Farm cash, checking & savings	\$ 98,746	\$ 124,037
Accounts receivable	421,492	520,006
Prepaid expenses	21,163	11,257
Feed & supplies	1,236,142	1,419,608
Livestock <sup>58</sup>	3,079,209	3,227,087
Machinery & equipment <sup>58</sup>	2,057,264	2,098,318
Farm Credit stock	1,506	1,477
Other stock & certificates	306,480	351,521
Land & buildings <sup>58</sup>	<u>5,275,066</u>	<u>5,618,153</u>
Total Farm Assets	\$12,497,069	\$13,371,464
Nonfarm Assets <sup>59</sup>	<u>\$ 302,643</u>	<u>\$ 326,572</u>
Farm & Nonfarm Assets	\$12,799,712	\$13,698,036
<b>LIABILITIES (excluding deferred taxes)</b>		
Accounts payable	\$230,668	\$174,646
Operating debt	394,778	328,114
Short term	19,303	22,786
Advanced government receipts	0	0
Current Portion:		
Intermediate	336,287	360,338
Long Term	148,637	154,580
Intermediate <sup>60</sup>	1,909,867	1,786,401
Long term <sup>58</sup>	<u>1,738,740</u>	<u>1,862,852</u>
Total Farm Liabilities	\$4,778,278	\$4,689,715
Nonfarm Liabilities <sup>59</sup>	<u>0</u>	<u>0</u>
Farm & Nonfarm Liabilities	\$4,778,278	\$4,689,715
Farm Net Worth (Equity Capital)	\$7,718,791	\$8,681,749
Farm & Nonfarm Net Worth	\$8,021,434	\$9,008,321
<b>FINANCIAL MEASURES</b>		
	<u>More than 900 Cows</u>	
Percent equity	65%	
Debt/asset ratio-long term	0.33	
Debt/asset ratio-intermediate & current	0.36	
Debt/asset ratio-total	0.35	
Leverage ratio	0.54	
Current ratio	1.99	
Working capital as % of total expenses	16%	
Accounts payable as % of total debt	4%	
Long-term debt as % of total debt	40%	
Cost of term debt (weighted average)	3.85%	
Change in net worth with appreciation	\$962,958	
Total farm debt per cow	\$3,202	
Debt payments made per cow	\$619	
Debt payments as % of milk sales	14%	
Amount available for debt service	\$1,038,316	
Cash flow coverage ratio for 2010	1.72	
Debt coverage ratio for 2010	2.48	

<sup>58</sup>Includes discounted lease payments.<sup>59</sup>Average of farms reporting nonfarm assets and liabilities for 2010.<sup>60</sup>Includes Farm Credit stock & discounted lease payments for cattle & machinery.

**Table 54.**

**SELECTED BUSINESS FACTORS BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farms with:	Less than 60 Cows	60 to 99 Cows	100 to 199 Cows	200 to 399 Cows
Number of farms		24	23	42	26
<u>Cropping Program Analysis</u>					
Total Tillable acres		156	206	410	579
Tillable acres rented <sup>61</sup>		70	74	191	273
Hay crop acres <sup>61</sup>		109	140	248	304
Corn silage acres <sup>61</sup>		21	36	86	177
Hay crop, tons DM/acre		2.3	2.6	2.6	3.4
Corn silage, tons/acre		17	17	18	19
Oats, bushels/acre		59	23	54	66
Forage DM per cow, tons		8.7	7.9	8.6	8.0
Tillable acres/cow		3.6	2.8	3.0	2.0
Fertilizer & lime expense/tillable acre		\$31.22	\$29.08	\$40.21	\$50.96
Total machinery costs		\$37,624	\$61,412	\$113,944	\$206,926
Machinery cost/tillable acre		\$223	\$286	\$271	\$351
<u>Dairy Analysis</u>					
Number of cows		48	76	139	290
Number of heifers		38	58	124	242
Milk sold, pounds		911,155	1,461,877	2,774,774	6,962,776
Milk sold/cow, pounds		19,166	19,147	19,898	24,039
Operating cost of producing milk/cwt.		\$13.45	\$15.01	\$13.89	\$13.90
Total cost of producing milk/cwt.		\$23.00	\$22.60	\$20.08	\$17.28
Price/cwt. milk sold		\$17.54	\$17.74	\$17.91	\$17.65
Purchased dairy feed/cow		\$1,020	\$1,244	\$1,062	\$1,370
Purchased dairy feed/cwt. milk		\$5.32	\$6.50	\$5.34	\$5.70
Purchased grain & concentrate as % of milk receipts		28%	34%	29%	30%
Purchased feed & crop expense/cwt. milk		\$6.37	\$7.41	\$6.58	\$6.54
Cull rate		29%	28%	30%	33%
<u>Capital Efficiency</u>					
Farm capital/worker		\$305,482	\$325,034	\$429,147	\$372,397
Farm capital/cow		\$12,659	\$11,324	\$12,187	\$9051
Farm capital/tillable acre owned		\$7,012	\$6,578	\$7,759	\$8,549
Real estate/cow		\$6,617	\$5,626	\$6,101	\$3,604
Machinery investment/cow		\$2,539	\$2,170	\$2,357	\$1,714
Asset turnover ratio		0.30	0.35	0.36	0.55
<u>Labor Efficiency</u>					
Worker equivalent		1.97	2.66	3.96	7.04
Operator/manager equivalent		1.23	1.43	1.65	1.79
Milk sold/worker, lbs.		462,320	550,613	701,143	988,914
Cows/worker		24	29	35	41
Labor cost/cow		\$1,196	\$1,009	\$811	\$775
Labor cost/tillable acre		\$365	\$374	\$276	\$388

<sup>61</sup>Average of all farms, not only those reporting data.

Table 54. (cont'd)

**SELECTED BUSINESS FACTORS BY HERD SIZE**  
**204 New York Dairy Farms, 2010**

Item	Farms with:	400 to 599 Cows	600 to 899 Cows	900 or More Cows
Number of farms		25	30	34
<u>Cropping Program Analysis</u>				
Total Tillable acres		1,168	1,450	2,586
Tillable acres rented <sup>62</sup>		716	792	1,186
Hay crop acres <sup>62</sup>		570	632	1,124
Corn silage acres <sup>62</sup>		376	516	1,027
Hay crop, tons DM/acre		3.1	3.7	3.9
Corn silage, tons/acre		18	20	20
Oats, bushels/acre		54	66	0
Forage DM per cow, tons		8.2	7.9	8.4
Tillable acres/cow		2.4	2.0	1.8
Fertilizer & lime exp./tillable acre		\$59.54	\$45.99	\$44.48
Total machinery costs		\$364,394	\$525,306	\$1,010,146
Machinery cost/tillable acre		\$312	\$362	\$380
<u>Dairy Analysis</u>				
Number of cows		490	740	1,440
Number of heifers		403	655	1,213
Milk sold, pounds		11,237,361	18,449,045	36,943,353
Milk sold/cow, pounds		22,956	24,921	25,649
Operating cost of producing milk/cwt.		\$13.95	\$14.16	\$13.48
Total cost of producing milk/cwt.		\$17.35	\$17.11	\$16.41
Price/cwt. milk sold		\$18.11	\$18.06	\$17.65
Purchased dairy feed/cow		\$1,230	\$1,333	\$1,370
Purchased dairy feed/cwt. milk		\$5.36	\$5.35	\$5.34
Purchased grain & concentrate as % of milk receipts		28%	28%	29%
Purchased feed & crop expense/cwt. milk		\$6.54	\$6.29	\$6.20
Cull rate		33%	34%	35%
<u>Capital Efficiency</u>				
Farm capital/worker		\$356,851	\$401,155	\$440,241
Farm capital/cow		\$8,201	\$8,887	\$8,980
Farm capital/tillable acre owned		\$8,877	\$9,998	\$9,237
Real estate/cow		\$3,333	\$3,525	\$3,782
Machinery investment/cow		\$1,411	\$1,585	\$1,443
Asset turnover ratio		0.60	0.59	0.59
<u>Labor Efficiency</u>				
Worker equivalent		11.25	16.40	29.38
Operator/manager equivalent		2.19	1.89	2.39
Milk sold/worker, lbs.		999,024	1,124,942	1,257,575
Cows/worker		44	45	49
Labor cost/cow		\$737	\$759	\$761
Labor cost/tillable acre		\$309	\$387	\$424

<sup>62</sup>Average of all farms, not only those reporting data.

## SUPPLEMENTAL INFORMATION

Comparisons of business performance by farms buying versus growing forages, types of housing and herd size, rotational grazers, milking frequency, same farms over 10 years, and dairy region are presented in this section. Farm receipts and expenses per cow and per hundredweight of milk sold for different levels of milk output and herd size groups, plus additional data, are included.

A word of caution to the reader on the interpretation of these data: It is the combination of resources and practices, and implementation of business management strategies by farmers that determine business performance. Examining one factor, while not holding all others constant, can lead to erroneous conclusions of cause and effect relationships. As an example, farms milking 3x per day showed higher profitability. Is it exclusively higher milking rates or is it that farms milking more frequently would have higher profitability per cow if they milked less often? Keep this distinction in mind when reviewing the following data.

### **Comparison for Farms That Buy All Feed Versus Farms That Grow Forages**

Farms specializing in only milk production are a growing trend in New York. In 2010, 12 participating farms purchased the majority of their feed, including all forages. On average, only three acres of forage were harvested by these farms. Table 55 highlights the income and expenses for these 12 farms compared to the income and expenses for 130 farms of similar size that grew their forages. Table 56 compares selected business factors for the two groups of farms. In 2010, the 12 farms buying forages had, on average, higher labor and management incomes per operator, rates of return on equity capital, and rates of return on all capital than the similar size farms growing forages. While pounds of milk sold per cow were higher, milk receipts per cow and per hundredweight were lower, and operating costs of producing milk were \$0.52 per hundredweight higher than farms growing forages.

### **Comparison by Type of Barn and Herd Size**

When analyzing a dairy farm business by comparing it to a group of farms, it is important that the group of farms have as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the summary have been divided into those with freestall and those with conventional housing. Conventional housing includes stanchion and tiestall barns. Within each group, is a further classification by size of the dairy herd. Table 57 on page 65 includes the average values for the resulting five groups of dairy farms. The average size in the five groups ranges from 47 cows on the small conventional farms to 952 cows on the largest freestall farms. The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow; and, in 2010, they had the highest returns to labor, management and capital.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 66-70. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance. Each column of the farm business chart is independent of the others.

### **Intensive Grazing Farms vs. Non-Grazing Farms**

In 2010, 27 of the DFBS cooperators practiced intensive grazing. Intensive grazing means the dairy herd was on pasture for three months or more and was moved to a new paddock every third day or less and at least 30 percent of the forage was from pasture. The farms using intensive grazing are compared with a control group of non-grazing farms in Table 63. The control group is a selection of non-grazing dairy farms of similar size. In 2010, average profitability was higher on intensive grazing farms. Operating costs of producing milk were \$1.22 per hundredweight lower while total costs were the same as the costs of production on the control farms. A publication containing detailed information on New York farms using intensive grazing is available from the Dyson School of Applied Economics and Management. An order form is included on the department website: <http://www.dyson.cornell.edu/outreach/order.php> or contact Linda Putnam (e-mail: [ldp2@cornell.edu](mailto:ldp2@cornell.edu), phone: 607-255-8429).

### **Comparison of Data, Same Farms, 2001 - 2010**

Follow ten years of growth, change and progress made by 94 New York DFBS farms in Table 64, pages 72 and 73. Milk receipts per hundredweight are higher by only \$0.90 in 2010 when compared to 2001. Profitability in 2010 is higher than most years in the ten-year period. Care should be exercised in using these data to indicate change in the dairy industry since the composition of the sample of farms is different from the state as a whole, and there is considerable year-to-year variability in milk prices.

### **Receipts and Expenses per Hundredweight of Milk and Per Cow**

Average accrual receipts and expenses per cow and per hundredweight of milk sold are listed for 46 dairy farms selling less than 19,000 pounds of milk per cow, 59 farms with 19,000 to 22,999 pounds of milk sold per cow, and 99 dairy farms selling 23,000 pounds and more in Table 65 on page 74. Table 66 on page 75 provides the list of average accrual receipts and expenses for 47 farms averaging less than 100 cows per farm, 42 farms with 100 to 200 cows and 115 farms with 200 cows or more.

These data are very useful for forward planning or budgeting when a farmer or planner does not have complete and accurate data from his or her own farm business. It is important to use the costs and returns per unit of output that most closely fit the level of production and herd size that is included in the plan. For example, an expansion budget for a 20,000 pound herd should include higher feed costs per cow than a budget for an 18,000 pound herd. Herds with more than 180 cows must budget for higher hired labor costs per cow than smaller herds. These data should also be adjusted to the operating characteristics of the farm being budgeted. Most farms are not average. It is always better to have data on the specific farm being budgeted.

### **Comparison of Dairy Farm Business Data by Region**

Average farm business summary data from five regions of the State are compared in Tables 67 and 68. The Western and Central Plain Region averaged the highest profitability. The Northern New York Region averaged the largest average farm size; however, Western and Central Plain Region had the highest average rate of milk production. Dairy farmers in the Western and Central Plain Region have increased milk production 32.7 percent from 2000-2010 and they produced milk for an average total cost of \$16.83 per hundredweight in 2010. Total milk production has declined 3.7 percent from 2000-2010 in the Western and Central Plateau Region (Figure 2). However, this is the region with the highest return per hundredweight to labor, management and capital with \$3.53. Central Valleys Region had the second highest return per hundredweight to labor, management and capital with \$2.92.

### **Comparison of Farms by Milking Frequency**

Forty-one percent of the 204 DFBS farms utilized three times per day (3X) milking in 2010. Most of the remaining farms milked twice per day (2X). Two years of selected average business and cost of milk production factors from the two milking frequency groups are compared in Table 69.

In 2010, the 3X farms averaged 51 more cows per farm, sold more milk per cow, showed an average \$846,024 increase in net farm income, and a decrease in total cost of producing milk by \$0.06 compared to the 3X farm averages for 2009. The 2X farms increased milk output per cow one percent, average net farm income increased by \$157,415, and total production costs increased by \$0.28 per hundredweight in 2010 compared to 2009.

The 3X farms averaged 25.6 percent more milk per cow and 44.9 percent additional milk per worker in 2010 compared with the 2X farms. Similar differences were found in 2009. In 2010, the average total cost of producing milk was 11.3 percent lower on 3X farms than on 2X dairies. On the average, farmers milking 3X sold more milk per cow and per worker, produced milk at lower costs per hundredweight and received higher returns for their labor, management and capital than the average dairy farmer milking 2X. However, milking frequency was not the only, and probably not the most important, factor that contributed to financial success on these dairy farms. Comparison of herd size, crop yields, labor and capital efficiency indicates there are other important management differences contributing to higher profits.

### **Other Comparisons**

Twelve dairy renter farms (Table 70) were smaller, on average, and averaged lower labor and management incomes than the average for 204 owned dairy farms. A forthcoming publication contains detailed information on New York dairy renters (see <http://www.dyson.cornell.edu/outreach/order.php>). Data for the top 10 percent of farms by rate of return on all capital without appreciation are presented in Table 71. Additional data for the top 10 percent of farms are presented in many of the first 46 tables of this publication. Summary data for the 204 specialized dairy farms are presented in Table 72.

Table 55.

**INCOME & EXPENSE COMPARISON FOR  
FARMS BUYING MAJORITY OF FORAGES VERSUS SIMILAR SIZE FARMS GROWING FORAGES  
New York State Dairy Farms, 2010**

Item	12 Farms Buying Majority of Forages		130 Similar Size Farms Growing Forages	
Number of cows per farm	326		324	
Pounds of milk sold	7,879,872		7,643,657	
<u>Income</u>	<u>Per Cow</u>	<u>Per Cwt.</u>	<u>Per Cow</u>	<u>Per Cwt.</u>
Milk sold	\$4,172	\$17.26	\$4,239	\$17.94
Dairy cattle	327	1.35	277	1.17
Dairy calves	57	0.23	31	0.13
Other livestock	1	0.00	17	0.07
Crops	7	0.03	130	0.55
Miscellaneous	<u>37</u>	<u>0.15</u>	<u>111</u>	<u>0.47</u>
Total Accrual Receipts	\$4,602	\$19.04	\$4,804	\$20.34
<u>Expenses</u>				
Hired labor	\$ 429	\$ 1.77	\$ 592	\$ 2.51
Dairy grain & concentrate	1,299	5.38	1,202	5.09
Dairy roughage	795	3.29	53	0.23
Nondairy	2	0.01	1	0.00
Professional nutritional services	0	0.00	1	0.00
Machinery hire, rent/lease	51	0.21	113	0.48
Machinery repairs/vehicle expense.	118	0.49	204	0.86
Fuel, oil & grease	75	0.31	167	0.71
Replacement livestock	101	0.42	10	0.04
Breeding	25	0.10	54	0.23
Veterinary & medicine	118	0.49	146	0.62
Milk marketing	179	0.74	218	0.92
Bedding	65	0.27	86	0.36
Milking supplies	97	0.40	93	0.39
Cattle lease/rent	6	0.02	2	0.01
Custom boarding	32	0.13	73	0.31
bST expense	51	0.21	35	0.15
Livestock professional fees	8	0.03	14	0.06
Other livestock expenses	7	0.03	21	0.09
Fertilizer & lime	0	0.00	104	0.44
Seeds & plants	1	0.00	88	0.37
Spray, other crop expenses	1	0.00	49	0.21
Crop professional fees	0	0.00	7	0.03
Land/bldg/fence repair	24	0.10	56	0.24
Taxes	19	0.08	62	0.26
Rent & lease	86	0.36	59	0.25
Insurance	22	0.09	45	0.19
Utilities	105	0.43	109	0.46
Interest paid	133	0.55	131	0.55
Other professional fees	26	0.11	22	0.09
Miscellaneous	<u>22</u>	<u>0.09</u>	<u>29</u>	<u>0.12</u>
Total Operating Expenses	\$3,900	\$16.13	\$3,845	\$16.27
Expansion livestock	32	0.13	22	0.09
Extraordinary expense	0	0.00	3	0.01
Machinery depreciation	91	0.38	186	0.79
Building depreciation	<u>106</u>	<u>0.44</u>	<u>115</u>	<u>0.49</u>
Total Accrual Expenses	\$4,129	\$17.08	\$4,171	\$17.66
Net Farm Income (without appreciation)	\$ 473	\$ 1.96	\$ 633	\$ 2.68

Table 56.

**SELECTED BUSINESS FACTORS FOR FARMS BUYING MAJORITY OF FORAGES  
VERSUS SIMILAR SIZE FARMS GROWING FORAGES  
New York Dairy Farms, 2010**

Selected Factors	12 Farms Buying Majority of Forages	130 Similar Size Farms Growing Forages
<u>Size of Business</u>		
Average number of cows	326	324
Average number of heifers	225	282
Milk sold, pounds	7,879,872	7,643,657
Worker equivalent	6.18	7.97
Total tillable acres	54	743
Forage acres harvested	3	612
<u>Rates of Production</u>		
Milk sold per cow, lbs.	24,171	23,624
Hay DM per acre, tons	0.0	3.2
Corn silage per acre, tons	0.0	19.0
<u>Labor Efficiency &amp; Costs</u>		
Cows per worker	53	41
Milk sold/worker, pounds	1,274,888	958,853
Hired labor cost/cwt.	\$1.77	\$2.51
Hired labor cost/worker	\$32,636	\$32,872
Hired labor cost as % of milk sales	10.3%	14.0%
<u>Cost Control</u>		
Grain & concentrate purchased as % of milk sales	34%	29%
Grain & concentrate per cwt. milk	\$5.38	\$5.09
Dairy feed & crop expense per cwt. milk	\$8.67	\$6.36
Labor & machinery costs/cow	\$966	\$1,545
Total farm operating costs per cwt. sold	\$16.13	\$16.27
Interest costs per cwt. milk	\$0.55	\$0.55
Milk marketing costs per cwt. milk sold	\$0.74	\$0.92
Operating cost of producing cwt. of milk	\$14.49	\$13.97
<u>Capital Efficiency</u> (average for the year)		
Farm capital per cow	\$5,106	\$9,402
Machinery & equipment per cow	\$538	\$1,717
Asset turnover ratio	0.90	0.53
<u>Income Generation</u>		
Gross milk sales per cow	\$4,172	\$4,239
Gross milk sales per cwt.	\$17.26	\$17.94
Net milk sales per cwt.	\$16.52	\$17.02
Dairy cattle sales per cow	\$327	\$277
Dairy calf sales per cow	\$57	\$31
<u>Profitability</u>		
Net farm income without appreciation	\$154,138	\$204,817
Net farm income with appreciation	\$153,886	\$272,000
Labor & management income per operator/manager	\$73,398	\$56,675
Rate of return on equity capital without appreciation	13.0%	6.0%
Rate of return on all capital without appreciation	7.9%	5.3%
<u>Cash flow</u>		
Principal & interest payments per cow, 2010	\$621	\$638
Net cash flow	\$204,950	\$250,629
<u>Financial Summary</u>		
Farm net worth, end year	\$732,440	\$2,083,512
Farm net worth change from last year, percent	18.8%	10.1%
Debt to asset ratio	0.57	0.34
Farm debt per cow	\$2,996	\$3,180



Table 57.

**SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE  
191 New York Dairy Farms, 2010**

Item	Farms with:	Conventional		Freestall		
		<60 Cows	>=60 Cows	<=200 Cows	200-400 Cows	>=400 Cows
Number of farms		21	20	40	24	86
<u>Cropping Program Analysis</u>						
Total Tillable acres		168	306	329	578	1,838
Tillable acres rented <sup>63</sup>		78	133	148	274	941
Hay crop acres <sup>63</sup>		119	206	196	302	815
Corn silage acres <sup>63</sup>		22	54	73	171	695
Hay crop, tons DM/acre		2.3	2.3	2.7	3.4	3.7
Corn silage, tons/acre		16.6	16.6	18.0	19.4	19.8
Oats, bushels/acre		59	72	38	66	61
Forage DM per cow, tons		8.5	8.5	8.5	8.0	8.4
Tillable acres/cow		3.6	3.4	2.9	2.1	2.0
Fertilizer & lime expense/tillable acre		\$31.42	\$32.28	\$42.13	\$51.52	\$45.28
Total machinery costs		\$37,544	\$76,399	\$106,885	\$202,067	\$677,234
Machinery cost/tillable acre		\$224	\$250	\$294	\$343	\$365
<u>Dairy Analysis</u>						
Number of cows		47	91	121	287	952
Number of heifers		37	80	103	240	814
Milk sold, lbs.		888,253	1,734,049	2,468,402	6,817,365	24,100,315
Milk sold/cow, lbs.		18,803	18,972	20,400	23,771	25,314
Operating cost of producing milk/cwt.		\$12.75	\$14.82	\$13.98	\$13.75	\$13.74
Total cost of producing milk/cwt.		\$22.22	\$22.25	\$20.58	\$17.20	\$16.73
Price/cwt. milk sold		\$17.43	\$17.78	\$17.93	\$17.61	\$17.81
Purchased dairy feed/cow		\$911	\$1,101	\$1,151	\$1,347	\$1,353
Purchased dairy feed/cwt. milk		\$4.85	\$5.80	\$5.64	\$5.67	\$5.34
Purchased grain & concentrate as % of milk receipts		27%	321%	31%	30%	28%
Purchased feed & crop expense/cwt. milk		\$5.97	\$6.92	\$6.85	\$6.51	\$6.26
<u>Capital Efficiency</u>						
Farm capital/worker		\$307,030	\$390,183	\$413,623	\$376,921	\$414,620
Farm capital/cow		\$12,414	\$13,148	\$12,101	\$8,924	\$8,884
Farm capital/tillable acre owned		\$6,516	\$6,951	\$8,059	\$8,419	\$9,430
Real estate/cow		\$6,433	\$6,712	\$6,068	\$3,541	\$3,653
Machinery investment/cow		\$2,551	\$2,716	\$2,240	\$1,656	\$1,492
Asset turnover ratio		0.30	0.30	0.38	0.55	0.59
<u>Labor Efficiency</u>						
Worker equivalent		1.91	3.08	3.54	6.79	20.40
Operator/manager equivalent		1.15	1.49	1.68	1.81	2.20
Milk sold/worker, lbs.		465,054	563,155	697,946	1,004,277	1,181,629
Cows/worker		25	30	34	42	47
Labor cost/cow		\$1,169	\$990	\$853	\$764	\$765
Labor cost/tillable acre		\$329	\$296	\$313	\$379	\$396
<u>Profitability &amp; Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$30,230	\$23,315	\$56,065	\$193,822	\$660,267
Labor & management income/operator		\$-4,757	\$-20,590	\$-3,142	\$60,275	\$185,017
Rate return on all capital with appreciation		-2.7%	-0.7%	3.4%	7.6%	9.5%
Farm debt/cow		\$2,191	\$2,938	\$3,228	\$3,136	\$3,230
Percent equity		83%	78%	73%	66%	64%

<sup>63</sup>Average of all farms, not only those reporting data.

Table 58.

**FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS**  
**21 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2010**

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of 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
2.92	58	1,276,649	23,771	3.5	29	34	758,563
2.43	58	1,172,320	22,491	3.3	27	31	661,782
2.12	54	1,077,961	21,336	3.1	21	31	639,207
2.04	52	1,025,694	21,045	2.3	19	29	535,368
2.00	48	978,780	20,294	2.1	18	27	477,429
-----							
1.71	47	947,012	19,624	2.0	17	26	435,784
1.61	45	804,192	17,800	1.9	16	23	416,288
1.58	43	759,890	16,273	1.8	15	21	378,501
1.54	42	664,765	14,133	1.8	14	20	340,272
1.42	35	412,933	11,421	1.4	7	18	250,944
-----							
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		
\$301	14%	\$472	\$1,342	\$474	\$3.57		
756	20	557	1,658	861	4.80		
815	24	642	1,777	1,032	5.42		
838	27	734	1,841	1,091	5.98		
866	28	781	1,984	1,122	6.09		
-----							
908	30	821	2,072	1,167	6.29		
989	30	859	2,131	1,237	6.35		
1,087	31	949	2,194	1,314	6.45		
1,135	32	1,036	2,402	1,400	6.62		
1,271	38	1,322	2,746	1,544	7.97		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$4,269	\$9.56	\$16.90	\$71,165	\$1,443	\$44,228	\$506,688	
3,982	10.00	19.12	64,502	1,278	30,390	39,894	
3,699	11.72	20.35	58,785	1,045	19,179	30,817	
3,564	12.53	20.45	40,083	842	11,493	25,658	
3,472	12.81	21.25	36,154	768	5,000	18,301	
-----							
3,349	13.30	23.35	33,634	715	-2,226	12,601	
3,159	13.90	25.09	27,553	597	-12,694	9,584	
3,000	14.74	26.25	7,004	169	-20,472	5,291	
2,440	16.10	28.25	1,516	19	-33,448	4,230	
1,932	17.93	37.23	-15,321	-330	-63,685	-26,137	

Table 59.

**FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS**  
**20 Conventional Stall Dairy Farms with 60 or More Cows, New York, 2010**

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of 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
5.00	152	2,762,000	27,347	3.9	27	51	912,168
3.88	130	2,283,563	23,788	3.4	25	39	738,186
3.67	111	2,184,928	22,497	3.1	23	34	671,856
3.57	97	2,006,849	20,993	2.9	21	32	644,946
3.12	83	1,645,642	20,666	2.7	20	31	605,805
-----							
3.00	76	1,564,481	19,037	2.5	19	29	546,554
2.54	70	1,455,059	18,007	2.4	17	27	529,442
2.38	69	1,308,703	16,855	1.8	14	26	519,824
2.04	66	1,195,825	14,104	1.5	12	24	376,587
1.61	62	933,444	11,252	1.5	9	20	330,702
-----							
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		
\$283	13%	\$432	\$1,083	\$406	\$3.52		
582	18	532	1,390	1,055	5.28		
955	26	599	1,606	1,226	6.18		
1,077	28	705	1,713	1,328	6.47		
1,186	30	824	1,823	1,358	6.68		
-----							
1,230	33	913	1,844	1,425	6.79		
1,232	36	946	1,936	1,513	7.02		
1,347	38	993	2,105	1,623	7.61		
1,419	43	1,004	2,372	1,675	9.17		
1,520	54	1,296	2,436	1,838	10.90		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$4,605	\$10.78	\$18.22	\$100,004	\$1,046	\$32,625	\$137,440	
4,259	12.18	19.09	77,881	787	11,561	67,408	
3,975	12.53	19.53	65,603	747	3,707	39,427	
3,773	13.46	19.96	49,788	676	-2,385	22,879	
3,566	13.79	20.80	39,815	575	-4,510	14,081	
-----							
3,476	14.37	23.18	26,484	295	-10,470	5,223	
3,282	15.73	23.93	13,953	197	-25,378	-4,773	
3,063	16.23	25.55	-8,795	-57	-45,760	-24,297	
2,561	19.62	26.83	-54,972	-432	-82,510	-48,332	
2,034	22.03	28.62	-76,605	-936	-123,467	-91,995	

Table 60.

**FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS**  
**40 Freestall Barn Dairy Farms with Less than 200 Cows, New York, 2010**

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of 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
6.07	190	4,725,179	26,405	5.3	28	50	1,055,653
4.90	175	3,804,032	23,423	4.0	22	41	876,946
4.67	157	3,167,510	22,319	3.9	21	38	804,418
3.97	136	2,783,554	21,252	3.4	20	37	754,088
3.36	121	2,516,572	20,843	2.8	19	36	725,369
-----							
2.94	110	2,027,717	19,832	2.5	18	35	647,466
2.77	103	1,849,636	18,375	2.1	17	33	630,221
2.56	89	1,524,976	17,061	1.9	16	32	566,899
2.31	76	1,282,058	16,035	1.8	14	28	484,425
1.84	54	1,002,784	13,842	1.2	13	22	388,365
-----							
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		
\$772	19%	\$445	\$1,144	\$967	\$5.16		
809	23	572	1,332	1,087	5.76		
852	26	640	1,410	1,170	5.87		
923	29	693	1,498	1,243	6.16		
1,026	31	755	1,574	1,306	6.51		
-----							
1,113	32	806	1,636	1,416	7.17		
1,196	34	851	1,840	1,492	7.69		
1,244	36	901	1,935	1,578	8.33		
1,370	38	1,095	2,018	1,819	9.35		
1,560	43	1,267	2,416	2,214	10.72		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$4,560	\$9.59	\$15.66	\$209,917	\$1,316	\$76,728	\$379,149	
4,191	10.78	17.38	133,589	965	35,870	153,977	
4,068	12.15	19.05	107,287	822	18,172	79,789	
3,885	13.06	20.34	73,133	612	9,357	55,325	
3,660	13.59	21.20	51,504	480	-197	28,243	
-----							
3,448	14.41	21.78	39,876	372	-13,907	15,246	
3,305	15.81	22.42	25,633	233	-24,441	1,334	
3,111	16.62	23.36	-1,505	-6	-36,815	-9,593	
2,935	17.80	24.51	-15,693	-207	-52,884	-19,044	
2,560	20.99	31.86	-63,084	-898	-132,540	-40,442	

Table 61.

**FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS**  
**24 Freestall Barn Dairy Farms with 200-400 Cows, New York, 2010**

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
11.07	394	10,108,286	28,054	5.3	26	59	1,417,815
9.38	373	9,735,132	26,132	4.5	24	52	1,280,350
7.95	354	9,003,062	25,346	4.3	22	50	1,068,038
7.10	316	7,647,603	25,087	4.2	22	49	1,056,410
6.63	302	7,512,291	24,614	4.0	20	46	1,039,255
-----							
6.50	289	6,991,047	23,694	3.5	19	44	1,002,528
6.08	277	6,074,655	23,236	3.0	18	42	975,350
5.85	235	5,386,844	22,589	2.9	17	41	955,482
5.54	228	5,057,669	21,233	2.3	16	36	899,635
4.42	204	4,021,473	18,648	2.2	14	31	699,125
-----							
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		
\$790	21%	\$409	\$1,007	\$1,041	\$4.60		
1,050	25	591	1,195	1,380	5.58		
1,157	27	647	1,362	1,444	5.95		
1,187	28	668	1,495	1,476	6.32		
1,254	30	728	1,523	1,516	6.65		
-----							
1,301	31	732	1,548	1,589	6.94		
1,333	34	780	1,640	1,687	7.04		
1,385	35	834	1,675	1,760	7.56		
1,490	35	896	1,707	1,812	8.25		
1,534	38	1,024	1,939	2,153	9.22		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$5,159	\$9.92	\$14.83	\$511,541	\$1,383	\$326,433	\$567,942	
4,735	11.44	15.66	384,065	1,282	149,963	315,496	
4,456	12.83	16.29	313,777	1,016	107,639	230,283	
4,341	13.81	17.21	241,857	865	102,212	191,157	
4,274	13.98	17.47	216,179	819	60,052	164,993	
-----							
4,236	14.34	17.73	170,820	764	47,743	116,270	
4,101	14.82	18.03	160,186	575	35,858	88,118	
3,927	15.44	18.75	126,994	437	25,106	76,875	
3,745	16.89	19.79	65,511	221	2,263	56,182	
3,119	18.38	21.34	-27,605	-130	-70,032	-54,552	

Table 62.

**FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS**  
**86 Freestall Barn Dairy Farms with 400 or More Cows, New York, 2010**

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- Alent	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
43.74	2,284	59,966,661	28,811	6.8	27	65	1,694,744
29.83	1,413	36,099,171	27,096	5.0	23	55	1,363,265
25.29	1,161	29,786,059	26,606	4.4	22	51	1,295,414
22.62	1,031	25,353,444	26,272	4.1	21	49	1,227,454
19.52	874	22,600,037	25,799	3.8	20	48	1,163,775
-----							
17.31	757	19,211,437	25,199	3.6	19	45	1,136,260
15.73	681	17,442,545	24,636	3.4	18	43	1,074,506
13.61	599	14,392,855	23,800	3.1	18	41	1,033,424
11.73	513	12,150,541	22,780	2.7	17	38	972,226
9.01	439	10,089,736	20,339	1.8	14	34	790,652
-----							
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		
\$893	21%	\$509	\$1,158	\$1,161	\$4.91		
1,061	24	597	1,312	1,357	5.60		
1,150	26	641	1,387	1,452	5.92		
1,230	27	682	1,450	1,526	6.12		
1,275	29	708	1,499	1,579	6.31		
-----							
1,320	29	740	1,536	1,632	6.48		
1,369	30	771	1,599	1,694	6.66		
1,426	32	811	1,625	1,748	6.89		
1,472	33	900	1,701	1,839	7.15		
1,604	36	1,000	1,834	1,945	7.66		
-----							
Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$5,197	\$11.22	\$14.46	\$2,234,741	\$1,394	\$859,013	\$2,328,601	
4,890	12.11	15.38	1,201,729	1,164	458,433	1,140,254	
4,760	12.70	15.93	955,047	953	328,702	770,457	
4,673	13.28	16.53	664,495	815	208,706	624,084	
4,570	13.91	16.94	538,211	691	147,774	549,585	
-----							
4,477	14.27	17.42	454,927	616	121,212	421,766	
4,376	14.73	17.66	375,934	505	81,022	334,082	
4,212	15.10	18.09	291,223	392	47,354	244,836	
4,023	15.85	18.91	191,318	275	24,018	115,061	
3,731	17.15	20.06	-36,631	-8	-109,008	-212,634	

Table 63.

**INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS**  
**New York State Dairy Farms, 2010**

Item	All Intensive Grazing Farms <sup>64</sup>	Non-Grazing Farms <sup>65</sup>
Number of farms	27	72
<b><u>Business Size &amp; Production</u></b>		
Number of cows	134	138
Number of heifers	100	117
Milk sold, pounds	2,048,302	2,989,361
Milk sold per cow, pounds	15,231	21,697
Milk plant test, % butterfat <sup>5</sup>	4.0%	3.7%
Cull rate	21%	33%
Tillable acres, total	299	366
Hay crop, tons DM per acre	2.2	2.8
Corn silage, tons per acre	19.7	18.7
Forage dry matter per cow, tons <sup>6</sup>	4.5	8.8
<b><u>Labor &amp; Capital Efficiency</u></b>		
Worker equivalent	2.97	3.97
Milk sold per worker, pounds	689,664	752,514
Cows per worker	45	35
Farm capital per worker	\$376,550	\$383,792
Farm capital per cow	\$8,316	\$11,059
Farm capital per cwt. milk	\$39	\$36
Machinery and equipment per cow	\$1,436	\$2,154
<b><u>Milk Production Costs &amp; Returns</u></b>		
Selected costs per cwt.:		
Hired labor	\$1.62	\$1.88
Grain & concentrate	\$4.87	\$5.25
Purchased roughage	\$0.80	\$0.44
Replacements purchased	\$0.03	\$0.11
Vet & medicine	\$0.39	\$0.57
Milk marketing	\$1.05	\$0.91
Other dairy expenses	\$1.37	\$1.46
Operating cost of producing milk per cwt.	\$12.73	\$13.95
Total labor cost per cwt. (hired, family & operator)	\$4.04	\$3.99
Owner and operator resources per cwt.	\$4.20	\$3.85
Total cost of producing milk per cwt.	\$19.29	\$19.29
Average farm price per cwt.	\$17.39	\$16.74
<b><u>Related Cost Factors</u></b>		
Hired labor/cow	\$246	\$407
Total labor/cow	\$616	\$866
Purchased dairy feed/cow	\$865	\$1,235
Purchased grain & concentrate as % of milk receipts	30%	30%
Veterinary & medicine/cow	\$59	\$123
Machinery costs/cow	\$590	\$791
Feed & crop expenses/cwt.	\$6.82	\$6.73
<b><u>Profitability Analysis</u></b>		
Net farm income (with appreciation)	\$103,591	\$99,146
Net farm income (without appreciation)	\$77,240	\$71,665
Net farm income per cow (without appreciation)	\$574	\$520
Net farm income per cwt. (without appreciation)	\$3.77	\$2.40
Labor & management income per operator	\$22,765	\$7,382
Labor & management income per operator per cow	\$169	\$53
Rates of return on:		
Equity capital with appreciation	6.0%	3.0%
All capital with appreciation	5.6%	3.4%

<sup>64</sup>Farms grazing at least three months of year, changing paddock at least every three days, forage from pasture at least 30 percent, and no organic farms.

<sup>65</sup>Farms with similar herd size as the 27 rotational grazing farms.

<sup>66</sup>Average of farms reporting this data.

<sup>67</sup>Average of farms that grow forages.

**Table 64.**

**COMPARISON OF FARM BUSINESS SUMMARY DATA**  
**Same 94 New York Dairy Farms, 2001 -- 2010**

Selected Factors	2001	2002	2003	2004
Milk receipts per cwt. milk	\$16.02	\$12.99	\$13.29	\$16.77
<u>Size of Business</u>				
Average number of cows	347	368	385	409
Average number of heifers	256	284	296	307
Milk sold, cwt.	78,955	85,538	89,102	93,219
Worker equivalent	8.30	8.70	9.20	9.62
Total tillable acres	707	747	787	834
<u>Rates of Production</u>				
Milk sold per cow, lbs.	22,772	23,228	23,122	22,795
Hay DM per acre, tons	3.1	3.3	3.4	3.4
Corn silage per acre, tons	17	15	18	18
<u>Labor Efficiency</u>				
Cows per worker	42	42	42	43
Milk sold per worker, lbs.	951,266	983,190	968,502	969,008
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	25%	29%	31%	27%
Dairy feed & crop expense per cwt. milk	\$4.95	\$4.75	\$4.98	\$5.61
Operating cost of producing cwt. milk	\$11.93	\$10.94	\$11.34	\$12.38
Total cost of producing cwt. milk	\$15.00	\$14.03	\$14.31	\$15.47
Hired labor cost per cwt.	\$2.52	\$2.53	\$2.58	\$2.71
Interest paid per cwt.	\$0.76	\$0.56	\$0.53	\$0.52
Labor & machinery costs per cow	\$1,279	\$1,257	\$1,256	\$1,326
Replacement livestock expense	\$13,297	\$12,286	\$12,618	\$18,722
Expansion livestock expense	\$24,022	\$23,172	\$20,035	\$28,663
<u>Capital Efficiency</u>				
Farm capital per cow	\$6,592	\$6,724	\$6,744	\$6,913
Machinery & equipment per cow	\$1,204	\$1,230	\$1,192	\$1,199
Real estate per cow	\$2,523	\$2,543	\$2,615	\$2,654
Livestock investment per cow	\$1,694	\$1,798	\$1,818	\$1,857
Asset turnover ratio	0.67	0.56	0.56	0.68
<u>Profitability</u>				
Net farm income without appreciation	\$220,038	\$53,510	\$55,728	\$278,188
Net farm income with appreciation	\$330,621	\$121,598	\$128,281	\$391,494
Labor & management income per operator/manager	\$86,906	\$-13,592	\$-15,363	\$117,465
Rate return on:				
Equity capital with appreciation	19.2%	3.4%	3.7%	19.0%
All capital with appreciation	13.9%	4.0%	4.0%	13.0%
All capital without appreciation	9.1%	1.2%	1.2%	8.9%
<u>Financial Summary, End Year</u>				
Farm net worth	\$1,460,576	\$1,464,111	\$1,522,309	\$1,814,895
Change in net worth with appreciation	\$225,021	\$1,339	\$52,270	\$289,581
Debt to asset ratio	0.40	0.42	0.43	0.39
Farm debt per cow	\$2,685	\$2,798	\$2,934	\$2,780



Table 64. (continued)

**COMPARISON OF FARM BUSINESS SUMMARY DATA**  
**Same 94 New York Dairy Farms, 2001 -- 2010**

2005	2006	2007	2008	2009	2010
\$16.04	\$13.85	\$20.41	\$19.35	\$13.93	\$16.92
424	443	463	475	496	521
333	353	370	393	416	440
100,308	104,671	110,519	116,034	121,688	128,842
9.99	10.21	10.68	11.05	11.48	11.73
855	876	935	977	1,013	1,048
23,641	23,636	23,853	24,434	24,533	24,738
3.4	3.4	3.1	3.6	3.4	3.6
20	19	19	20	19	19
42	43	43	43	43	44
1,004,084	1,025,180	1,034,822	1,050,079	1,060,004	1,098,397
26%	29%	24%	31%	38%	29%
\$5.12	\$5.04	\$6.11	\$7.30	\$6.54	\$6.35
\$12.09	\$12.11	\$13.83	\$15.40	\$13.86	\$14.10
\$15.29	\$15.23	\$17.00	\$18.80	\$17.12	\$17.31
\$2.63	\$2.65	\$2.74	\$2.88	\$2.74	\$2.67
\$0.62	\$0.75	\$0.76	\$0.56	\$0.54	\$0.57
\$1,377	\$1,372	\$1,484	\$1,651	\$1,469	\$1,502
\$16,862	\$9,422	\$12,845	\$15,237	\$7,983	\$9,562
\$15,776	\$20,576	\$9,612	\$27,076	\$17,792	\$6,250
\$7,458	\$7,756	\$8,175	\$8,943	\$8,969	\$8,884
\$1,309	\$1,363	\$1,417	\$1,588	\$1,643	\$1,604
\$2,793	\$2,948	\$3,063	\$3,314	\$3,453	\$3,497
\$2,013	\$2,113	\$2,225	\$2,331	\$2,269	\$2,196
0.64	0.53	0.71	0.63	0.46	0.58
\$250,698	\$42,880	\$584,147	\$293,953	\$-150,118	\$313,383
\$414,780	\$151,840	\$750,504	\$377,277	\$-106,698	\$431,868
\$88,032	\$-41,852	\$267,980	\$85,468	\$-159,868	\$92,627
17.1%	3.3%	27.1%	10.2%	-7.4%	11.6%
12.6%	4.4%	19.8%	8.3%	-3.2%	8.7%
7.4%	1.2%	15.4%	6.4%	-4.1%	6.1%
\$2,122,825	\$2,165,835	\$2,765,253	\$2,909,177	\$2,655,382	\$2,990,819
\$292,996	\$25,683	\$607,046	\$142,940	\$-241,427	\$330,191
0.36	0.39	0.32	0.34	0.41	0.37
\$2,788	\$2,974	\$2,797	\$3,100	\$3,568	\$3,333

Table 65.

**FARM RECEIPTS AND EXPENSES PER COW AND PER  
HUNDREDWEIGHT FOR THREE LEVELS OF MILK PRODUCTION  
204 New York Dairy Farms, 2010**

Item	46 Dairy Farms Milk/Cow <19,000#		59 Dairy Farms Milk/Cow 19,000-22,999#		99 Dairy Farms Milk/Cow ≥23,000#	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<b><u>ACCRUAL RECEIPTS</u></b>						
Milk sales	\$2,908	\$18.95	\$3,899	\$17.81	\$4,604	\$17.75
Dairy cattle	174	1.13	271	1.24	301	1.16
Dairy calves	49	0.32	22	0.10	26	0.10
Other livestock	73	0.48	17	0.08	6	0.02
Crops	66	0.43	206	0.94	130	0.50
Government receipts	42	0.28	35	0.16	31	0.12
All other	<u>61</u>	<u>0.40</u>	<u>92</u>	<u>0.42</u>	<u>82</u>	<u>0.31</u>
<b>TOTAL ACCRUAL RECEIPTS</b>	<b>\$3,374</b>	<b>\$21.98</b>	<b>\$4,543</b>	<b>\$20.75</b>	<b>\$5,179</b>	<b>\$19.97</b>
<b><u>ACCRUAL EXPENSES</u></b>						
<b><u>Labor:</u></b> Hired	\$ 322	\$ 2.10	\$ 524	\$ 2.40	\$ 695	\$ 2.68
<b><u>Feed:</u></b> Dairy grain & concentrate	807	5.26	1,102	5.03	1,314	5.06
Dairy roughage	84	0.55	67	0.30	80	0.31
Nondairy	1	0.01	0	0.00	2	0.01
Professional nutritional services	1	0.01	0	0.00	2	0.01
<b><u>Machinery:</u></b> Mach. hire, rent & lease	87	0.57	89	0.41	89	0.34
Machinery repairs & vehicle expense	171	1.11	197	0.90	197	0.76
Fuel, oil & grease	122	0.80	167	0.76	160	0.62
<b><u>Livestock:</u></b> Replacement livestock	10	0.07	23	0.11	12	0.04
Breeding	30	0.20	53	0.24	53	0.20
Vet & medicine	77	0.50	146	0.67	163	0.63
Milk marketing	163	1.06	195	0.89	230	0.89
Bedding	46	0.30	60	0.27	95	0.37
Milking supplies	70	0.46	88	0.40	91	0.35
Cattle lease & rent	4	0.02	2	0.01	3	0.01
Custom boarding	36	0.24	72	0.33	96	0.37
bST expense	8	0.05	15	0.07	71	0.27
Livestock professional fees	10	0.06	13	0.06	13	0.05
Other livestock expense	36	0.23	18	0.08	20	0.08
<b><u>Crops:</u></b> Fertilizer & lime	104	0.68	115	0.53	83	0.32
Seeds & plants	48	0.31	88	0.40	91	0.35
Spray & other crop expense	24	0.16	48	0.22	44	0.17
Crop professional fees	6	0.04	7	0.03	9	0.03
<b><u>Real Estate:</u></b> Land, building & fence repair	31	0.20	56	0.26	69	0.27
Taxes	70	0.45	66	0.30	50	0.19
Rent & lease	41	0.27	69	0.31	59	0.23
<b><u>Other:</u></b> Insurance	44	0.29	50	0.23	40	0.15
Utilities (farm share)	79	0.52	110	0.50	102	0.39
Interest paid	132	0.86	132	0.60	131	0.50
Other professional fees	14	0.09	18	0.08	25	0.10
Miscellaneous	<u>25</u>	<u>0.16</u>	<u>31</u>	<u>0.14</u>	<u>26</u>	<u>0.10</u>
<b>TOTAL OPERATING EXPENSES</b>	<b>\$2,703</b>	<b>\$17.63</b>	<b>\$3,622</b>	<b>\$16.55</b>	<b>\$4,111</b>	<b>\$15.86</b>
Expansion livestock	9	0.06	36	0.16	18	0.07
Extraordinary expense	2	0.01	4	0.02	1	0.00
Machinery depreciation	156	1.01	206	0.94	193	0.74
Building depreciation	<u>93</u>	<u>0.61</u>	<u>113</u>	<u>0.51</u>	<u>138</u>	<u>0.53</u>
<b>TOTAL ACCRUAL EXPENSES</b>	<b>\$2,963</b>	<b>\$19.32</b>	<b>\$3,980</b>	<b>\$18.19</b>	<b>\$4,462</b>	<b>\$17.21</b>

Table 66.

**FARM RECEIPTS AND EXPENSES PER COW AND PER  
HUNDREDWEIGHT FOR THREE HERD SIZE CATEGORIES  
204 New York Dairy Farms, 2010**

Item	47 Dairy Farms with <100 Cows		42 Dairy Farms with 100-200 Cows		115 Dairy Farms with ≥ 200 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<b><u>ACCRUAL RECEIPTS</u></b>						
Milk sales	\$3,382	\$17.66	\$3,564	\$17.91	\$4,448	\$17.81
Dairy cattle	207	1.08	186	0.94	296	1.18
Dairy calves	33	0.17	28	0.14	27	0.11
Other livestock	14	0.07	5	0.02	13	0.05
Crops	83	0.43	144	0.73	140	0.56
Government receipts	43	0.23	46	0.23	32	0.13
All other	<u>82</u>	<u>0.43</u>	<u>97</u>	<u>0.49</u>	<u>81</u>	<u>0.32</u>
<b>TOTAL ACCRUAL RECEIPTS</b>	<b>\$3,844</b>	<b>\$20.07</b>	<b>\$4,070</b>	<b>\$20.45</b>	<b>\$5,036</b>	<b>\$20.16</b>
<b><u>ACCRUAL EXPENSES</u></b>						
<b>Labor: Hired</b>	\$ 201	\$ 1.05	\$ 372	\$ 1.87	\$ 671	\$ 2.69
<b>Feed: Dairy grain &amp; concentrate</b>	1,060	5.54	1,010	5.08	1,263	5.06
Dairy roughage	95	0.50	52	0.26	79	0.32
Nondairy	3	0.02	1	0.00	2	0.01
Professional nutritional services	0	0.00	0	0.00	1	0.01
<b>Machinery: Mach. hire, rent &amp; lease</b>	68	0.35	67	0.34	91	0.36
Mach. repairs & vehicle expense	244	1.27	224	1.13	192	0.77
Fuel, oil & grease	148	0.77	179	0.90	157	0.63
<b>Livestock: Replacement livestock</b>	28	0.14	4	0.02	14	0.05
Breeding	61	0.32	46	0.23	51	0.20
Vet & medicine	96	0.50	106	0.53	159	0.64
Milk marketing	222	1.16	201	1.01	220	0.88
Bedding	35	0.18	52	0.26	90	0.36
Milking supplies	106	0.55	73	0.37	90	0.36
Cattle lease & rent	0	0.00	6	0.03	3	0.01
Custom boarding	11	0.06	18	0.09	95	0.38
bST expense	9	0.04	13	0.07	62	0.25
Livestock professional fees	21	0.11	12	0.06	13	0.05
Other livestock expense	56	0.29	38	0.19	19	0.07
<b>Crops: Fertilizer &amp; lime</b>	88	0.46	112	0.57	89	0.35
Seeds & plants	56	0.29	81	0.41	89	0.36
Spray & other crop expense	39	0.20	45	0.23	43	0.17
Crop professional fees	3	0.01	9	0.04	8	0.03
<b>Real Estate: Land, building &amp; fence repair</b>	48	0.25	51	0.25	66	0.26
Taxes	101	0.53	97	0.49	50	0.20
Rent & lease	34	0.18	43	0.22	61	0.25
<b>Other: Insurance</b>	67	0.35	60	0.30	40	0.16
Utilities (farm share)	128	0.67	111	0.56	100	0.40
Interest paid	135	0.71	137	0.69	130	0.52
Other professional fees	18	0.09	14	0.07	24	0.09
Miscellaneous	<u>22</u>	<u>0.11</u>	<u>20</u>	<u>0.10</u>	<u>27</u>	<u>0.11</u>
<b>TOTAL OPERATING EXPENSES</b>	<b>\$3,184</b>	<b>\$16.72</b>	<b>\$3,256</b>	<b>\$16.36</b>	<b>\$3,998</b>	<b>\$16.01</b>
Expansion livestock	16	0.08	13	0.07	21	0.08
Extraordinary expense	0	0.00	0	0.00	2	0.01
Machinery depreciation	210	1.11	217	1.09	190	0.76
Building depreciation	<u>85</u>	<u>0.45</u>	<u>100</u>	<u>0.50</u>	<u>134</u>	<u>0.54</u>
<b>TOTAL ACCRUAL EXPENSES</b>	<b>\$3,496</b>	<b>\$18.36</b>	<b>\$3,586</b>	<b>\$18.02</b>	<b>\$4,345</b>	<b>\$17.40</b>

Table 67.

**COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION**  
**204 New York Dairy Farms, 2010**

Item	West. & Cent. Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	North. Hudson & Southeastern New York
Number of farms	34	53	23	30	64
<b><u>ACCRUAL EXPENSES</u></b>					
Hired labor	\$178,146	\$481,810	\$438,808	\$330,687	\$189,856
Feed	423,216	955,683	950,541	663,355	392,874
Machinery	136,760	289,392	321,441	254,473	141,611
Livestock	235,518	555,662	576,724	439,588	239,652
Crops	55,391	147,201	166,692	147,651	75,415
Real estate	64,566	133,142	104,220	101,348	48,202
Other	<u>88,483</u>	<u>231,466</u>	<u>250,265</u>	<u>166,748</u>	<u>98,646</u>
Total Operating Expenses	\$1,182,080	\$2,794,356	\$2,808,691	\$2,103,850	\$1,186,257
Expansion livestock	12,005	9,560	15,283	22,266	1,757
Extraordinary expense	59	478	3,709	0	664
Machinery depreciation	62,900	131,682	147,897	119,126	48,920
Building depreciation	<u>35,877</u>	<u>106,682</u>	<u>104,369</u>	<u>76,868</u>	<u>22,506</u>
Total Accrual Expenses	\$1,292,921	\$3,042,258	\$3,079,949	\$2,322,110	\$1,260,104
<b><u>ACCRUAL RECEIPTS</u></b>					
Milk sales	\$1,384,875	\$3,081,573	\$3,138,935	\$2,373,515	\$1,271,463
Livestock	111,973	244,075	242,535	162,642	82,852
Crops	53,720	104,438	87,597	118,409	13,857
Government Receipts	10,254	22,737	15,842	19,647	12,123
All other	<u>13,467</u>	<u>67,832</u>	<u>65,695</u>	<u>37,059</u>	<u>23,260</u>
Total Accrual Receipts	\$1,574,289	\$3,520,655	\$3,550,604	\$2,711,272	\$1,403,555
<b><u>PROFITABILITY ANALYSIS</u></b>					
Net farm income(w/o appreciation)	\$281,369	\$478,396	\$470,655	\$389,163	\$143,451
Net farm income (w/ appreciation)	\$349,270	\$604,116	\$692,543	\$444,701	\$176,310
Labor & management income	\$193,466	\$286,454	\$278,349	\$222,556	\$44,384
Number of operators	1.77	1.86	1.82	1.95	1.75
Labor & mgmt. income/operator	\$109,303	\$154,007	\$152,939	\$114,131	\$25,362
<b><u>BUSINESS FACTORS</u></b>					
Worker equivalent	7.49	14.37	15.34	12.10	7.77
Number of cows	322	693	733	539	297
Number of heifers	288	579	629	446	256
Acres of hay crops <sup>68</sup>	379	577	710	501	384
Acres of corn silage <sup>68</sup>	261	535	541	436	240
Total tillable acres	666	1,185	1,578	1,171	696
Pounds of milk sold	7,817,093	17,293,672	18,075,165	13,270,645	6,989,829
Pounds of milk sold/cow	24,259	24,952	24,667	24,613	23,563
Tons hay crop dry matter/acre	3.4	4.2	3.4	3.3	2.8
Tons corn silage/acre	21.0	20.3	20.5	18.9	17.6
Cows/worker	43	48	48	45	38
Pounds of milk sold/worker	1,043,206	1,203,526	1,178,687	1,096,823	899,206
% grain & conc. of milk receipts	30%	29%	29%	25%	31%
Feed & crop expense/cwt. milk	\$6.07	\$6.36	\$6.18	\$6.11	\$6.69
Fertilizer & lime/crop acre <sup>68</sup>	\$38.80	\$51.85	\$38.45	\$46.11	\$39.82
Machinery cost/tillable acre <sup>68</sup>	\$329	\$392	\$333	\$355	\$310

<sup>68</sup>Excludes farms that do not harvest forages.

Figure 2.

**Percent Change in Milk Production, Five Regions in New York,  
1990-2010**

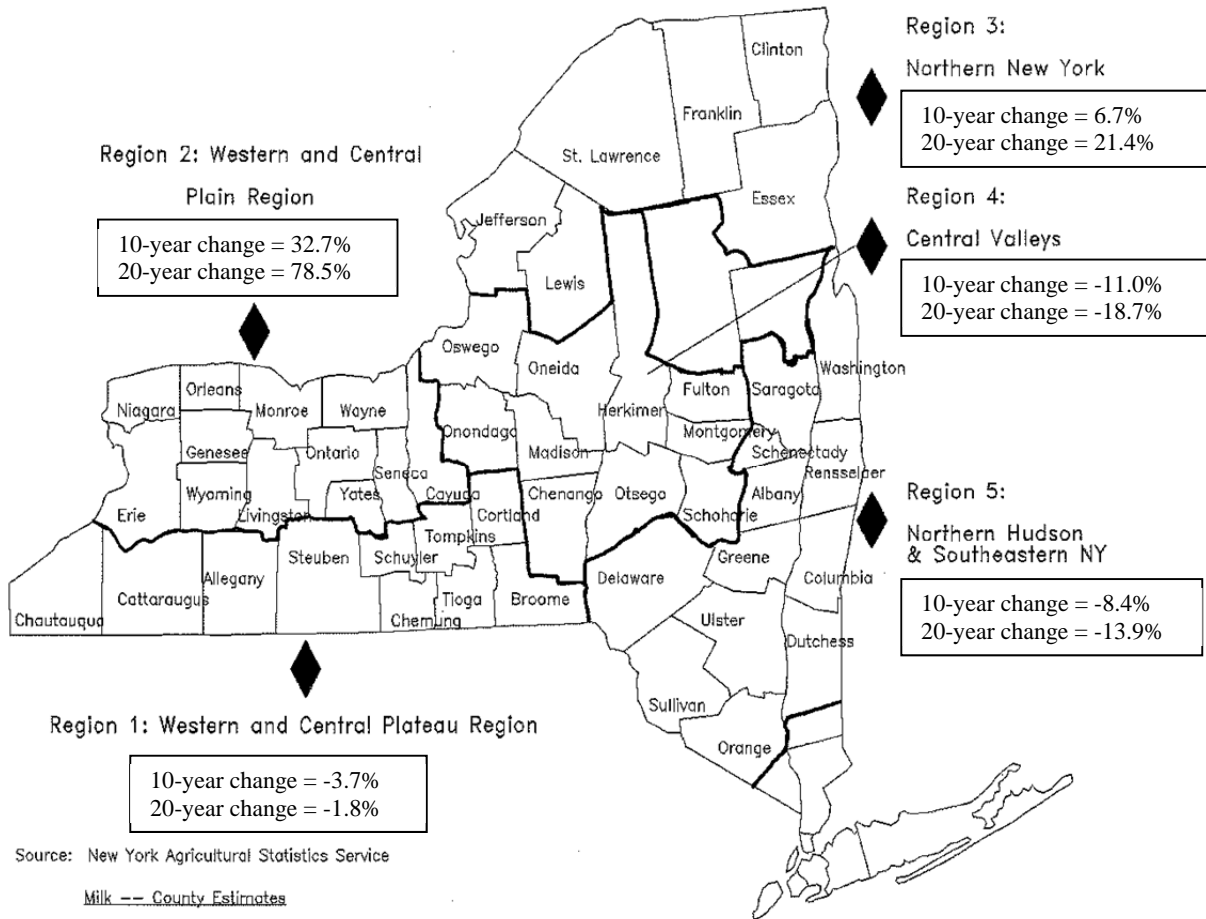


Table 68.

**MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK  
Five Regions of New York**

Item	Region <sup>69</sup>				
	1	2	3	4	5
<u>Milk Production</u> <sup>70</sup>	(million pounds)				
1990	2,062.0	2,539.0	2,085.2	2,823.0	1,545.4
2000	2,103.8	3,415.2	2,372.3	2,576.1	1,452.6
2010	2,025.5	4,531.5	2,530.5	2,294.0	1,331.3
Percent change, 2000 to 2010	-3.7%	+32.7%	+6.7%	-11.0%	-8.4%
Percent change, 1990 to 2010	-1.8%	+78.5%	+21.4%	-18.7%	-13.9%
<u>2010 Cost of Producing Milk</u> <sup>71</sup>	(\$ per hundredweight milk)				
Operating cost	\$12.85	\$13.67	\$13.35	\$13.48	\$15.11
Total cost	16.34	16.83	16.47	16.99	18.58
Average price received	17.72	17.82	17.37	17.89	18.19
Return per cwt. to operator labor, management & capital	\$3.53	\$2.76	\$2.60	\$2.92	\$1.95

<sup>69</sup>See Figure 2 for region descriptions.

<sup>70</sup>Source: New York Agricultural Statistics Service, Milk-County Estimates.

<sup>71</sup>From Dairy Farm Business Summary data.

**Table 69.**

**SELECTED BUSINESS FACTORS BY MILKING FREQUENCY**  
**New York State Dairy Farms, 2009 & 2010**

Item	2x/Day Milking		3x/Day Milking	
	2009	2010	2009	2010
Number of farms	110	111	85	84
<u>Business Size &amp; Production</u>				
Number of cows	190	192	816	867
Number of heifers	164	164	670	734
Milk sold, lbs.	3,851,970	3,938,782	20,823,716	22,279,164
Milk sold/cow, lbs.	20,283	20,468	25,505	25,707
Milk plant test, % butterfat	3.79%	3.77%	3.62%	3.62%
Tillable acres, total	453	473	1,601	1,652
Hay crop, tons DM/acre	2.8	3.0	3.6	3.6
Corn silage, tons/acre	18.7	18.9	18.8	19.7
Forage DM/cow, tons	7.8	8.1	8.3	8.4
<u>Labor &amp; Capital Efficiency</u>				
Worker equivalent	4.79	4.79	18.11	18.71
Milk sold/worker, lbs.	804,729	822,007	1,150,058	1,191,081
Cows/worker	40	40	45	46
Farm capital/worker	\$375,681	\$402,504	\$405,173	\$413,759
Farm capital/cow	\$9,476	\$10,019	\$8,987	\$8,932
Farm capital/cwt. milk	\$46.72	\$48.95	\$35.24	\$34.76
<u>Milk Production Costs &amp; Returns</u>				
Selected costs/cwt.:				
Hired labor	\$2.41	\$2.36	\$2.74	\$2.66
Grain & concentrate	\$5.24	\$5.15	\$5.15	\$5.02
Purchased roughage	\$0.35	\$0.35	\$0.25	\$0.31
Replacements purchased	\$0.04	\$0.04	\$0.07	\$0.06
Veterinary & medicine	\$0.63	\$0.59	\$0.63	\$0.64
Milk marketing	\$0.94	\$0.92	\$0.86	\$0.89
Other dairy expenses	\$1.50	\$1.61	\$1.66	\$1.65
Operating cost of milk production/cwt.	\$13.75	\$13.77	\$13.67	\$13.69
Total labor costs/cwt.	\$4.00	\$3.87	\$3.09	\$2.97
Owner/operator resources/cwt.	\$3.13	\$3.31	\$1.73	\$1.64
Total cost of milk production/cwt.	\$18.46	\$18.74	\$16.69	\$16.63
Average farm price/cwt.	\$13.94	\$18.10	\$13.86	\$17.76
Return over total costs/cwt.	\$-4.52	\$-0.64	\$-2.83	\$1.13
<u>Related Cost Factors</u>				
Hired labor/cow	\$489	\$484	\$700	\$683
Total labor/cow	\$810	\$792	\$789	\$764
Purchased dairy feed/cow	\$1,133	\$1,124	\$1,377	\$1,372
Purchased grain & concentrate as % of milk receipts	38%	29%	38%	28%
Veterinary & medicine/cow	\$128	\$121	\$160	\$164
Machinery costs/cow	\$642	\$705	\$667	\$715
<u>Profitability Analysis</u>				
Net farm income (without appreciation)	\$-45,094	\$112,321	\$-227,793	\$618,231
Labor & management income/operator	\$-74,345	\$24,083	\$-214,063	\$183,136
Rates of return on:				
Equity capital with appreciation	-9.9%	5.5%	-6.7%	13.2%
All capital with appreciation	-5.4%	5.2%	-2.9%	9.7%

Table 70.

**FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION**  
**12 New York Dairy-Renter Farms,<sup>72</sup> 2009**

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
<u>Labor:</u> Hired	\$173,835	Milk sales	\$1,373,290		
<u>Feed:</u> Dairy grain & concentrate	377,853	Dairy cattle	107,919		
Dairy roughage	153,218	Dairy calves	11,738		
Nondairy	0	Other livestock	134		
Professional nutritional services	0	Crops	26,826		
<u>Machinery:</u> Machinery hire, rent & lease	26,507	Government receipts	7,136		
Machinery repairs & farm vehicle expense	56,328	Custom machine work	2,021		
Fuel, oil, grease	42,779	Gas tax refund	0		
<u>Livestock:</u> Replacement livestock	1,429	Other	13,357		
Breeding	11,364	<b>TOTAL ACCRUAL RECEIPTS</b>	<b>\$1,542,419</b>		
Veterinary & medicine	40,766				
Milk marketing	60,208				
Bedding	28,210	<u>PROFITABILITY ANALYSIS</u>			
Milking supplies	37,861	Net farm income (without appreciation)	\$182,419		
Cattle lease & rent	0	Net farm income (with appreciation)	\$172,489		
Custom boarding	8,230	Labor & management income/farm	\$135,576		
bST expense	22,868	Number of operators	1.57		
Livestock professional fees	3,794	Labor & management income/operator	\$86,354		
Other livestock expense	7,675	Rate of return on equity capital			
<u>Crops:</u> Fertilizer & lime	30,644	with appreciation	16.1%		
Seeds & plants	16,314				
Spray & other crop expense	7,554				
Crop professional fees	1,250	<u>BUSINESS FACTORS</u>			
<u>Real estate:</u> Land, building & fence repair	9,748	Number of cows	325		
Taxes	12,840	Number of heifers	271		
Rent & lease	62,416	Worker equivalent	7.72		
<u>Other:</u>		Total tillable acres	461		
Insurance	14,755	Milk sold per cow, lbs.	24,096		
Utilities (farm share)	36,699	Hay DM per acre, tons	2.9		
Interest paid	39,684	Corn silage per acre, tons	16.6		
Miscellaneous	21,152	Milk sold per worker, lbs.	1,014,948		
<b>TOTAL OPERATING EXPENSES</b>	<b>\$1,305,980</b>	Grain & concentrate as % milk sales	29%		
		Feed & crop expense/cwt. milk	\$7.49		
Expansion livestock	\$9,974	Labor & machinery costs/cow	\$1,254		
Extraordinary expense	716	Average price/cwt. milk	\$17.54		
Machinery depreciation	28,118				
Building depreciation	15,213				
<b>TOTAL ACCRUAL EXPENSES</b>	<b>\$1,360,001</b>				
<u>ASSETS</u>	<u>Jan. 1</u>	<u>Dec. 31</u>	<u>LIABILITIES</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Farm cash, checking & savings	\$20,824	\$10,274	Current	\$290,490	\$302,780
Accounts receivable	85,237	93,940	Intermediate <sup>74</sup>	404,492	337,607
Prepaid expenses	0	0	Long term <sup>73</sup>	177,917	237,061
Feed & supplies	112,043	142,569	<b>Total Farm Liabilities</b>	<b>\$872,899</b>	<b>\$877,447</b>
Livestock <sup>73</sup>	701,012	729,245	Nonfarm Liabilities <sup>75</sup>	0	0
Machinery & equipment <sup>73</sup>	260,877	284,881	Farm & Nonfarm Liabilities	\$872,899	\$877,447
Farm Credit stock	387	572	Farm Net Worth	\$554,883	\$671,156
Other stock & certificates	58,017	67,091	Farm & Nonfarm Net Worth	\$658,621	\$779,572
Land & buildings <sup>73</sup>	189,383	220,030			
<b>Total Farm Assets</b>	<b>\$1,427,782</b>	<b>\$1,548,603</b>			
Nonfarm Assets <sup>75</sup>	103,738	108,416			
<b>Farm &amp; Nonfarm Assets</b>	<b>\$1,531,520</b>	<b>\$1,657,019</b>			

<sup>72</sup>A renter owns no farm real estate or tillable land at the end of year.

<sup>73</sup>Includes discounted lease payments.

<sup>74</sup>Includes Farm Credit stock and discounted lease payments for cattle and machinery.

<sup>75</sup>Average of 3 farms reporting.







**NOTES**

**APPENDIX**

**PRICES, COSTS AND TRENDS  
IN THE NEW YORK DAIRY INDUSTRY**

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.

**Table A1.****PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1996-2010**

Year	Mixed Dairy Feed 16% Protein <sup>82</sup> (\$/ton)	Fertilizer, Urea 45-46%N <sup>82</sup> (\$/ton)	Seed Corn, Hybrid <sup>83</sup> (\$/80,000 kernels)	Diesel Fuel <sup>82</sup> (\$/gal)	Tractor 50-59 PTO <sup>83</sup> (\$)	Wage Rate All Hired Farm Workers <sup>84</sup> (\$/hr)
1996	\$226	\$328	\$77.70	\$1.020	\$20,600	\$7.19
1997	216	287	83.50	0.960	21,200	7.63
1998	199	221	86.90	0.810	21,800	7.63
1999	175	180	88.10	0.750	21,900	8.12
2000	174	201	87.50	1.270	21,800	8.74
2001	176	270	92.20	1.260	22,000	8.72
2002	178	232	92.00	1.028	21,900	9.26
2003	194	283	102.00	1.516	21,300	9.93
2004	207	299	105.00	1.400	21,500	9.96
2005	190	365	111.00	2.020	23,400	9.88
2006	207	403	118.00	2.350	23,700	10.35
2007	239	480	133.00	2.355	24,300	10.49
2008	300	598	165.00	3.773	25,000	10.96
2009	258	494	217.00	1.952	24,500	10.83
2010	242	520	182.00	2.690	25,000	10.89

SOURCE: NYASS, New York Agricultural Statistics. USDA, NASS, Agricultural Prices.

<sup>82</sup>Northeast region average. <sup>83</sup>United States average. <sup>84</sup>New York and New England combined.

Inflation, farm profitability, supply and demand all have a direct impact on the inventory values on New York dairy farms. The table below shows year-end (December) prices paid for dairy cows (replacements), an index of these cow prices, an index of new machinery prices (U.S. average), the average per acre value of farmland and buildings reported in January and an index of the real estate prices.

**Table A2.****VALUES AND INDICES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1994-2010**

Year	Dairy Cows		Machinery <sup>85</sup>	Farm Real Estate <sup>86</sup>	
	Value/Head	1977=100	1977=100	Value/Acre	1977=100
1994	1,100	222	249	1,260	215
1995	1,010	204	258	1,280	218
1996	1,030	208	268	1,260	215
1997	980	198	276	1,250	213
1998	1,050	212	286	1,280	218
1999	1,250	253	294	1,340	228
2000	1,250	253	301	1,430	244
2001	1,600	323	312	1,520	259
2002	1,400	283	320	1,610	274
2003	1,300	263	325	1,700	290
2004	1,580	319	351	1,770	302
2005	1,690	341	377	1,900	324
2006	1,550	313	397	2,020	344
2007	1,930	355	416	2,180	371
2008	1,900	377	456	2,350	400
2009	1,200	268	484	2,400	409
2010	1,300	263	501	2,400	409

SOURCE: USDA, NASS, ASB, Agricultural Prices.

<sup>85</sup>United States average; 1995 - 2010 are estimated due to discontinuation of 1977=100 series.

<sup>86</sup>New York average for 2000-2010 excludes Native American Reservation land.

**Table A3.**

<b>NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD</b> <b>New York State, 2010<sup>87,88</sup></b>				
<b>Size of Herd</b>	<b>Farms</b>		<b>Milk Cows</b>	
<b>Number of Cows</b>	<b>Number</b>	<b>% of Total</b>	<b>Number</b>	<b>% of Total</b>
1 – 29	950	18.6%	9,000	1.5%
30 – 49	900	17.6%	29,000	4.8%
50 – 99	1,750	34.3%	120,000	19.6%
100 – 199	855	16.8%	110,000	18.0%
200 – 499	400	7.8%	110,000	18.0%
500 – 749	118	2.3%	67,000	11.0%
750 – 999	45	0.88%	35,000	5.7%
1,000 – 1,499	48	0.94%	55,000	9.0%
1,500 – 1,999	17	0.33%	28,000	4.6%
2,000 or more	17	0.33%	48,000	7.8%
<b>Total</b>	<b>5,100</b>	<b>100.0%</b>	<b>611,000</b>	<b>100.0%</b>

<sup>87</sup>This information on number of farms and number of cows by size of herd is derived from several sources:

- Dairy Statistics as published by the New York Agricultural Statistics Services for 2010.
- CAFO (Concentrated Animal Feeding Operations) permit reports for 2010. Some small CAFO farms (farms with 200 to 700 milk cows) have not applied for or updated the permit. Estimates for these farms were made so as to reflect the total number of dairy farms in New York State; revision from Census in certain size categories.

<sup>88</sup>The author wishes to thank everyone who provided some data as well as providing valuable advice and perspectives. However, any errors, omissions or misstatements are solely the responsibility of the author, Professor George Conneman, **e-mail GJC4@cornell.edu.**

In 2010, there were 5,100 dairy farms in New York State, and 611,000 milk cows. The table above was prepared based on the NYASS data plus the CAFO permit filing for additional herd size categories, and estimates from the 2007 Census.

Eighty-seven percent of the farms (less than 200 cows per farm) had 44 percent of the milk cows. The remaining thirteen percent of the farms had 56 percent of the cows.

About 5 percent of the farms (those with 500 or more cows) had 38 percent of the cows.

Farms with less than 50 cows represent 36 percent of all farms but kept only 6 percent of the cows.

Farms with 1,000 or more cows represent about 1.6 percent of the farms but kept over 21 percent of the cows.

## GLOSSARY AND LOCATION OF COMMON TERMS

**Accounts Payable:** Open accounts or bills owed to feed and supply firms, cattle dealers, veterinarians and other providers of farm services and supplies.

**Accounts Receivable:** Outstanding receipts from items sold or sales proceeds not yet received such as the payment for December milk sales received in January.

**Accrual Accounting:** (defined on page 9).

**Accrual Expenses:** (defined on page 11).

**Accrual Receipts:** (defined on page 11).

**Annual Cash Flow Statement:** (defined on page 18).

**Appreciation:** (defined on page 12).

**Asset Turnover Ratio:** (defined on page 42).

**Available for Debt Service per Cow:** Net cash available for debt service after deducting net personal withdrawals for family expenditures, divided by the average number of cows.

**Average Top 10% Farms:** Average of 20 farms with highest rate of return on all capital (without appreciation).

**Balance Sheet:** A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

**Barn Types:** Stanchion: cows are confined in a stall by a stanchion or neck chain. Freestall: cows move at will between open stalls and feeding areas. Combination: both stanchion and freestall barns used.

**bST Usage:** An estimate of percentage of herd that was injected with bovine somatotropin during the year.

**Business Records:** Account Book: any organized farm record book or ledger. Accounting Service: any hired recordkeeping service. On-Farm Computer: computerized business and financial records entered and kept on the farm. Other: accountant, recordkeeping association or no organized recordkeeping system.

**Capital Efficiency:** The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital. (See analysis, page 42).

**Capital Investment:** Commonly used as substitute term for farm capital or total farm assets.

**Cash Flow:** The movement of money in and out of the business over a given period of time, e.g. one year. (See Annual Cash Flow Statement, page 18).

**Cash Flow Coverage Ratio:** (defined on page 20).

**Cash From Nonfarm Capital Used in the Business:** Transfers of money from nonfarm savings or investments to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

**Cash Paid:** (defined on page 10).

**Cash Receipts:** (defined on page 11).

**Change in Accounts Payable:** (defined on page 11).

**Change in Accounts Receivable:** (defined under Accrual Receipts on page 11).

**Change in Advanced Government Receipts:** (defined under Accrual Receipts page 11).

**Change in Inventory:** (defined on page 10).

**Corporation**: Business is organized under state corporation law. Corporation is owned, operated, and managed by members of one or more farm families and owner/operators are corporate employees. Corporate accounts are modified to exclude operator wages' and other compensation from operating expenses for DFBS use.

**Cost of Producing Milk, Whole Farm Method**: A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk. (see page 28).

**Cost of Term Debt**: A weighted average of the cost of borrowed intermediate and long term capital used on the farm. Calculate by multiplying end of year principal of each loan that is borrowed by the interest rate for each loan at that time. Add up each amount that is calculated for each loan and then divide by total amount of borrowed funds. Do not include accounts payable, operating debt or advanced government receipts. This information is found on pages 8 & 9 of the data entry form.

**Culling Rate**: Culling rate is calculated by dividing the number of animals that left the herd for culling purposes and that died, by the average number of milking and dry cows for the year

**Current** (assets and liabilities): Farm inventories and operating capital that usually turnover annually, and the debt expected to be repaid within 12 months.

**Current Portion**: Principal due in the next year for intermediate and long term debt.

**Current Ratio**: Measures the extent to which current farm assets, if liquidated, would cover current farm liabilities. Calculated as current farm assets at end year divided by current farm liabilities at end year.

**Dairy Cash-Crop (farm)**: Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed ten percent of accrual milk receipts.

**Dairy Farm Renter**: (dairy-renter) - Farm business owner/operator owns no tillable land and commonly rents all other farm real estate.

**Dairy Grain and Concentrate**: All grains, protein supplements, milk substitutes, minerals and vitamins purchased and fed to the dairy herd.

**Dairy Records**: DHIC: Dairy Herd Improvement Cooperative official milk production records. Owner Sampler: weights and samples are taken by farmer but tested by DHIC. Other: all other methods used to obtain periodic production data on individual cows. None: no milk production records on individual cows.

**Dairy Roughage**: All hay, silage or other fodder purchased and fed to the dairy herd.

**Death Rate**: The percentage of the average number of milking and dry cows that died during the year.

**Debt Coverage Ratio**: (defined on page 20)

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

**Debt to Asset Ratios**: (defined on page 16).

**Depreciation Expense Ratio**: The percentage of total accrual receipts that is charged to depreciation expense (machinery and building).

**Dry Matter**: The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

**Equity Capital**: The farm operator/manager's owned capital or farm net worth.

**Expansion Livestock**: (defined on page 9).

**Farm Business Chart**: (see definition and application on page 44).

**Farm Capital**: Average total farm assets.

**Farm Debt Payments as Percent of Milk Sales:** Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see pages 20 & 47.

**Farm Debt Payments Per Cow:** Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart on page 47.

**Financial Lease:** A long-term non-cancelable contract giving the lessee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

**Hay Crop:** All hay land, including new seedings, harvested once or more per year as hay or hay crop silage.

**Hay Dry Matter:** see Dry Matter.

**Heifers:** Female dairy replacements of all ages.

**Hired Labor** (expenses): All wages, non-wage compensation, payroll taxes, benefits, and perquisites paid employees.

**Hired Labor Expense as % of Milk Sales:** The percentage of the gross milk receipts that is used for labor expense. Divide accrual hired labor expense by accrual milk sales.

**Hired Labor Expense per Hired Worker Equivalent:** The total cost to the farm per hired worker equivalent. Divide accrual hired labor expense by number of hired plus family paid worker equivalents.

**Income Statement:** A complete and accurate account of accrual adjusted farm business receipts and expenses used to measure net income over a period of time such as one year or one month.

**Intensive Grazing:** The dairy herd is on pasture at least three months of the year, changing paddocks at least every three days and percent of forage from pasture is at least 30 percent.

**Interest Expense Ratio:** The percentage of total accrual receipts that is used for interest expense

**Intermediate** (assets and liabilities): Farm business property and associated debt that is turned over from one to ten years.

**Labor and Management Income:** (defined on page 13).

**Labor and Management Income Per Operator:** (defined on page 13).

**Labor Efficiency:** Production capacity and output per worker. (See analysis on pages 42 and 43).

**Labor Force:** Operator(s): Person or persons that run the farm and make the management decisions. An operator does not have to be a farm owner. Family Paid: all family members, excluding operators, that are paid for working on the farm. Family Unpaid: all family members, excluding the operators, that are not paid for farm work performed.

**Liquidity:** Ability of business to generate cash to make debt payments or to convert assets to cash.

**Leverage Ratio:** (defined on pages 16 and 47).

**Long-Term** (assets and liabilities): Farm real estate and associated debt with typical life of ten or more years.

**Milk Marketing** (expenses): Milk hauling fees and charges, co-op dues, milk advertising and promotion expenses.

**Milking Frequency:** 2X/day: all cows were milked two times per day for the entire year. 3X/day: all cows were milked three times per day for the entire year. Other: any combination of 2X, 3X, and more frequent milking.

**Milking Systems:** Bucket and Carry: milk is transferred manually from milking unit to pail to tank. Dumping Station: milk is dumped from milking unit into transfer station and then pumped to tank. Pipeline: milking units are connected directly to milk transfer lines. Herringbone, parallel, parabone, and rotary parlors are identified specifically. Other Parlors would include milking systems such as flat barn parlors.

**Net Farm Income:** (defined on page 12).



**Net Farm Income from Operations Ratio:** (defined on page 14)

**Net Milk Income over Purchased Concentrate Per Cow:** Milk receipts less milk marketing expense less purchased grain and concentrate expense, all divided by average number of cows.

**Net Milk Receipts:** The mail box price received by farmers before any farmer authorized assignment or deductions.

**Net Worth:** The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

**Nondairy Feed:** All grain, concentrates, and roughage purchased and fed to nondairy livestock.

**Nonfarm Noncash Capital:** (defined on page 11).

**Nontillable Pasture:** Permanent or semi-permanent pasture land that is not be included in a regular crop rotation.

**Operating Costs of Producing Milk:** (defined on page 31).

**Operating Expense Ratio:** The percentage of total accrual receipts that is used for operating expenses, excluding interest and depreciation.

**Opportunity Cost:** The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

**Other Forage:** All forage crops harvested but not included as hay crops or corn silage, e.g. oats, barley, and sudan grass harvested as roughage.

**Other Livestock Expenses:** All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

**Owner/Operator Resources Per Hundredweight:** The total value of equity, management, and labor contributed to the farm from all owner/operators. This measure is calculated by adding the interest on equity capital to the value of labor and management for all owner/operators and dividing by the hundredweight milk produced during the year.

**Part-Time Dairy (farm):** Dairy farming is the primary enterprise, cropland is owned but operating and managing this farm is not a full-time occupation for one or more people.

**Partnership:** Business is owned by two or more individuals who share profits according to their contribution of labor, management, and capital.

**Percent of Heifer Inventory Custom Inventory:** The percent of current heifer inventory owned by the farm that is being custom raised off the farm.

**Percent of Replacements Purchased:** The percent of animals in the herd that calved for replacement purposes (not expansion cattle) that were different genetic background than your herd and were purchased.

**Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments:** All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

**Premium:** In milk marketing this typically refers to the amount paid for milk in addition to the minimum regulated price. Premiums may be paid to the producer or cooperative supplier of milk by a buyer depending on a variety of criteria such as milk quality, composition, quantity supplied, or services provided. They may also represent market supply/demand conditions not adequately accounted for in the regulated price.

**Prepaid Expenses:** (defined on page 11).

**Producer Price Differential:** Under Federal Order markets with multiple component pricing, it is the residual value (per hundredweight) of the pool after deducting component payments (protein, butterfat, and other solids) to producers. This residual value will vary between market orders and from month-to-month based on the utilization of the various classes and class price. It is possible that the PPD can even be negative at times if, for example, the class III price exceeds the class I price.

**Profitability:** The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

**Purchased Inputs Costs of Producing Milk:** (defined on page 31).

**Repayment Analysis:** An evaluation of the business' ability to make planned debt payments.

**Replacement Livestock:** Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

**Return on Equity Capital:** (defined on page 14).

**Return to all Capital:** (defined on page 14).

**Sell Rate:** The percentage of the average number of milking and dry cows that were sold for culling reasons. Animals that were sold as replacement stock to other dairy farms is not included in this number.

**Sole Proprietorship:** Business is owned by one individual but there may be more than one operator.

**Solvency:** The extent or ability of assets to cover or pay liabilities. Debt/asset and leverage ratios are common measures of solvency.

**Specialized Dairy Farm:** A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.

**Statement of Owner Equity (reconciliation):** (defined on page 17).

**Stocking Rate:** (defined on page 23).

**Taxes** (expenses): Real estate taxes (school, town, and county). Payroll taxes are included as a hired labor expense. Income and self-employment taxes are a personal expense for all non-corporate taxpayers.

**Tillable Acres:** All acres that are normally cropped including hay land that is pastured. Acres that are doubled cropped are counted once.

**Tillable Pasture:** Hay crop acreage currently used for grazing that could be tilled in a regular cropping sequence.

**Total Costs of Producing Milk:** (defined on page 31).

**Value of Calf Sold:** The average value received for bull and heifer calves sold as calves during the year.

**Value of Cow Sold:** The average value received for animals that were sold for culling reasons.

**Whole Farm Method:** A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

**Worker Equivalent:** The number of full-time workers equivalent to all the full and part-time people working throughout the year. Operator and family labor is included. Worker equivalents are determined by converting all work to full-time months (based on a 230 hours per month) and dividing by 12.

**Working Capital:** A theoretical measure of the amount of funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities. Calculated as current farm assets at end year less current farm liabilities at end year.

**OTHER A.E.M. RESEARCH BULLETINS**

<b>RB No</b>	<b>Title</b>	<b>Fee (if applicable)</b>	<b>Author(s)</b>
2011-02	Survey of New York Fruit and Vegetable Farm Employers 2009		Maloney, T. and N. Bills
2011-01	Survey of New York Dairy Farm Employers 2009		Maloney, T. and N. Bills
2010-01	Measuring the Impacts of Generic Fluid Milk and Dairy Marketing		H. Kaiser
2009-01	Dairy Farm Management Business Summary, New York State, 2008	(\$20.00)	Knoblauch, W., Putnam, L., Karszes, J. and J. Anderso

Paper copies are being replaced by electronic Portable Document Files (PDFs). To request PDFs of AEM publications, write to (be sure to include your e-mail address): Publications, Department of Applied Economics and Management, Warren Hall, Cornell University, Ithaca, NY 14853-7801. If a fee is indicated, please include a check or money order made payable to Cornell University for the amount of your purchase. Visit our Web site (<http://aem.cornell.edu/research/rb.htm>) for a more complete list of recent bulletins.