

DAIRY FARM MANAGEMENT

DAIRY BUSINESS SUMMARY NEW YORK STATE 2019



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

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2019 NEW YORK STATE DAIRY FARM BUSINESS SUMMARY AND ANALYSIS*

INTRODUCTION

Dairy Farm Business Summary and Analysis (DFBS) projects are an integral part of Cornell Cooperative Extension's agricultural education program in New York State. The Charles H. Dyson School of Applied Economics and Management of the Cornell S.C. Johnson College of Business, The College of Agriculture and Life Sciences at Cornell University, PRO-DAIRY, and County and Regional Extension staff cooperate in sponsoring DFBS projects. In 2019, over 210 dairy farms participated, including dairy owners, renters, full-time, part-time, organic, and out-of-state farms. Business records submitted by dairy farmers from 32 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 assist with the collection of records. In addition, assistance is provided by Dehm Associates, Chuck Raddick, and by consultants from the Farm Credit East and Yankee Farm Credit Associations. Each cooperator receives a detailed summary and analysis of his or her business. All educators are using a web-based program at 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>. Progress reports are prepared as farm summaries are completed by Cornell faculty and used by DFBS cooperators and other farmers to compare their farm performance with the most current 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.dyson.cornell.edu>.

Program Objective

The primary objective of the Dairy Farm Business Summary and Analysis Project (DFBS) is to help farm managers improve accounting and financial analysis techniques, develop managerial skills, solve business and financial management problems, and plan the future of their business through the appropriate use of historical farm data and the application of modern farm business analysis techniques.

Format

This report is comprised of five sections. The first section charts the progress of the average dairy farm business over two years. One hundred and fifty-two New York dairy farms participated in the summary both years. The averages of selected business factors are presented for these farms and the changes that occurred from 2018 to 2019 are calculated.

The second section contains charts for additional analysis of New York dairy farms. The top 20 percent of farms (by rate of return on assets without appreciation) are compared to the average for all 159 dairy farms that participated in the 2019 DFBS program. Also presented is the progress of the same top 20 percent of farms from 2018 through 2019.

The third section, a summary and analysis section, lists the average data for the 159 farms that participated in the 2019 DFBS program. The format follows that of the individual farm DFBS printout and contains a brief explanation of each table and chart.

The fourth section presents a condensed summary, herd profiles, and progress of the farm business for farms with less than 250 cows, 250 to 624 cows, 625 to 999 cows, 1,000 to 1,449 cows, and farms with 1,450 cows and greater.

The fifth section contains business charts for key measures of farm business and financial performance for all participating farms.

* This report was written by Jason Karszes, Senior Extension Associate and Lauren Augello, Extension Support Specialist, with PRO-DAIRY in the Department of Animal Science at Cornell University.

PROGRESS OF THE FARM BUSINESS

The 2019 business year for the New York State dairy industry was a rebound from the challenging year in 2018, with milk prices recovering from 2018 levels. Along with milk prices increasing from 2018, costs continued to increase. Milk production per cow also increased after falling in 2018. Herd size continued to grow and total milk produced per farm continued to increase. With the combination of changes during the year, a large increase in profits occurred, resulting in positive changes in the financial position of the average farm participating in the Dairy Farm Business Summary and Analysis Program in New York for 2019.

In both 2018 and 2019, 152 farms in New York participated in the Dairy Farm Business Summary and Analysis Project (DFBS), administered by Cornell Cooperative Extension and Cornell University. Tables 1 and 2 on the following pages show selected factors and receipts and expenses, on a per cow and per hundredweight basis, from the same 152 farms that participated in the DFBS project each of the last two years. Table 3 is a business chart of selected factors for the 159 farms participating for the 2019 business year.

Milk Income. Gross milk prices increased 12 percent to \$19.41 per hundredweight, an increase of \$2.15, more than offsetting the decrease that occurred in 2018. Milk marketing expenses decreased by \$0.02 per hundredweight, leading to an increase of \$2.17 in net milk price received on farms. Milk production per cow increased 2 percent to 26,970 pounds per cow, with participating farms indicating the improvements in forage quality led to the increase in milk production. With the increase in milk production along with the increase in milk price, gross milk revenue per cow increased 14.3 percent from the previous year. Average herd size for the participating farms increased by 6 percent to 1,014 cows. This increase in cow numbers along with the increase in milk per cow resulted in total milk pounds shipped per farm increasing by 7 percent. 2019 presented different growing challenges than 2018, with varying degrees of drier conditions impacting cropping activities. Hay yields were unchanged and corn silage yields decreased 3 percent. Cattle revenue fell an additional 9 percent in 2019, while dairy calf revenue fell 11%.

Cost Control. Farm operating costs in 2019 were unchanged, with total operating costs increasing \$0.01 for the year, to \$17.48 per hundredweight. The single largest expense item, purchased grain and concentrates, decreased 2 percent to \$5.66 per hundredweight. The second largest expense per cwt, hired labor, was unchanged. Milking marketing, fuel, breeding, and crop input costs were other expenses that decreased from 2018.

Worker equivalents increased 2 percent, but with the increase in cow numbers, cows per worker also increased 3 percent to 50.3 cows per worker. With the cows per worker increasing along with milk sold per cow, milk sold per worker equivalent increased to 1,321,960 pounds, a 5 percent increase. This increase in milk sold per worker offset the increase in cost per worker equivalent of 5 percent, resulting in no change in hired labor expense per hundredweight.

Building repair, machinery hire/rent/lease and machinery repair and maintenance led the way for expense categories that increased, collectively increasing by \$0.18 per hundredweight from 2018.

Capital Investment. The average investment in the farm decreased 2 percent to \$11,477 per cow. The increase in cow numbers more than offset investment that occurred during the year, leading to a decrease in both investment per cow and depreciation expenses per cow. The decrease in investment per cow plus higher milk production resulted in machinery and equipment depreciation decreasing 2 percent and real estate depreciation decreasing 3 percent.

Significant Increase in Earnings. Profits increased in 2019 to the highest levels since 2014. With the increases in milk prices more than offsetting the decrease in cattle and calf revenue and no change in costs to operate the farm, a significant rebound in earnings occurred. This increase in margin resulted in the second year since 2014 with positive earnings. Net farm income without appreciation increased to \$640,218. Net farm income with appreciation increased to \$940,862.

- Labor and management income per operator/manager increased from -\$99,795 to \$107,259 in 2019.
- Rate of return to all capital without appreciation increased to 5.6 percent, from 1.1 percent in 2018. Rate of return on equity capital without appreciation rose to 5.9 percent.
- Farm net worth increased by 9 percent.
- Debt to asset ratio increased fell from 0.36 to 0.34, reflecting the decreased debt per cow, which fell from \$4,091 to \$3,880, a decrease of 5 percent.

Overall, 2019 was a year showing a return to positive earnings for the second time since 2014 for the average dairy farm participating in the DFBS in New York State. While, on average, farms generated positive earnings in 2019, the changes on individual farms varied, with some farms still reporting negative earnings. Increases in milk price along with increased cow numbers, milk produced, and no change in costs led to the positive earnings in 2019.

Table 1.

PROGRESS OF THE FARM BUSINESS
Same 152 New York Dairy Farms, 2018 & 2019, DFBS

SELECTED FACTORS	Average of 152 Farms*		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	960	1,014	6%
Average number of heifers	818	821	0.4%
Milk sold, pounds	24,839,899	26,650,722	7%
Worker equivalent	19.8	20.2	2%
Total tillable acres	1,770	1,816	3%
<i>Rates of Production</i>			
Milk sold per cow, pounds	25,870	26,290	2%
Hay DM per acre, tons	3.2	3.2	0%
Corn silage per acre, tons	19	18.5	-3%
<i>Labor Efficiency</i>			
Cows per worker	48.6	50.3	3%
Milk sold per worker, pounds	1,257,716	1,321,960	5%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$5.79	\$5.66	-2%
Net milk income over purchased grain & conc. per cow	\$2,514	\$3,124	24%
Dairy feed & crop expense per cwt. milk	\$7.23	\$7.04	-3%
Labor and machinery costs per cow	\$1,695	\$1,733	2%
Hired labor costs per cwt. milk	\$2.95	\$2.96	0.3%
Hired labor costs per worker equivalent	\$43,376	\$45,419	5%
Operating cost of producing milk per cwt.	\$15.09	\$15.43	2%
Purchased input cost of producing milk per cwt.	\$16.72	\$17.01	2%
Total cost of producing milk per cwt.	\$18.97	\$19.17	1%
Net milk price	\$16.09	\$18.26	13%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$11,749	\$11,477	-2%
Machinery and equipment per cow	\$1,803	\$1,756	-3%
Asset turnover ratio	0.42	0.52	24%
<i>Profitability</i>			
Net farm income without appreciation	\$132,552	\$640,238	383%
Net farm income without appreciation per cow	\$138	\$632	358%
Net farm income with appreciation	\$14,734	\$940,862	6286%
Net farm income with appreciation per cow	\$15	\$928	6087%
Labor & management income per operator/manager	-\$99,795	\$107,259	207%
Rate return on equity capital with appreciation	-2.4%	9.8%	508%
Rate return on equity capital without appreciation	-0.8%	5.9%	877%
Rate return on all capital with appreciation	0.1%	8.2%	8100%
Rate return on all capital without appreciation	1.1%	5.6%	403%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$7,289,929	\$7,920,993	9%
Debt to asset ratio	0.36	0.34	-6%
Farm debt per cow	\$4,091	\$3,880	-5%
Debt coverage ratio	0.92	1.73	88%

*Farm participating both years

Table 2.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHT

Same 152 New York Dairy Farms, 2018 & 2019, DFBS

Item	2018		2019		% Change Per Cwt.
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	960		1,014		6%
Cwt. of milk sold		248,399		266,507	7%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,464	\$17.26	\$5,104	\$19.41	12%
Dairy cattle	\$315	\$1.22	\$291	\$1.11	-9%
Dairy calves	\$23	\$0.09	\$21	\$0.08	-11%
Other livestock	\$22	\$0.08	\$10	\$0.04	-50%
Crops	\$118	\$0.45	\$53	\$0.20	-56%
Miscellaneous receipts	<u>\$172</u>	<u>\$0.66</u>	<u>\$193</u>	<u>\$0.73</u>	11%
Total Operating Receipts	\$5,114	\$19.77	\$5,671	\$21.57	9%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$764	\$2.95	\$778	\$2.96	0.3%
Dairy grain & concentrate	\$1,498	\$5.79	\$1,489	\$5.66	-2%
Dairy roughage	\$97	\$0.37	\$103	\$0.39	5%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$1	\$0.00	\$1	\$0.00	NA
Machine hire, rent & lease	\$127	\$0.49	\$147	\$0.56	14%
Machine repair & vehicle expense	\$218	\$0.84	\$243	\$0.92	10%
Fuel, oil & grease	\$154	\$0.59	\$143	\$0.54	-8%
Replacement livestock	\$6	\$0.02	\$18	\$0.07	250%
Breeding	\$52	\$0.20	\$47	\$0.18	-10%
Veterinary & medicine	\$151	\$0.58	\$153	\$0.58	0%
Milk marketing	\$302	\$1.17	\$304	\$1.15	-2%
Bedding	\$84	\$0.32	\$90	\$0.34	6%
Milking supplies	\$84	\$0.33	\$89	\$0.34	3%
Cattle lease	\$2	\$0.01	\$4	\$0.02	100%
Custom boarding	\$77	\$0.30	\$83	\$0.32	7%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$15	\$0.06	\$16	\$0.06	0%
Other livestock expense	\$22	\$0.08	\$24	\$0.09	13%
Fertilizer & lime	\$101	\$0.39	\$96	\$0.37	-5%
Seeds & plants	\$111	\$0.43	\$104	\$0.40	-7%
Spray & other crop expense	\$55	\$0.21	\$52	\$0.20	-5%
Crop professional fees	\$8	\$0.03	\$5	\$0.02	-33%
Land, building & fence repair	\$63	\$0.24	\$74	\$0.28	17%
Taxes	\$63	\$0.24	\$63	\$0.24	0%
Real estate rent & lease	\$85	\$0.33	\$83	\$0.31	-6%
Insurance	\$45	\$0.17	\$45	\$0.17	0%
Utilities	\$95	\$0.37	\$86	\$0.33	-11%
Interest paid	\$188	\$0.73	\$199	\$0.76	4%
Other professional fees	\$26	\$0.10	-\$1	\$0.11	10%
Miscellaneous	<u>\$25</u>	<u>\$0.10</u>	<u>\$28</u>	<u>\$0.11</u>	10%
Total Operating Expenses	\$4,519	\$17.47	\$4,596	\$17.48	0.1%
Expansion livestock	\$34	\$0.13	\$27	\$0.10	-23%
Extraordinary expenses	\$3	\$0.01	\$1	\$0.01	0%
Machinery depreciation	\$229	\$0.88	\$226	\$0.86	-2%
Real estate depreciation	<u>\$191</u>	<u>\$0.74</u>	<u>\$190</u>	<u>\$0.72</u>	-3%
Total Expenses	\$4,976	\$19.23	\$5,040	\$19.17	-0.3%
Net Farm Income w/o Appreciation	\$138	\$0.53	\$632	\$2.40	353%

Table 3.

Farm Business Chart

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the number in each column, which represents your current level of performance. The five numbers in each column represents the average of each 20 percent, or quintile, of farms included in the summary, with each column sorted independently. The highest 20% of farms in one column may not be in the top 20% for another column. Use this information to identify business areas where more challenging goals or improvements are needed.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

159 New York Dairy Farms, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
44.8	2,344	62,604,837	28,415	4.6	22.3	64.6	1,664,325
24.4	1,228	33,304,196	27,120	3.6	20.0	52.5	1,373,752
17.0	825	20,902,109	25,980	3.1	18.6	47.4	1,220,619
9.2	440	10,720,335	24,622	2.5	17.0	41.7	1,048,282
3.8	135	3,015,077	19,536	1.6	11.0	30.6	680,464

Cost Control			Cost Control				
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & Crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$1,055	\$4.63	24	\$587	\$1,365	\$1,359	\$5.89	\$24,291
\$1,329	\$5.30	27	\$780	\$1,677	\$1,633	\$6.72	\$39,318
\$1,459	\$5.84	30	\$885	\$1,829	\$1,826	\$7.19	\$42,357
\$1,607	\$6.22	32	\$1,004	\$2,004	\$2,000	\$7.76	\$45,650
\$1,825	\$7.06	36	\$1,345	\$2,547	\$2,271	\$8.78	\$52,512

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,601	\$21.02	\$13.27	\$17.59	9.4	\$1,958,651	\$526,929	\$1,882,694
\$5,258	\$19.70	\$14.77	\$18.92	6.1	\$729,199	\$137,492	\$767,818
\$5,025	\$19.35	\$15.58	\$19.93	4.1	\$359,916	\$39,213	\$403,090
\$4,711	\$19.04	\$16.57	\$21.21	2.0	\$154,892	-\$11,428	\$118,321
\$3,881	\$18.51	\$18.91	\$27.07	-4.2	-\$55,199	-\$125,309	-\$41,068

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$8,058	\$869	0.77	0.70	10.19	\$59	94	58
\$10,333	\$1,502	0.57	0.75	1.97	\$355	76	30
\$11,746	\$1,968	0.50	0.78	1.37	\$587	65	20
\$13,495	\$2,602	0.42	0.82	0.95	\$769	56	12
\$18,973	\$4,151	0.29	0.92	0.20	\$1,009	38	-9

*Page number of the participant's DFBS where the factor is located.

COMPARING TO THE TOP 20 PERCENT OF FARMS, 2019

There is a considerable range in business performance every year across the farms participating in the DFBS. To provide insight into areas of difference between farms, the top 20 percent of participating farms by return to all capital without appreciation are summarized and compared to the average of all farms. Table 4 reports on selected business and financial factors, while Table 5 reports the per cow and per hundredweight income and expenses. Tables 6 and 7 report the progress and changes that the same farms from the top 20 percent of farms made from 2018 to 2019. Table 8 is a business chart for the top 20 percent of farms for 2019.

Milk production was higher for the top 20 percent of farms for both pounds of milk and pounds of components, averaging 3 percent more. With similar percent components, the top 20 percent and average of all farms received the same net milk price for the year. While the top 20 percent averaged a bit higher on gross price, they also averaged higher on milk marketing costs, resulting in the same net milk price. The top 20 percent of farms were higher in the dairy cattle and crop revenue categories but lower in the remaining categories. For the top 20 percent of farms, the total income per hundredweight averaged \$21.76, 17 cents higher than the average farm.

The top 20 percent of farms were 66 percent larger than the average herd size of participating farms. While they were 66 percent larger, they only utilized 42 percent more tillable land and 49 percent more labor. Cow numbers per worker were 11 percent higher. With higher milk sold per cow, the milk sold per worker equivalent was 14 percent higher. Even with slightly higher cost per hired worker, the higher labor efficiency resulted in hired labor costs per hundredweight that was 9 percent lower for farms in the top 20 percent.

While milk production per cow was 3 percent higher, the purchased grain and concentrate costs of the top 20 percent of farms was also 1 percent higher, or 8 cents per hundredweight. Out of the 31 operating expense categories, the top profit group was lower in 27 of them. Of the four expenses that were higher for the top 20 percent, purchased forage was the largest difference, averaging 15 cents higher. Dairy grain and concentrates, milk marketing, and custom boarding were the other expenses that the top 20% were higher than the average farm. With all costs combined, total farm operating costs for the top 20 percent were 5 percent lower, averaging \$16.62 per hundredweight. This cost was \$0.88 lower than the average of all farms.

The combination of larger herd size, higher non-milk income, and lower costs for the top 20 percent of farms resulted in an average net farm income without appreciation per cow of 51 percent higher. Return to all capital without appreciation averaged 9.4 percent versus 5.5 percent for the average of all farms.

Total investment per cow was different between the two groups, averaging \$11,540 for the average farm and \$10,498 for the top 20 percent. Debt per cow was \$617 lower per cow for the top 20 percent of farms, averaging \$3,286. These farms had an average net worth, or percent equity, of 69 percent, versus 66 percent for the average of all farms.

The business chart for the top 20 percent of farms (Table 8) shows the quintile range for selected factors for the farms, with each category ranked from high to low. The reported range shows that for 2019, the highest profit farms tended to be larger, had above average milk production, higher labor efficiency, and lower total costs of production than the range reported for these same factors for all farms.

Table 4.

DAIRY FARM BUSINESS SUMMARY SELECTED FACTORS159 New York Dairy Farms, All Farms vs Top 20%², 2019

SELECTED FACTORS	Average of All Farms	Average of Top 20%	Percent Difference
<i>Size of Business</i>			
Average number of cows	986	1,634	66%
Average number of heifers	799	1,300	63%
Milk sold, pounds	25,879,779	44,080,534	70%
Worker equivalent	19.7	29.3	49%
Total tillable acres	1,782	2,530	42%
<i>Rates of Production</i>			
Milk sold per cow, pounds	26,252	26,970	3%
Hay DM per acre, tons	3.19	3.29	3%
Corn silage per acre, tons	18.52	18.33	-1%
Cull rate, percent	35%	33%	-6%
<i>Labor Efficiency</i>			
Cows per worker	50.1	55.7	11%
Milk sold per worker, pounds	1,314,528	1,503,429	14%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$5.66	\$5.74	1%
Grain & concentrate purchased as % milk sales	29.77	29.19	-2%
Dairy feed & crop expense per cwt. milk	\$7.04	\$7.09	1%
Labor and machinery costs per cow	\$1,737	\$1,554	-11%
Hired labor costs per cwt. milk	\$2.96	\$2.69	-9%
Hired labor costs per worker equivalent	\$45,353	\$44,509	-2%
Operating cost of producing milk per cwt.	\$15.43	\$14.46	-6%
Purchased input cost of producing milk per cwt.	\$17.02	\$15.92	-6%
Total cost of producing milk per cwt.	\$19.20	\$17.77	-7%
Net milk price	\$18.26	\$18.27	0%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$11,540	\$10,498	-9%
Machinery and equipment per cow	\$1,765	\$1,485	-16%
Asset turnover ratio	0.52	0.58	12%
<i>Profitability</i>			
Net farm income without appreciation	\$621,258	\$1,560,319	151%
Net farm income without appreciation per cow	\$630	\$955	51%
Net farm income with appreciation	\$913,308	\$1,986,321	117%
Net farm income with appreciation per cow	\$926	\$1,215	31%
Labor & management income per operator/manager	\$102,879	\$416,052	304%
Rate return on equity capital with appreciation	9.7%	15.1%	56%
Rate return on equity capital without appreciation	5.8%	11.5%	99%
Rate return on all capital with appreciation	8.1%	11.8%	47%
Rate return on all capital without appreciation	5.5%	9.4%	70%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$7,740,743	\$12,263,064	58%
Debt to asset ratio	0.34	0.31	-9%
Farm debt per cow	\$3,903	\$3,286	-16%
Debt coverage ratio ³	1.73	2.53	46%

² Average of 31 farms with highest percent rates of return to all capital (without appreciation).³ Farm participating both years

Table 4 Continued.

DAIRY FARM BUSINESS SUMMARY SELECTED FACTORS159 New York Dairy Farms, All Farms vs Top 20%⁴, 2019

SELECTED FACTORS	Average of All Farms	Average of Top 20%	Percent Difference
<i>Income Generation</i>			
% Butterfat ⁵	3.91%	3.90%	0%
% Protein ⁵	3.10%	3.13%	1%
Lbs. of Butterfat and Protein per Cow ⁵	1,843	1,895	3%
Component Value per Cwt. ⁵	\$18.33	\$18.36	0%
Gross Milk Price	\$19.42	\$19.46	0%
<i>Balance Sheet Analysis</i>			
Working Capital as % of Operating Expenses	22%	30%	36%
Long Term Debt to Asset Ratio	0.30	0.27	-10%
Intermediate/Current Debt to Asset Ratio	0.37	0.34	-8%
Debt to Asset Ratio, Total	0.34	0.31	-9%
<i>Debt Analysis</i>			
Accounts payable as percent of total debt	4%	3%	-25%
Long-term debt as percent of total debt	42%	38%	-10%
Current & intermediate debt as percent of total debt	58%	62%	7%
Cost of term debt(weighted average)	4.5%	4.2%	-7%
<i>Net Worth Change</i>			
Retained earnings	\$372,589	\$1,093,978	194%
Contributed capital	\$49,187	\$25,579	-48%
Valuation equity	\$195,661	\$282,563	44%
<i>Cash Flow</i>			
Net provide by operating activities, per cow	\$541	\$685	27%
Net provided by investing activities, per cow	-\$571	-\$605	-6%
Net provided by financing activities, per cow	\$51	-\$42	-184%
Net provided by reserves, per cow	-\$22	-\$32	-45%
<i>Repayment Analysis⁶</i>			
Planned debt payments per Cow	\$577	\$489	-15%
Planned debt payments per Cwt.	\$2.20	\$1.81	-18%
Percent of total receipts	11%	9%	-16%
Percent of milk receipts	12%	10%	-17%
Cash flow coverage ratio	1.29	1.75	36%
Debt coverage ratio	1.73	2.53	46%
<i>Crop Program Analysis</i>			
Crop input costs per acre	\$136	\$139	2%
Total tillable acres per cow	1.84	1.62	-12%
Total forages acres per cow	1.60	1.43	-11%
Harvested dry matter per cow	7.49	6.79	-9%
Percent tillable land owned	52%	52%	0%
<i>Capital and Financial Efficiency</i>			
Farm capital per cow	\$11,540	\$10,498	-9%
Real estate per cow	\$5,450	\$4,754	-13%
Machinery and equipment per cow	\$1,765	\$1,485	-16%
Asset turnover	0.52	0.58	12%
Operating expense ratio	0.78	0.74	-5%
Interest expense ratio	0.04	0.03	-25%
Depreciation expense ratio	0.07	0.07	0%

⁴ Average of 31 farms with highest percent rates of return to all capital (without appreciation).⁵ Farms reporting data⁶ Farm participating two years

Table 5.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHT159 New York Dairy Farms, All Farms vs Top 20%⁷, 2019

Item	Average of All Farms		Average of Top 20% Farms		% Difference
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	986		1,634		66%
Cwt. of milk sold		258,798		440,805	70%
ACCRUAL OPERATING RECEIPTS					
Milk	\$5,097	\$19.42	\$5,250	\$19.46	0.2%
Dairy cattle	\$290	\$1.11	\$319	\$1.18	7%
Dairy calves	\$21	\$0.08	\$20	\$0.08	-5%
Other livestock	\$10	\$0.04	\$8	\$0.03	-24%
Crops	\$55	\$0.21	\$84	\$0.31	48%
Miscellaneous receipts	<u>\$192</u>	<u>\$0.73</u>	<u>\$189</u>	<u>\$0.70</u>	-4%
Total Operating Receipts	\$5,667	\$21.59	\$5,870	\$21.76	1%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$776	\$2.96	\$725	\$2.69	-9%
Dairy grain & concentrate	\$1,486	\$5.66	\$1,549	\$5.74	1%
Dairy roughage	\$102	\$0.39	\$145	\$0.54	38%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$1	\$0.00	\$1	\$0.00	0%
Machine hire, rent & lease	\$147	\$0.56	\$130	\$0.48	-13%
Machine repair & vehicle expense	\$242	\$0.92	\$221	\$0.82	-11%
Fuel, oil & grease	\$144	\$0.55	\$130	\$0.48	-12%
Replacement livestock	\$18	\$0.07	\$12	\$0.05	-34%
Breeding	\$47	\$0.18	\$41	\$0.15	-15%
Veterinary & medicine	\$153	\$0.58	\$140	\$0.52	-11%
Milk marketing	\$303	\$1.15	\$321	\$1.19	3%
Bedding	\$91	\$0.35	\$76	\$0.28	-18%
Milking supplies	\$89	\$0.34	\$86	\$0.32	-5%
Cattle lease	\$4	\$0.02	\$2	\$0.01	-61%
Custom boarding	\$82	\$0.31	\$106	\$0.39	27%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$16	\$0.06	\$16	\$0.06	-2%
Other livestock expense	\$24	\$0.09	\$20	\$0.08	-19%
Fertilizer & lime	\$97	\$0.37	\$84	\$0.31	-16%
Seeds & plants	\$105	\$0.40	\$89	\$0.33	-18%
Spray & other crop expense	\$53	\$0.20	\$44	\$0.16	-18%
Crop professional fees	\$5	\$0.02	\$3	\$0.01	-54%
Land, building & fence repair	\$74	\$0.28	\$73	\$0.27	-3%
Taxes	\$63	\$0.24	\$54	\$0.20	-17%
Real estate rent & lease	\$84	\$0.32	\$66	\$0.24	-23%
Insurance	\$45	\$0.17	\$44	\$0.16	-5%
Utilities	\$86	\$0.33	\$81	\$0.30	-8%
Interest paid	\$201	\$0.76	\$171	\$0.64	-17%
Other professional fees	\$28	\$0.11	\$26	\$0.10	-10%
Miscellaneous	<u>\$28</u>	<u>\$0.11</u>	<u>\$24</u>	<u>\$0.09</u>	-16%
Total Operating Expenses	\$4,593	\$17.50	\$4,482	\$16.62	-5%
Expansion livestock	\$26	\$0.10	\$39	\$0.14	43%
Extraordinary expenses	\$1	\$0.01	\$1	\$0.00	-66%
Machinery depreciation	\$227	\$0.86	\$208	\$0.77	-11%
Real estate depreciation	<u>\$189</u>	<u>\$0.72</u>	<u>\$186</u>	<u>\$0.69</u>	-4%
Total Expenses	\$5,036	\$19.18	\$4,915	\$18.22	-5%
Net Farm Income w/o Appreciation	\$630	\$2.40	\$955	\$3.54	47%

⁷ Average of 31 farms with highest rates of return to all capital (without appreciation).

Table 6.

SELECTED FACTORS	Average of 31 Farms*, Top 20%		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	1,524	1,634	7%
Average number of heifers	1,250	1,300	4%
Milk sold, pounds	39,986,804	44,080,534	10%
Worker equivalent	28.7	29.3	2%
Total tillable acres	2,438	2,530	4%
<i>Rates of Production</i>			
Milk sold per cow, pounds	26,240	26,970	3%
Hay DM per acre, tons	3.2	3.3	3%
Corn silage per acre, tons	18.5	18.3	-1%
<i>Labor Efficiency</i>			
Cows per worker	53.1	55.7	5%
Milk sold per worker, pounds	1,393,754	1,503,429	8%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$5.89	\$5.74	-3%
Net milk income over purchased grain & conc. per cow	\$2,663	\$3,357	26%
Dairy feed & crop expense per cwt. milk	\$7.23	\$7.09	-2%
Labor and machinery costs per cow	\$1,512	\$1,554	3%
Hired labor costs per cwt. milk	\$2.71	\$2.69	-1%
Hired labor costs per worker equivalent	\$41,676	\$44,509	7%
Operating cost of producing milk per cwt.	\$14.46	\$14.46	0%
Purchased input cost of producing milk per cwt.	\$15.99	\$15.92	0%
Total cost of producing milk per cwt.	\$17.92	\$17.77	-1%
Net milk price	\$16.01	\$18.27	14%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$10,730	\$10,498	-2%
Machinery and equipment per cow	\$1,516	\$1,485	-2%
Asset turnover ratio	0.47	0.58	23%
<i>Profitability</i>			
Net farm income without appreciation	\$509,687	\$1,560,319	206%
Net farm income without appreciation per cow	\$334	\$955	186%
Net farm income with appreciation	\$269,159	\$1,986,321	638%
Net farm income with appreciation per cow	\$177	\$1,215	586%
Labor & management income per operator/manager	-\$17,701	\$416,052	2450%
Rate return on equity capital with appreciation	0.5%	15.1%	2920%
Rate return on equity capital without appreciation	2.6%	11.5%	336%
Rate return on all capital with appreciation	1.8%	11.8%	556%
Rate return on all capital without appreciation	3.2%	9.4%	188%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$10,841,210	\$12,263,063	13%
Debt to asset ratio	0.34	0.31	-9%
Farm debt per cow	\$3,589	\$3,286	-8%
Debt coverage ratio	1.16	2.53	118%

*Farm participating both years

Table 7.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHT

Same 31 New York Dairy Farms, Top 20%, 2018 & 2019, DFBS

Item	2018		2019		% Change Per Cwt.
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	1,524		1,634		7%
Cwt. of milk sold		399,868		440,805	10%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,530	\$17.27	\$5,250	\$19.46	13%
Dairy cattle	\$320	\$1.22	\$319	\$1.18	-3%
Dairy calves	\$25	\$0.10	\$20	\$0.08	-20%
Other livestock	\$10	\$0.04	\$8	\$0.03	-25%
Crops	\$101	\$0.39	\$84	\$0.31	-21%
Miscellaneous receipts	<u>\$186</u>	<u>\$0.71</u>	<u>\$189</u>	<u>\$0.70</u>	-1%
Total Operating Receipts	\$5,173	\$19.71	\$5,870	\$21.76	10%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$711	\$2.71	\$725	\$2.69	-1%
Dairy grain & concentrate	\$1,547	\$5.89	\$1,549	\$5.74	-3%
Dairy roughage	\$131	\$0.50	\$145	\$0.54	8%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$1	\$0.00	\$1	\$0.00	NA
Machine hire, rent & lease	\$118	\$0.45	\$130	\$0.48	7%
Machine repair & vehicle expense	\$189	\$0.72	\$221	\$0.82	14%
Fuel, oil & grease	\$144	\$0.55	\$130	\$0.48	-13%
Replacement livestock	\$10	\$0.04	\$12	\$0.05	25%
Breeding	\$45	\$0.17	\$41	\$0.15	-12%
Veterinary & medicine	\$146	\$0.56	\$140	\$0.52	-7%
Milk marketing	\$330	\$1.26	\$321	\$1.19	-6%
Bedding	\$72	\$0.27	\$76	\$0.28	4%
Milking supplies	\$78	\$0.30	\$86	\$0.32	7%
Cattle lease	\$0	\$0.00	\$2	\$0.01	NA
Custom boarding	\$97	\$0.37	\$106	\$0.39	5%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$14	\$0.05	\$16	\$0.06	20%
Other livestock expense	\$12	\$0.05	\$20	\$0.08	60%
Fertilizer & lime	\$81	\$0.31	\$84	\$0.31	0%
Seeds & plants	\$87	\$0.33	\$89	\$0.33	0%
Spray & other crop expense	\$49	\$0.19	\$44	\$0.16	-16%
Crop professional fees	\$3	\$0.01	\$3	\$0.01	0%
Land, building & fence repair	\$63	\$0.24	\$73	\$0.27	13%
Taxes	\$54	\$0.21	\$54	\$0.20	-5%
Real estate rent & lease	\$72	\$0.27	\$66	\$0.24	-11%
Insurance	\$40	\$0.15	\$44	\$0.16	7%
Utilities	\$89	\$0.34	\$81	\$0.30	-12%
Interest paid	\$159	\$0.60	\$171	\$0.64	7%
Other professional fees	\$29	\$0.11	-\$1	\$0.10	-9%
Miscellaneous	<u>\$24</u>	<u>\$0.09</u>	<u>\$24</u>	<u>\$0.09</u>	0%
Total Operating Expenses	\$4,394	\$16.74	\$4,482	\$16.62	-1%
Expansion livestock	\$44	\$0.17	\$39	\$0.14	-18%
Extraordinary expenses	\$4	\$0.01	\$1	\$0.00	-100%
Machinery depreciation	\$208	\$0.79	\$208	\$0.77	-3%
Real estate depreciation	<u>\$189</u>	<u>\$0.72</u>	<u>\$186</u>	<u>\$0.69</u>	-4%
Total Expenses	\$4,839	\$18.43	\$4,916	\$18.22	-1%
Net Farm Income w/o Appreciation	\$334	\$1.27	\$955	\$3.54	179%

Table 8.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

31 New York Dairy Farms, Top 20%, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14)*	(12)	(12)	(12)	(11)	(11)	(14)	(14)
61.3	3,521	95,660,256	29,020	4.9	22.0	71.7	1,986,428
36.1	1,941	51,432,582	28,016	3.7	19.8	61.3	1,623,334
24.6	1,391	38,168,187	26,891	3.3	18.5	56.0	1,476,286
18.4	986	27,275,237	26,025	2.9	17.6	50.3	1,319,834
9.5	519	13,039,855	24,426	1.6	11.0	42.9	1,159,057

Cost Control							
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & Crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$1,206	\$4.84	25	\$505	\$1,163	\$1,478	\$5.92	\$39,131
\$1,434	\$5.44	28	\$723	\$1,494	\$1,722	\$6.64	\$41,545
\$1,546	\$5.72	29	\$823	\$1,607	\$1,884	\$6.99	\$44,368
\$1,650	\$6.04	31	\$902	\$1,789	\$2,151	\$7.64	\$47,192
\$1,844	\$6.48	34	\$1,136	\$2,113	\$2,357	\$8.38	\$51,675

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,672	\$20.62	\$12.20	\$16.62	13.7	\$3,382,241	\$1,131,288	\$3,093,811
\$5,472	\$19.76	\$13.72	\$17.40	9.3	\$1,981,214	\$590,946	\$1,826,792
\$5,282	\$19.35	\$14.30	\$17.79	8.7	\$1,371,121	\$343,803	\$1,215,733
\$5,076	\$19.05	\$15.08	\$18.22	8.0	\$865,090	\$231,929	\$752,554
\$4,651	\$18.62	\$16.64	\$19.22	7.5	\$395,985	\$148,943	\$262,597

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$7,185	\$703	0.95	0.67	10.19	\$42	99	106
\$9,466	\$1,089	0.67	0.71	3.36	\$326	84	37
\$10,387	\$1,430	0.60	0.74	1.91	\$503	65	24
\$11,464	\$1,850	0.54	0.77	1.30	\$754	54	11
\$15,137	\$2,873	0.43	0.82	0.36	\$955	33	2

*Page number of the participant's DFBS where the factor is located.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy producers in this region. The following table shows important farm business characteristics and the number of farms with each characteristic.

Table 9.

BUSINESS CHARACTERISTICS 159 New York Dairy Farms, 2019

Type of Farm	Number	Type of Barn	Number
Dairy	151	Stanchion/Tie-Stall	10
Dairy – cash crop	8	Freestall	139
		Combination	8
Type of Ownership	Number	Milking System	Number
Owner	157	Pipeline	13
Renter	2	Herringbone Conventional	36
		Herringbone Rapid Exit	14
Type of Business	Number	Parallel	67
Single proprietorship	21	Parabone	3
Partnership	15	Rotary	8
Limited Liability Corporation	107	Other	17
Subchapter S Corporation	14	Milking Frequency	Number
Subchapter C Corporation	1	2x/day	38
		3x/day	105
Business Record System	Number	Other	16
Account Book	5	Production Records	Number
Accounting Service	14	Testing Service	122
On-Farm Computer	133	On-Farm System	30
Other	3	Other	1
		None	4
Breed	Percent		
Holstein	93.43		
Jersey	3.73		
Other	2.84		

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 for a 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 27.
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 farmland, buildings, and storage structures.
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 non-operating cost included in total expenses.
9. Depreciation of machinery and buildings are non-operating costs included in total expenses. Depreciation charges are based on those reported for income tax purposes.

Cash and accrual farm expenses are summarized on the following page.

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 2019.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent purchased inputs not actually used during the year. Decreases in purchased inventories are added to expenses because they represent inputs purchased in a prior year and used this year.

Table 10.

CASH AND ACCRUAL FARM EXPENSES
159 New York Dairy Farms, 2019

Expense Item	Cash Paid	- Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$765,448	\$437<<		\$-170		\$764,8410
<u>Feed</u>						
Dairy grain & concentrate	1,504,539	19,203		-20,306		1,465,030
Dairy roughage	110,563	11,452		1,912		101,023
Nondairy	225	3		0		223
Professional nutritional services	1,051	0<<		89		1,140
<u>Machinery</u>						
Machinery hire, rent/lease	147,144	553<<		-2,149		144,442
Mach. repair & farm vehicle exp.	241,150	1,010		-1,217		238,922
Fuel, oil & grease	143,036	635		-764		141,637
<u>Livestock</u>						
Replacement livestock	17,510	0<<		416		17,926
Breeding	47,194	275		-374		46,545
Vet & medicine	151,440	419		-341		150,680
Milk marketing	297,380	0		1,103		298,482
Bedding	90,501	1,086		261		89,675
Milk supplies	88,800	749		-253		87,799
Cattle lease/rent	4,078	0<<		0		4,078
Custom boarding	81,713	0<<		-1,199		80,514
bST expense	0	0		0		0
Livestock professional fees	16,244	320<<		-8		15,916
Other livestock expense	24,276	113		-29		24,134
<u>Crops</u>						
Fertilizer & lime	107,045	5,926		-5,160		95,959
Seeds & plants	115,654	11,166		-1,250		103,237
Spray, other crop exp.	58,072	3,893		-2,356		51,823
Crop professional fees	5,803	416<<		-76		5,312
<u>Real Estate</u>						
Land/bldg./fence repair	72,339	206		462		72,595
Taxes	62,302	16<<		-352		61,934
Rent & lease	81,759	54<<		649		82,354
<u>Other</u>						
Insurance	45,066	161<<		-480		44,425
Utilities (farm share)	84,906	105<<		-303		84,497
Interest paid	197,934	0<<		-103		197,831
Other professional fees	27,454	-146<<		-90		27,509
Miscellaneous	<u>27,253</u>	<u>-31</u>		<u>4</u>		<u>27,289</u>
Total Operating Expenses	\$4,617,876	\$58,019		\$-32,085		\$4,527,772
Expansion livestock	26,048	0<<		0		26,048
Extraordinary expense	1,447	0<<		0		1,447
Machinery depreciation						223,710
Building depreciation						185,997
Total Accrual Expenses						\$4,964,974

Change in prepaid expenses (noted above by <<) is a net change in non-inventory expenses that have been paid in advance of their use. If 2019 funds used to prepay 2020 leases exceed the amount of 2019 leases prepaid in 2018, the amount of this excess is subtracted to exclude it from 2019 accrual lease expenses. The excess prepaid lease is charged against the future year's business operation. A decrease in prepaid lease is added to accrual expenses because it represents use of resources during this year that were paid for in past years.

Change in accounts payable: An increase in accounts payable from beginning to end of year is added when calculating accrual expenses because these expenses were incurred (resources used) in 2019 but not paid for. A decrease is subtracted because the resource was used before 2019.

Accrual expenses are the costs of inputs actually used in this year's production. They are the total of cash paid, as well as changes in inventory, prepaid expenses, and accounts payable.

Income Statement – Receipts

Cash and accrual farm receipts are presented in the following table. Accrual receipts are generally greater than cash receipts due to an increase in account receivables, grown feed inventories, and herd growth. However, if these changes for inventories and account receivables are negative for the year, the accrual revenue can be less than the cash.

Table 11.

CASH AND ACCRUAL FARM RECEIPTS 159 New York Dairy Farms, 2019

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts
Milk sales	\$4,909,030				\$116,090		\$5,025,119
Dairy cattle	208,385		77,592		309		286,286
Dairy calves	24,479		-3,961		53		20,571
Other livestock	9,135		2,280		-1,341		10,075
Crops	59,233		-2,997		-1,813		54,423
Government receipts	62,345		0 ¹³		-215		62,130
Custom machine work	17,321				-514		16,807
Gas tax refund	885				-76		808
Other	<u>110,947</u>				<u>-934</u>		110,013
Less nonfarm noncash cap.			<u>0¹⁴</u>				<u>0</u>
Total Receipts	\$5,401,761		\$72,915		\$111,557		\$5,586,232

¹³ Change in advanced government receipts.

¹⁴ 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 from the sale of farm products, services, and government programs. Nonfarm income is not included in calculating farm profitability.

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values, excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An annual increase in advanced government receipts is subtracted from cash income because it represents income received in 2019 for the 2018 crop year more than funds earned for 2019. Likewise, a decrease is added to cash government receipts because it represents funds earned for 2019 but received in 2018.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. The January milk check for this December's marketing's compared with the previous January's check is included as a change in accounts receivable.

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

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.

Profitability Analysis

Farm operators¹⁵ contribute labor, management, and equity capital to their businesses and the combination of these resources, and the other resources used in the business, determines profitability. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources, such as labor and management.

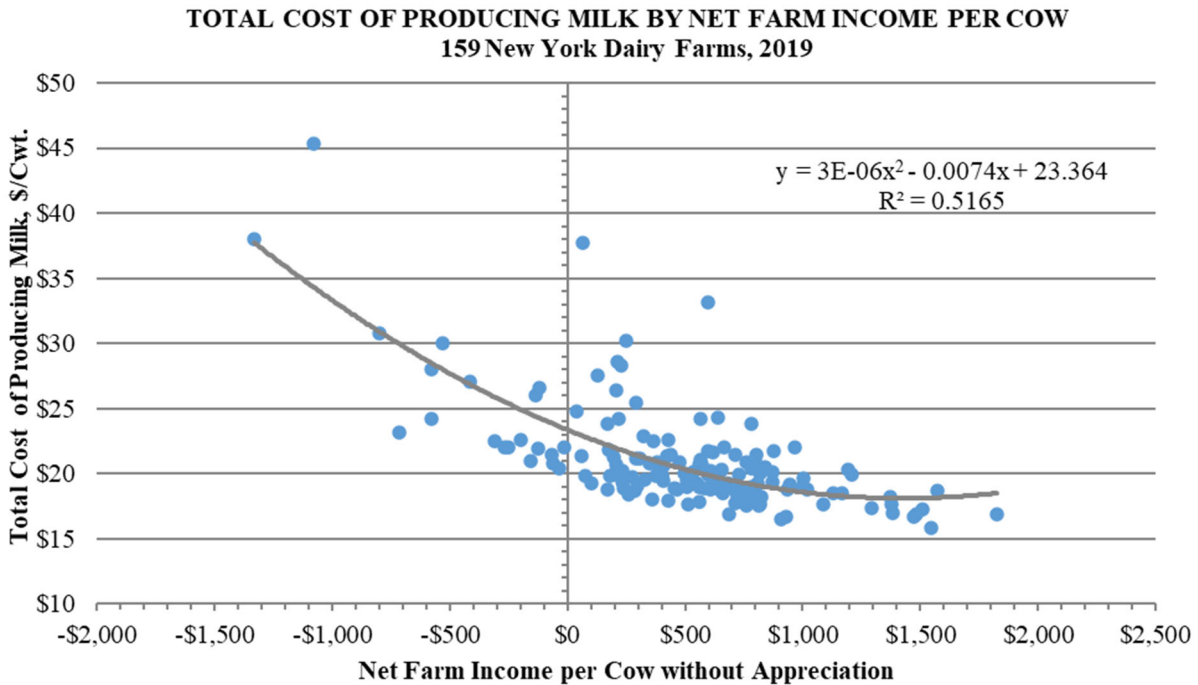
Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business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

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

Table 12.

Item	Average 159 Farms	
	Total	Per Cow
Total accrual receipts	\$ 5,586,232	
Appreciation: Livestock	20,193	
Machinery	66,639	
Real Estate	184,796	
Other Stock/Certificates	20,422	
Total Including Appreciation	\$ 5,878,283	
Total accrual expenses	4,964,974	
Net Farm Income (with appreciation)	\$ 913,308	\$926
Net Farm Income (without appreciation)	\$ 621,258	\$630

Chart 1.



¹⁵ Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who own the farm or are formal members of the partnership or corporation.

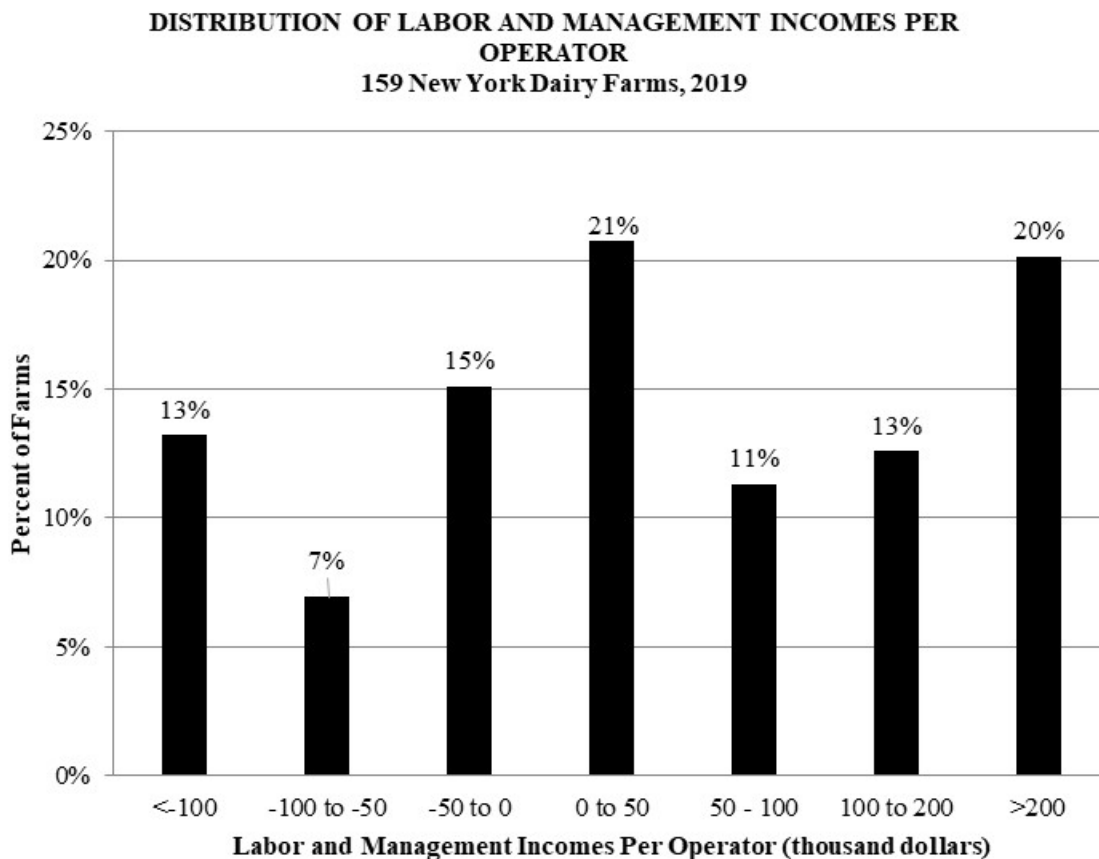
Labor and management income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business.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

Table 13.

LABOR AND MANAGEMENT INCOME 159 New York Dairy Farms, 2019	
Item	Average 159 Farms
Net farm income without appreciation	\$ 621,258
Family labor unpaid @ \$2,950 per month	- 2,759
Interest on \$7,431,609 average equity capital @ 5% real rate	- 371,589
Labor & Management Income per Farm (2.40 operators/farm)	\$ 246,910
Labor & Management Income per Operator/Manager	\$ 102,879

Labor and management income per operator averaged \$102,879 on these 159 Farms in 2019. Returns to labor and management were less than -\$50,000 on 20 percent of the farms, with 36 percent of the farms showing a return to labor & management between -\$50,000 and \$50,000. An additional 24 percent of farms report labor and management income per operators between 50,000 and 200,000, Twenty percent of farms report returns greater than \$200,000.

Chart 2.



Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the 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 average farm net worth or equity capital. Return on 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 total capital.

Table 14.

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
159 New York Dairy Farms, 2019

Item	Average 159 Farms
Net farm income with appreciation	\$ 913,308
Family labor unpaid @ \$3,025 per month	- 2,759
Value of operators' labor & management	- 190,586
Return on equity capital with appreciation	\$ 719,964
Interest paid	+ 197,831
Return on total capital with appreciation	\$ 917,795
Return on equity capital without appreciation	\$ 427,913
Return on total capital without appreciation	\$ 625,744
Rate of return on average equity capital:	
with appreciation	9.69%
without appreciation	5.76%
Rate of return on average total capital:	
with appreciation	8.07%
without appreciation	5.50%
Net farm income from operations ratio	0.11

Farm and Family Financial Status

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

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 2019, leases were discounted by 7.5 percent.

Advanced government receipts are included as current liabilities. Government payments received in 2019 that are for participation in the 2020 program are the end year balance and payments received in 2018 for participation in the 2019 program are the beginning year balance.

Current Portion or principal due in the next year for intermediate and long-term debt is included as a current liability.

Table 15.

2019 FARM BUSINESS & NONFARM MARKET VALUE BALANCE SHEET

159 New York Dairy Farms, 2019

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 121,581	\$ 143,453	Accounts payable	\$ 190,470	\$158,396
Accounts receivable	398,201	508,745	Operating debt	236,236	208,493
Prepaid expenses	6,225	8,141	Short Term	3,359	3,942
Feed & supplies	1,190,155	1,243,262	Advanced govt. receipts	0	0
			Current Portion:		
			Intermediate	269,461	275,855
			Long Term	134,379	140,050
Total Current	\$ 1,716,162	\$ 1,903,601	Total Current	\$ 833,904	\$ 786,736
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 1,219,683	\$ 1,296,810	1-10 years	\$1,438,842	\$1,477,423
leased	626	4,1	Financial lease		
Heifers	631,619	648,339	(cattle/machinery)	8,636	9,564
Bulls/other livestock	13,064	15	Farm Credit stock	1,175	1,167
Mach./equipment owned	1,681,018	1,785,316	Total Intermediate	\$1,448,653	\$1,488,154
Mach./equipment leased	8,010	5,432			
Farm Credit stock	1,175	1,167			
Other stock/certificate	517,109	559,084			
Total Intermediate	\$ 4,072,303	\$ 4,315,600			
<u>Long Term</u>			<u>Long Term</u>		
Land/buildings:			Structured debt		
owned	\$ 5,293,872	\$ 5,450,509	>10 years	\$ 1,677,305	\$1,654,076
leased	1,217	634	Financial lease		
Total Long Term	\$ 5,295,089	\$ 5,451,143	(structures)	1,217	634
			Total Long Term	\$1,678,522	\$1,654,711
Total Farm Assets	\$ 11,083,554	\$11,670,344	Total Farm Liabilities	\$3,961,079	\$3,929,600
			FARM NET WORTH	\$7,122,475	\$7,740,743
Nonfarm Assets, Liabilities & Net Worth (Average of 37 farms reporting)					
Assets			Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 8,047	\$ 8,181	Nonfarm Liabilities	\$618	\$1,313
Cash value life insurance	54,500	59,547			
Nonfarm real estate	146,351	146,351			
Auto (personal share)	6,297	5,789			
Stocks & bonds	199,132	211,587			
Household furnishings	4,108	4,108			
All other nonfarm assets	228,434	233,069			
Total Nonfarm Assets	\$646,870	\$668,632	NONFARM NET WORTH	\$646,252	\$667,319
Farm & Nonfarm Assets, Liabilities, and Net Worth ¹⁶					
				Jan. 1	Dec. 31
Total Assets				\$11,730,424	\$12,338,976
Total Liabilities				3,961,697	3,930,913
TOTAL FARM & NONFARM NET WORTH				\$ 7,768,727	\$ 8,408,063

¹⁶ Assumes that average nonfarm assets and liabilities for the non-reporting farms were the same as for those reporting.

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets. The debt to asset ratio is compiled by dividing liabilities by assets. The leverage ratio is the dollars of debt per dollar of equity, computed by dividing total farm liabilities by farm net worth. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability.

Table 16.

BALANCE SHEET ANALYSIS		
159 New York Dairy Farms, 2019		
Item	Average 159 Farms	
<u>Financial Ratios - Farm:</u>		
Percent equity		66%
Debt/asset ratio: total		0.34
long-term		0.30
intermediate/current		0.37
Leverage Ratio		0.51
Current Ratio		2.42
Working Capital: \$1,116,865	as % of Total Expenses:	22%
<u>Farm Debt Analysis:</u>		
Accounts payable as % of total debt		4%
Long-term liabilities as a % of total debt		42%
Current & intermediate liabilities as a % of total debt		58%
Cost of term debt (weighted average)		4.5%
	<u>Average 159 Farms</u>	
<u>Farm Debt Levels:</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$3,903	\$4,207
Long-term debt	1,644	1,771
Long-term & intermediate	3,122	3,365
Intermediate & current debt	2,260	2,435

Farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Changes in the livestock inventory are included in the dairy analysis. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

Table 17.

FARM INVENTORY BALANCE			
159 New York Dairy Farms, 2019			
Item	Average of 159 Farms		
	<u>Real Estate</u>	<u>Machinery & Equipment</u>	
Value beginning of year	\$ 5,293,872	\$ 1,681,018	
Purchases	\$ 259,912 ¹⁷	\$ 271,915	
Gift/inheritance	+ 0	+ 0	
Lost capital	- 96,390		
Sales	- 5,685	- 10,546	
Depreciation	- 185,997	- 223,710	
Net investment	= -28,160	= 37,659	
Appreciation	+ 184,796	+ 66,639	
Value end of year	\$ 5,450,509	\$ 1,785,316	

¹⁷ \$58,706 land and \$201,206 buildings and/or depreciable improvements.

Statement of Owner Equity

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are interrelated and consistent (in accountant's 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 you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being 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 is an excellent indicator of farm generated financial progress.

Table 18.**STATEMENT OF OWNER EQUITY (RECONCILIATION)**

159 New York Dairy Farms, 2019

Item	Average 159 Farms	
Beginning of year farm net worth		\$ 7,122,475
Net farm income without appreciation	\$ 621,132	
+ Nonfarm cash income	+ 5,131	
- Personal withdrawals & family expenditures excluding nonfarm borrowings	- \$ 253,673	
Retained Earnings		\$ 372,589
Nonfarm noncash transfers to farm	\$ 0	
+ Cash used in business from nonfarm capital	+ 49,187	
- Note/mortgage from farm real estate sold (nonfarm)	- 0	
Contributed/Withdrawn Capital	=	+\$ 49,187
Appreciation	\$292,051	
- Lost capital	- 96,390	
Change in Valuation Equity		\$ 195,661
Imbalance/Error		- 831
End of year farm net worth ¹⁸		= \$ 7,740,743
Change in net worth with appreciation		\$ 618,268
<u>Change in Net Worth</u>		
Without appreciation		\$ 326,218
With appreciation		\$ 618,268

¹⁸May not add due to rounding.

Cash Flow Statement

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

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities, and from reserves. All cash inflows and outflows, including beginning and end balances, 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 inflows/outflows.

Table 19.

ANNUAL CASH FLOW STATEMENT		Average 159 Farms	
159 New York Dairy Farms, 2019			
Item			
<u>Cash Flow from Operating Activities</u>			
Cash farm receipts	\$ 5,401,761		
- Cash farm expenses	4,617,876		
- Extraordinary expense	1,447		
= Net cash farm income		\$ 782,438	
Personal withdrawals/family expenses including nonfarm debt payments	\$ 254,111		
- Nonfarm income	<u>5,131</u>		
- Net cash withdrawals from the farm		<u>\$ 248,980</u>	
= Net Provided by Operating Activities			\$ 533,458
<u>Cash Flow from Investing Activities</u>			
Sale of Assets: Machinery	\$ 10,546		
+ real estate	5,685		
+ other stock & certificates	<u>2,374</u>		
= Total asset sales		\$ 18,605	
Capital purchases: expansion livestock	\$ 26,048		
+ machinery	271,915		
+ real estate	259,912		
+ other stock & certificates	<u>23,927</u>		
- Total invested in farm assets		<u>\$ 581,803</u>	
= Net Provided by Investment Activities			\$ -563,198
<u>Cash Flow From Financing Activities</u>			
Money borrowed (intermediate & long term)	\$ 464,125		
+ Money borrowed (short-term)	2,517		
+ Increase in operating debt	0.00		
+ Cash from nonfarm capital used in business	49,187		
+ Money borrowed - nonfarm	<u>437</u>		
= Cash inflow from financing		\$ 516,267	
Principal payments (intermediate & long-term)	\$ 436,710		
+ Principal payments (short-term)	1,934		
+ Decrease in operating debt	<u>27,743</u>		
- Cash outflow for financing		<u>\$ 466,386</u>	
= Net Provided by Financing Activities			\$ 49,881
<u>Cash Flow from Business</u>			
Beginning farm cash, checking & savings		\$ 121,581	
- Ending farm cash, checking & savings		<u>143,453</u>	
= Net Provided from Reserves			<u>\$ -21,872</u>
<u>Imbalance (error)</u>			<u>\$ -1,731</u>

Repayment Analysis

A valuable use of cash flow analysis is to compare the debt payments planned for the last year with the amount actually paid. The measures listed below provide several different perspectives on the repayment performance of the business. However, the critical question for many farmers and lenders is whether planned payments can be made in 2020. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to the planned 2020 debt payments shown below.

Table 20.

FARM DEBT PAYMENTS PLANNED New York Dairy Farms, 2018 & 2019

Debt Payments	Same 152 Dairy Farms		
	2019 Payments		Planned
	Planned	Made	2020
Long-term	\$ 213,003	\$ 239,301	\$ 228,336
Intermediate-term	353,571	406,231	357,753
Short-term	3,841	2,157	1,966
Operating (net reduction)	13,096	82,597	3,416
Accounts payable (net reduction)	<u>1,645</u>	<u>49,046</u>	<u>0.08</u>
Total	\$ 585,156	\$ 779,332	\$ 591,472
Per cow	\$ 577	\$ 769	
Per cwt. 2018 milk	\$ 2.20	\$ 2.92	
Percent of total 2018 receipts	10.5%	13.6%	
Percent of 2018 milk receipts	11.6%	15.1%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments schedule. The ratios show the percentage of payments planned for 2019 (as of December 31, 2018) that could have been made with the amount available for debt service in 2019. Farmers who did not participate in DFBS in 2018 have their 2019 cash flow coverage ratio based on planned debt payments for 2020.

Table 21.

COVERAGE RATIOS Same 152 New York Dairy Farms, 2018 & 2019

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$ 5,559,238	Net farm income (without appreciation)	\$ 640,238
- Cash farm expenses	4,752,666	+ Depreciation	421,161
+ Interest paid (cash)	202,131	+ Interest paid (accrual)	202,024
- Net personal withdrawals from farm ¹⁹	<u>253,755</u>	- Net personal withdrawals from farm ¹⁹	<u>253,755</u>
(A) = Amount Available for Debt Service	\$ 754,948	(A') = Repayment Capacity	\$1,009,668
(B) = Debt Payments Planned for 2018 (as of December 31, 2017)	\$ 585,156	(B) = Debt Payments Planned for 2018 (as of December 31, 2017)	\$ 585,156
(A/B) = Cash Flow Coverage Ratio for 2018	1.29	(A'/B) = Debt Coverage Ratio for 2018	1.73

¹⁹ Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the cash flow coverage ratio will be incorrect.

Table 22.

ANNUAL CASH FLOW WORKSHEET
159 New York Dairy Farms, 2019

Item	Average 159 Farms		Total
	Per Cow	Per Cwt.	
Number cows and cwt. Milk	986	258,798	
<u>Accrual Operating Receipts</u>			
Milk	\$5,097	\$19.42	\$ 5,025,119
Dairy cattle	290	1.11	286,286
Dairy calves	21	0.08	20,571
Other livestock	10	0.04	10,075
Crops	55	0.21	54,423
Misc. receipts	192	0.73	189,758
Total Operating Receipts	\$5,667	\$21.59	\$ 5,586,232
<u>Accrual Operating Expenses</u>			
Hired labor	\$ 776	\$ 2.96	\$ 764,841
Dairy grain & concentrate	1,486	5.66	1,465,030
Dairy roughage	102	0.39	101,023
Nondairy feed	0	0.00	223
Professional nutritional services	1	0.00	1,140
Machinery hire/rent/lease	147	0.56	144,442
Machinery repair & farm vehicle expense	242	0.92	238,922
Fuel, oil & grease	144	0.55	141,637
Replacement livestock	18	0.07	17,926
Breeding	47	0.18	46,545
Veterinary & medicine	153	0.58	150,680
Milk marketing	303	1.15	298,482
Bedding	91	0.35	89,675
Milking supplies	89	0.34	87,799
Cattle lease	4	0.02	4,078
Custom boarding	82	0.31	80,514
bST expense	0	0.00	0
Livestock professional fees	16	0.06	15,916
Other livestock expense	24	0.09	24,134
Fertilizer & lime	97	0.37	95,959
Seeds & plants	105	0.40	103,237
Spray/other crop expenses	53	0.20	51,823
Crop professional fees	5	0.02	5,312
Land, building, fence repair	74	0.28	72,595
Taxes	63	0.24	61,934
Real estate rent/lease	84	0.32	82,354
Insurance	45	0.17	44,425
Utilities	86	0.33	84,497
Other professional fees	28	0.11	27,509
Miscellaneous	28	0.11	27,289
Total Less Interest Paid	\$4,392	\$16.73	\$ 4,329,941
<u>Net Accrual Operating Income</u>			
(without interest paid)	\$ 1,274	\$ 4.85	\$ 1,256,291
- Change in livestock/crop inventory ²⁰	74	0.28	72,915
- Change in accounts receivable	113	.43	111,557
- Change in feed/supply inventory ²¹	59	.22	58,019
+ Change in accounts payable ²²	-32	-0.12	-31,982
NET CASH FLOW	\$ 996	\$ 3.79	\$ 981,818
- Net personal withdrawals from farm (see footnote on page 24)	250	0.95	246,671
Available for Farm Debt Payments & Investments	\$ 746	\$ 2.84	\$ 735,147
- Farm debt payments	771	2.94	759,778
Available for Farm Investment	\$ -25	\$ -0.10	\$ -24,631
- Capital purchases: cattle, machinery & improvements	590	2.25	581,803
Additional Capital Needed	\$ -615	\$ -2.34	\$ -606,433

²⁰Includes change in advance gov. receipts. ²¹Includes change in prepaid expenses. ²²Excludes change in interest account payable.

Cropping Analysis

The cropping program is an important part of the dairy farm business and often represents opportunities for improved productivity and profitability. A complete evaluation of what the available land resources are, how they are being used, how well crops are producing, and what it costs to produce them is important to evaluating alternative cropping and feed purchasing alternatives.

Table 23.

LAND RESOURCES AND CROP PRODUCTION

159 New York Dairy Farms, 2019

Item	Average 159 Farms		
	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
<u>Land</u>			
Tillable	934	848	1,782
Nontillable	27	12	39
Other nontillable	198	2	200
Total	1,159	862	2,021
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres²³</u>	<u>Prod/Acre</u>
Hay crop	155	799	3.2 tn DM
Corn silage	152	751	18.5 tn
Other forage	37	192	3.9 tn DM
Total forage	156	1,571	4.7 tn DM
Corn grain	78	260	140.9 bu
Oats	7	61	53.5 bu
Wheat	32	173	64.6 bu
Other crops	49	138	
Tillable pasture	7	219	
Idle tillable	55	146	
Total Tillable Acres	159	1,782	

²³This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were corn grain 128, oats 3, wheat 35, tillable pasture 10, and idle 50.

Average crop acres and yields compiled for the region are for the farms reporting each crop. 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 based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

Table 24

CROP/DAIRY RATIOS

154 New York Dairy Farms, 2019 ²⁴

Item	Average 154 Farms
Total tillable acres per cow	1.86
Total forage acres per cow	1.61
Harvested forage dry matter, tons per cow	7.57

²⁴ Excludes farms that do not harvest forages.

A number of cooperators have allocated crop expenses among the hay crop, corn, and other crops produced. Fertilizer and lime, seeds and plants, and spray and other crop expenses have been computed per acre and per production unit for hay and corn. Additional expense items such as fuels, labor, and machinery repairs are not included. Rotational grazing was used on two farms.

Table 25.

CROP RELATED ACCRUAL EXPENSES

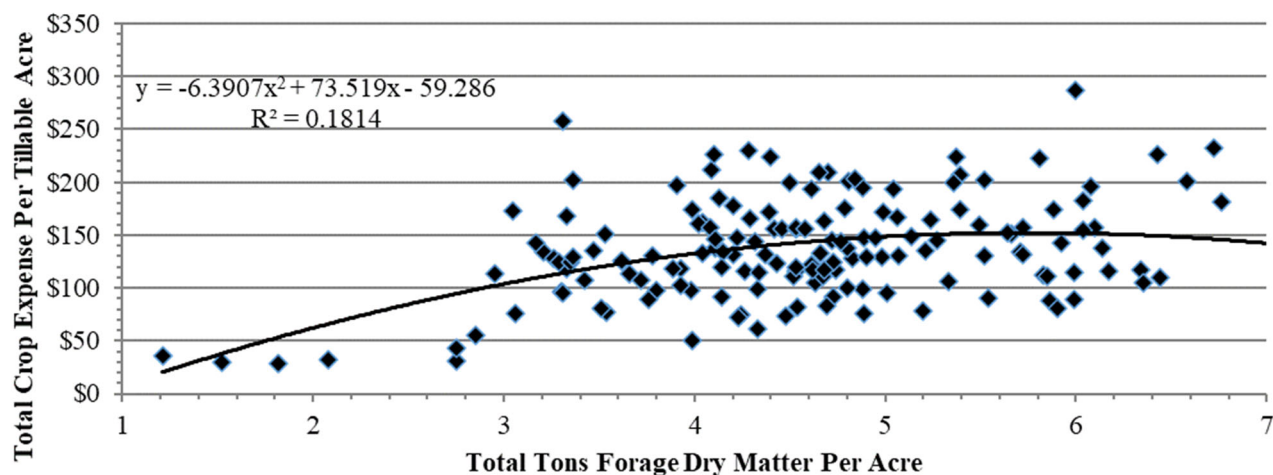
New York Dairy Farms Reporting, 2019

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh. Bu.	Hay Crop	
					Per Acre	Per Ton DM
No. of farms reporting	154 ²⁵	7			7	
Ave. number of acres	1,830	759			756	
Fertilizer/lime	\$ 51.90	\$ 15.35	\$ 8.76	\$ 0.12	\$ 44.39	\$ 13.92
Seed/plants	54.89	8.53	17.17	0.18	26.71	8.37
Spray/other crop exp.	28.75	2.23	9.08	0.10	7.25	2.27
TOTAL	\$ 135.54	\$ 26.11	\$ 35.01	\$ 0.40	\$ 78.35	\$ 24.56

²⁵ Excludes farms that do not harvest forages.

Chart 3.

CROP EXPENSE PER ACRE BY TOTAL FORAGE PRODUCTION PER ACRE
156 New York Dairy Farms That Grew Forages, 2019



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. Although machinery costs have not been allocated to individual crops, they are shown below per total tillable acre.

Table 26.

ACCRUAL MACHINERY EXPENSES²⁶

154 New York Dairy Farms, 2019

Machinery Expense Item	Average 154 Farms	
	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$143,556	\$ 78.44
Machinery repairs & farm vehicle exp.	242,428	132.47
Machine hire, rent & lease	145,747	79.64
Interest (5%)	88,648	48.44
Depreciation	<u>227,763</u>	<u>124.25</u>
Total	\$847,763	\$463.24

²⁶ Excludes farms that do not harvest forages.

The trend lines on charts on the previous and following pages were completed using regression techniques. The predictive formulas and R² are presented for each relationship. An R² of 1.00 indicates a perfect relationship between the data and the trend line. An R² of .30 for example, is interpreted as the trend line explaining 30% of the variability in the relationship. The higher the R², the better the trend line fits the data. With a low R², other factors, not measured, are important in explaining the relationship.

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 non-tillable pasture acres less corn grain acres, all divided by the average number of cows.

Chart 4.

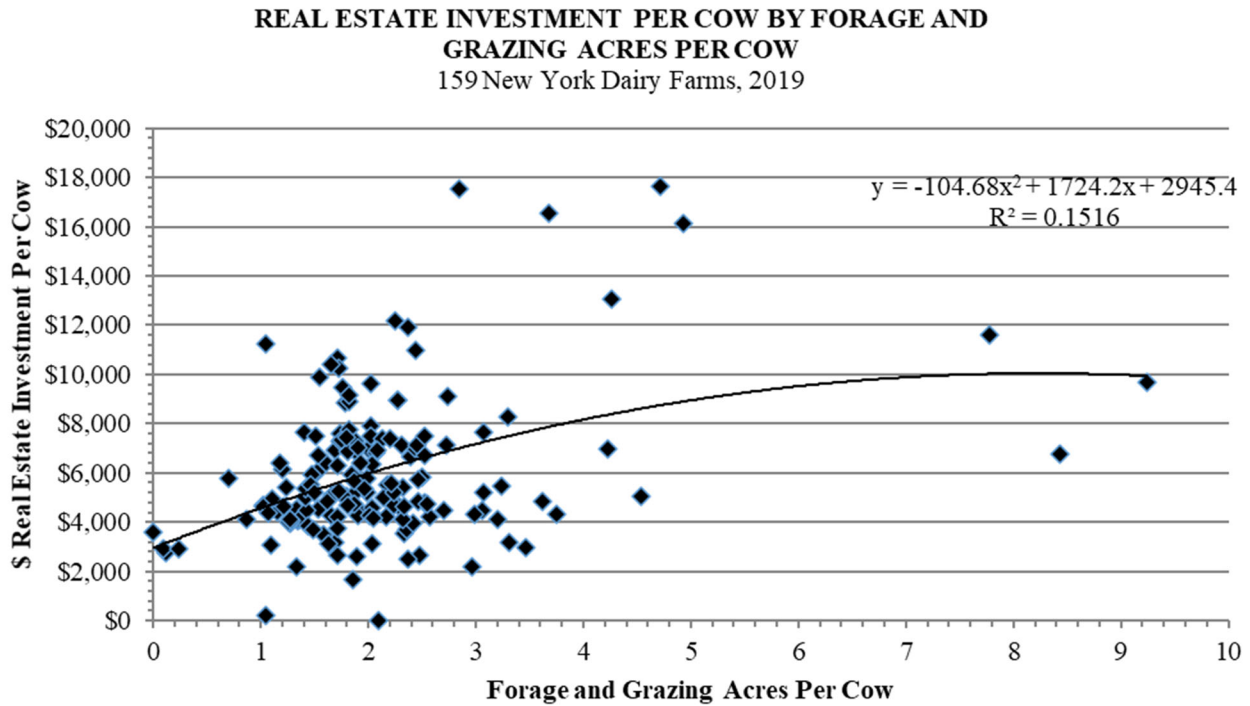
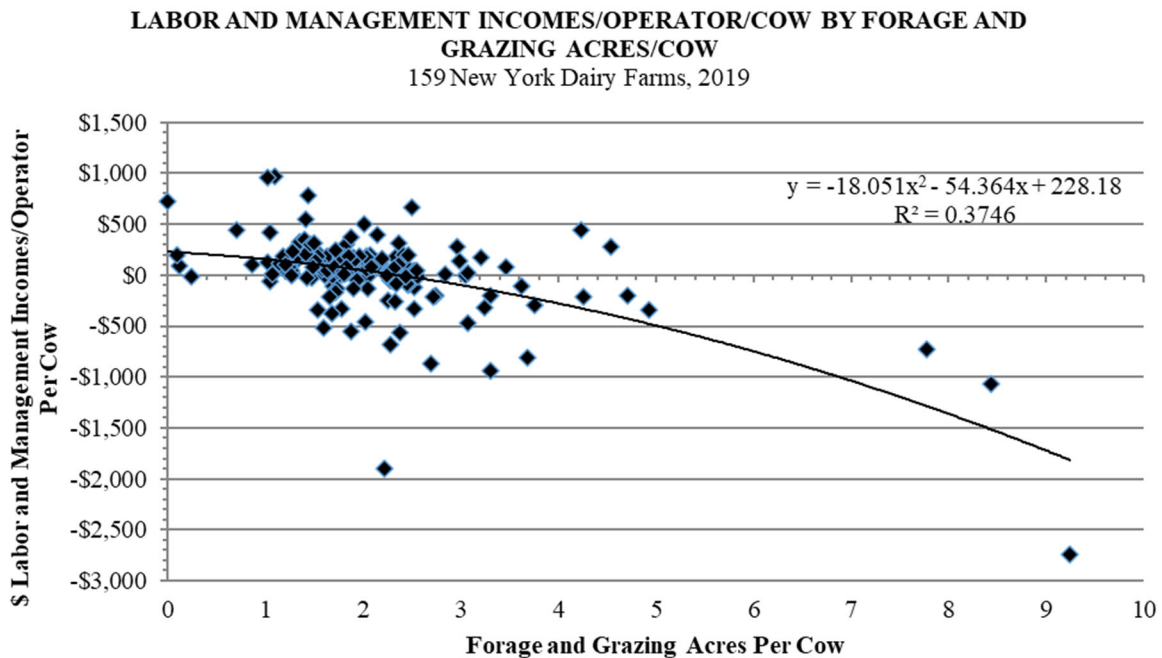


Chart 5.



Dairy Analysis

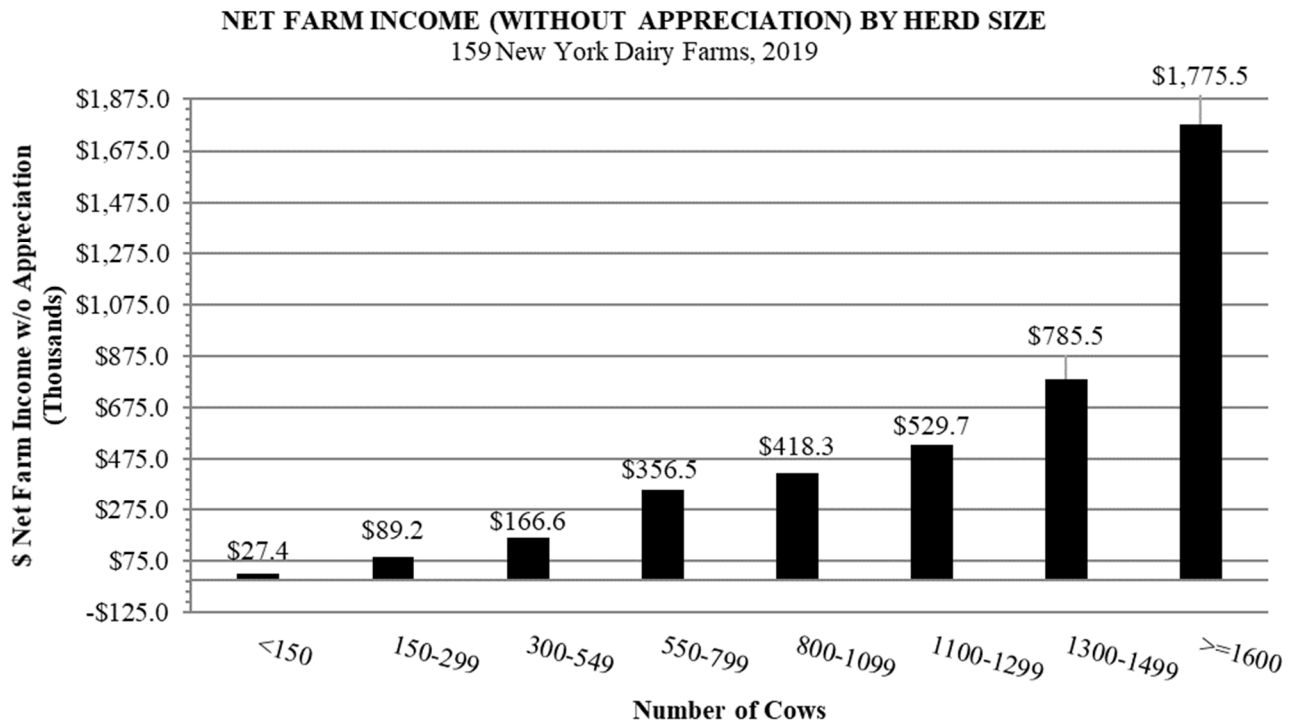
Analysis of the dairy enterprise can reveal a great deal about the strengths and weaknesses of the dairy farm business. Information on the following pages should be used in conjunction with Dairy Herd Improvement (DHI) and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures for the business.

Table 27.

DAIRY HERD INVENTORY								
159 New York Dairy Farms, 2019								
Item	Dairy Cows		Heifers				Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
<u>Average 159 Farms:</u>								
Beginning year (owned)	946	\$1,219,683	284	\$355,282	269	\$194,141	241	\$82,197
+ Change w/o appreciation		63,721		12,429		1,442		-3,961
+ Appreciation		<u>13,405</u>		<u>5,588</u>		<u>1,642</u>		<u>-421</u>
End year (owned)	996	\$1,296,809	294	\$373,299	271	\$197,225	228	\$77,814
End including leased	1,007							
Average number	986		799 (all age groups)					

Historically, there has been a strong relationship between farm size and net farm income on well-managed dairy farms. In 2019, this relationship is apparent, with income rising as herd size increases.

Chart 6.



Total milk sold and milk sold per cow, along with components produced, are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers that receive milk weights should compare milk sold per cow with their rolling herd average on the test date nearest December 31st to see how close the estimate of milk produced is to actual milk sales.

Table 28.

MILK PRODUCTION	
145 New York Dairy Farms, 2019	
Item	Average 145 Farms
Total milk sold, lbs.	25,879,779
Milk sold per cow, lbs.	26,252
Butterfat per cow, lbs.	1,027 ²⁷
Protein per cow, lbs.	816 ²⁷
Total butterfat and protein per cow, lbs.	1,843 ²⁷
Other solids per cow, lbs.	1,520 ²⁷
Total components per cow, lbs.	3,363 ²⁷

²⁷ This data is an average for the 145 farms that provided the data.

Table 29.

ANIMALS LEAVING THE HERD		
159 New York Dairy Farms, 2019		
	Average 159 Farms	
	Number	Percent ²⁸
Cows sold for beef	278	28.2
Cows sold for dairy	13	1.30
Cows died	64	6.46
Culling rate ²⁹	---	35

²⁸Percent of average number of cows in the herd.

²⁹Cows sold for beef plus cows died.

The relationship between milk output per cow and net farm income on all dairy farms is shown in Table 30 and diagrammed in Charts 7 and 8. Each spot on the diagrams represents one of the 159 farms. Farms with higher rates of production tend to have higher net farm incomes. This is also influenced by larger herd sizes; the combination of high production per cow and more cows per farm generally has led to higher net farm incomes.

Table 30.

MILK SOLD PER COW AND FARM INCOME MEASURES					
159 New York Dairy Farms, 2019					
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 20,000	13	288	\$101,585	\$353	-\$21,654
20,000 to 22,999	16	239	\$50,322	\$210	-\$24,616
23,000 to 24,999	21	630	\$336,826	\$535	\$22,238
25,000 to 25,999	28	1,387	\$949,841	\$685	\$216,500
26,000 to 26,999	30	1,185	\$616,305	\$520	\$67,737
27,000 to 27,999	26	1,147	\$840,686	\$733	\$186,811
28,000 & over	25	1,021	\$909,429	\$891	\$193,815

Historically, net farm income per cow has increased as pounds of milk sold per cow increased. This trend continued in 2019, with total net farm income and net farm income per cow increasing slightly over the range of milk production per cow, but with a relatively low R-squared value.

Chart 7.

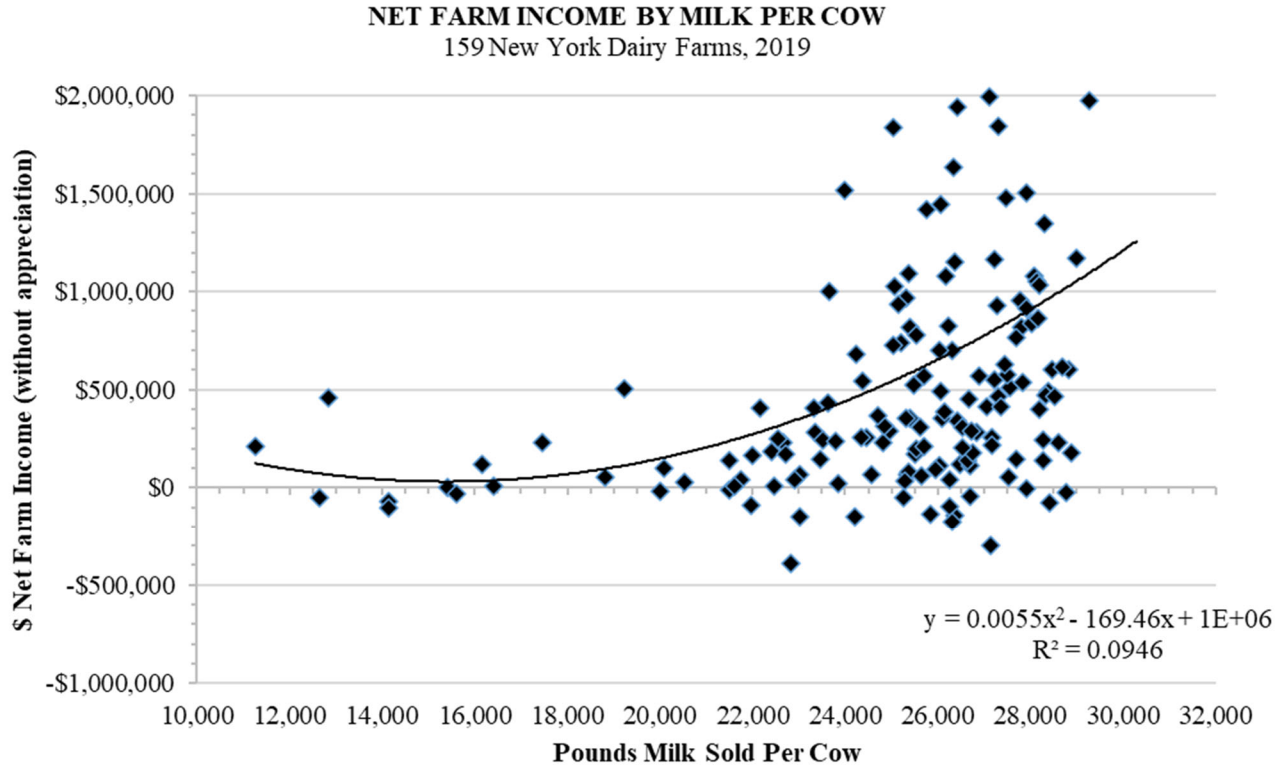
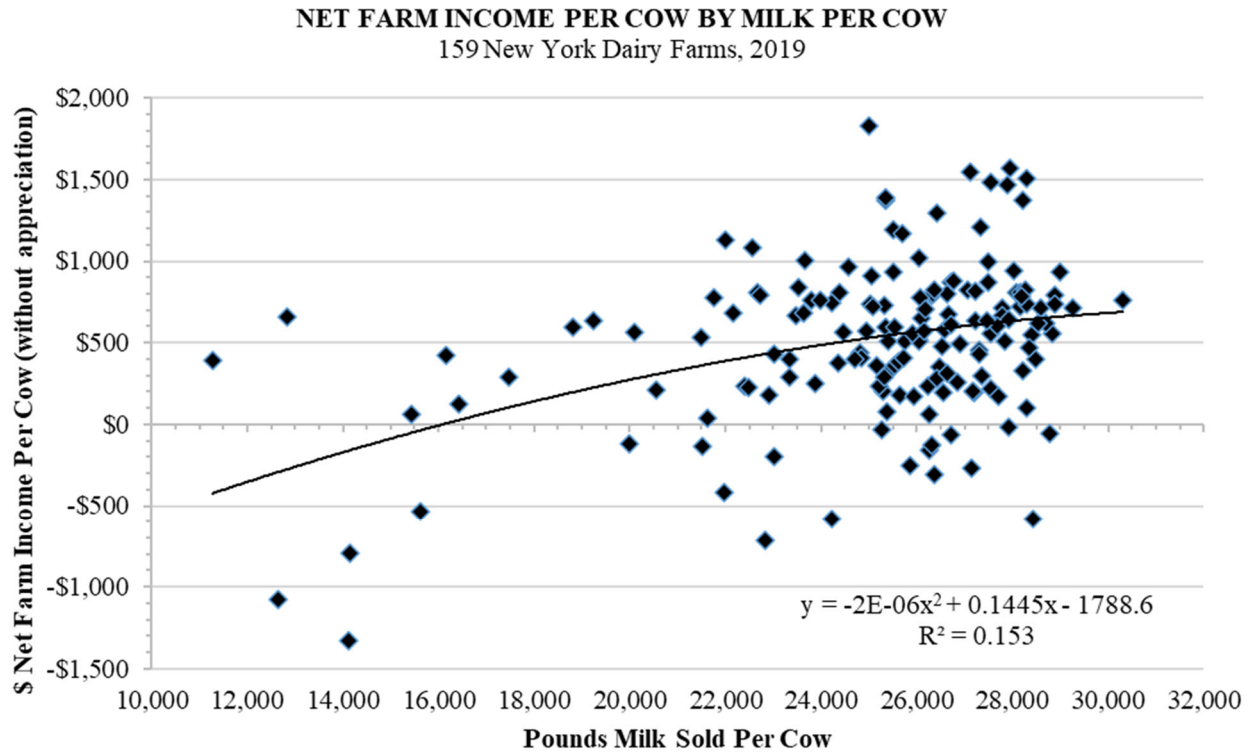


Chart 8.



Cost of Producing Milk

The cost of producing milk has been compiled using the whole farm method and is featured in the following table. Accrual receipts from milk sales can be compared with the accrual costs of producing milk per cow and per hundredweight of milk. Using the whole farm method, operating costs of producing milk are estimated by deducting non-milk accrual receipts from total accrual operating expenses including expansion livestock purchased. Purchased inputs cost of producing milk are the operating costs plus depreciation. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of unpaid family labor, the value of operators' labor and management, and the interest charge for using equity capital.

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 non-milk receipts which are used to represent total non-milk operating costs.
3. Total accrual non-milk receipts are subtracted from total accrual operating expenses including expansion livestock to calculate the operating costs 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 costs 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 costs of producing milk. This cost includes all the operating, depreciation, and imputed costs of producing milk.

Table 31. COST OF PRODUCING MILK WHOLE FARM METHOD CALCULATIONS

159 New York Dairy Farms, 2019		Average 159 Farms
Item		
Total Accrual Operating Expenses	\$ 4,527,772	
Expansion Livestock, Accrual	+ 26,048	
1. Total Accrual Operating Expenses, Including Expansion Livestock		\$ 4,553,820
Total Accrual Receipts	\$ 5,586,232	
Milk Sales, Accrual	- 5,025,119	
2. Total Accrual Nonmilk Receipts		- 561,113
3. Operating Costs of Producing Milk		\$ 3,992,707
Cwt. of Milk Sold	÷ 258,798	
Operating Costs/Cwt.	= \$15.43	
Machinery Depreciation		+ 223,710
Building Depreciation		+ 185,997
Extraordinary Expenses		+ 1,447
4. Purchased Input Cost of Producing Milk		\$ 4,403,861
Cwt. of Milk Sold	÷ 258,798	
Purchased Inputs Cost/Cwt.	= \$17.02	
Family Labor Unpaid (\$2,950/month)		+ 2,759
Real Interest on Equity Capital		+ 371,589
Value of Operators' Labor & Management		+ 190,586
5. Total Costs of Producing Milk		\$ 4,968,795
Cwt. Milk Sold	÷ 258,798	
Total Costs/Cwt.	= \$19.20	

The three measures of the accrual cost of producing milk on a per cow and per hundredweight basis are compared with accrual receipts from milk sales in Table 32.

Table 32.

ACCUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK			
159 New York Dairy Farms, 2019			
Item	Average 159 Farms		
	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>			
Operating costs	\$ 3,992,707	\$ 4,050	\$ 15.43
Purchased inputs costs	\$ 4,403,861	\$ 4,467	\$ 17.02
Total Costs	\$ 4,968,795	\$ 5,040	\$ 19.20
<u>Accrual Receipts From Milk</u>			
Net Milk Receipts	\$ 5,025,119	\$ 5,097	\$ 19.42
Net Farm Income	\$ 4,726,763	\$ 4,594	\$ 18.26
without appreciation	\$ 621,132	\$ 630	\$ 2.40
Net Farm Income with appreciation	\$ 913,183	\$ 926	\$ 3.53

The operating cost of producing milk on all 159 dairy farms averaged \$15.43 per hundredweight, leaving just \$3.99 per hundredweight to cover depreciation, unpaid labor and operator resources.

The total cost of producing milk on the 156 dairy farms averaged \$19.20 per hundredweight, \$0.22 less than the average price received for milk sold from these farms during 2019. The imputed costs or charge for the operator's labor, management and equity capital averaged \$2.18 per hundredweight in 2019; however, the farm operator received \$2.40 per hundredweight for these inputs, resulting in returns over the imputed costs.

The positive relationship between milk output per cow and the total cost of producing milk is shown in Table 33 and Chart 9. Farms selling less than 23,500 pounds of milk per cow had average total costs of production over \$20.00 per hundredweight while those selling 27,250 pounds and over averaged under \$19.00.

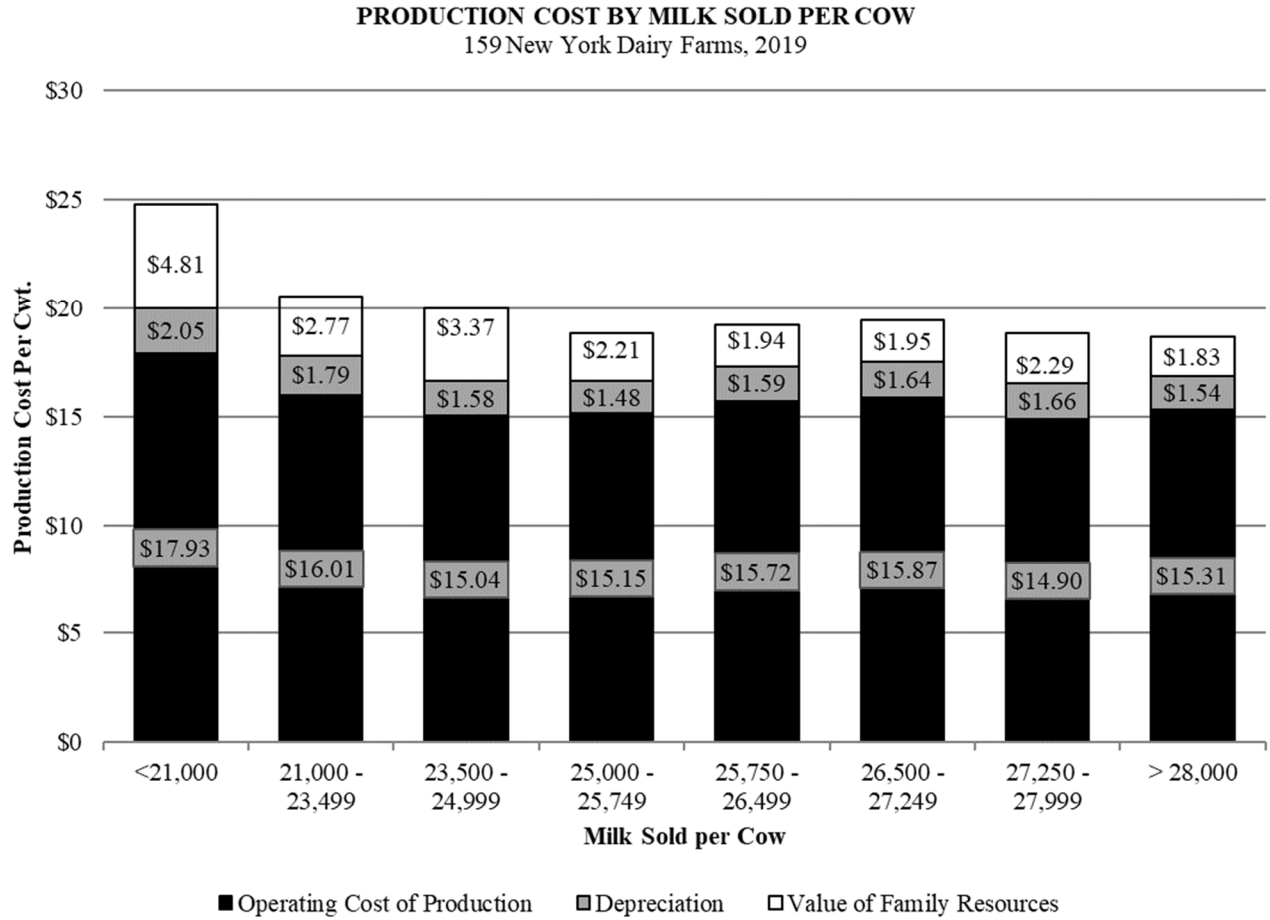
Table 33.

FARM COST OF PRODUCING MILK BY MILK SOLD PER COW

159 New York Dairy Farms, 2019

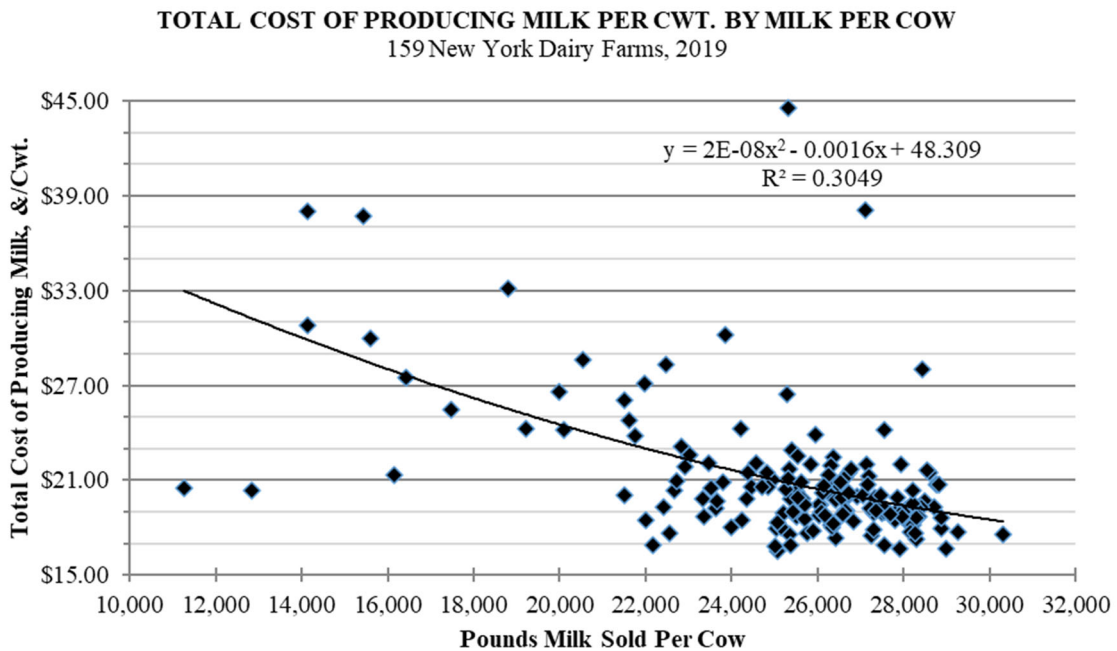
Pounds Milk Sold Per Cow	Costs per Hundredweight					Accrual Receipts from Milk Per Cwt.	Return Per Cwt. To Operator's Labor, Mgmt. & Capital
	Operating Costs		Costs of Producing Milk				
	Hired Labor	Dairy Grain & Concentrate	Total Operating	Purchased Inputs	Total		
Under 21,000	\$2.92	\$6.10	\$17.93	\$19.98	\$24.79	\$22.19	\$2.21
21,000-23,499	2.75	5.77	16.01	17.80	20.57	19.00	1.20
23,500-24,999	2.51	5.38	15.04	16.62	19.99	19.20	2.58
25,000-25,749	2.94	5.82	15.15	16.63	18.84	19.50	2.87
25,750-26,499	3.02	5.61	15.72	17.31	19.25	19.23	1.92
26,500-27,249	3.49	5.17	15.87	17.51	19.46	19.50	1.99
27,250-27,999	3.05	5.69	14.90	16.56	18.85	19.44	2.88
28,000 & over	2.66	5.88	15.31	16.85	18.68	19.36	2.51

Chart 9.



The relationship between total cost of producing milk and milk sold per cow is diagrammed in Chart 10. As milk sold per cow increases, on average, total cost of production generally decreases.

Chart 10.



Data in Table 34 and Chart 11 show that the average total cost of production generally declines as herd size increases. This is attributable to spreading the value of family resources over more units of output.

Total operating costs are lowest at the largest herd size group, followed by the 2nd largest herd size group. As hired labor provides a higher percentage of labor on farms, operating costs tend to increase. However, as farm size continues to increase, there appears to be labor efficiencies and other cost efficiencies that offset the increases in hired labor and lead to lower operating costs.

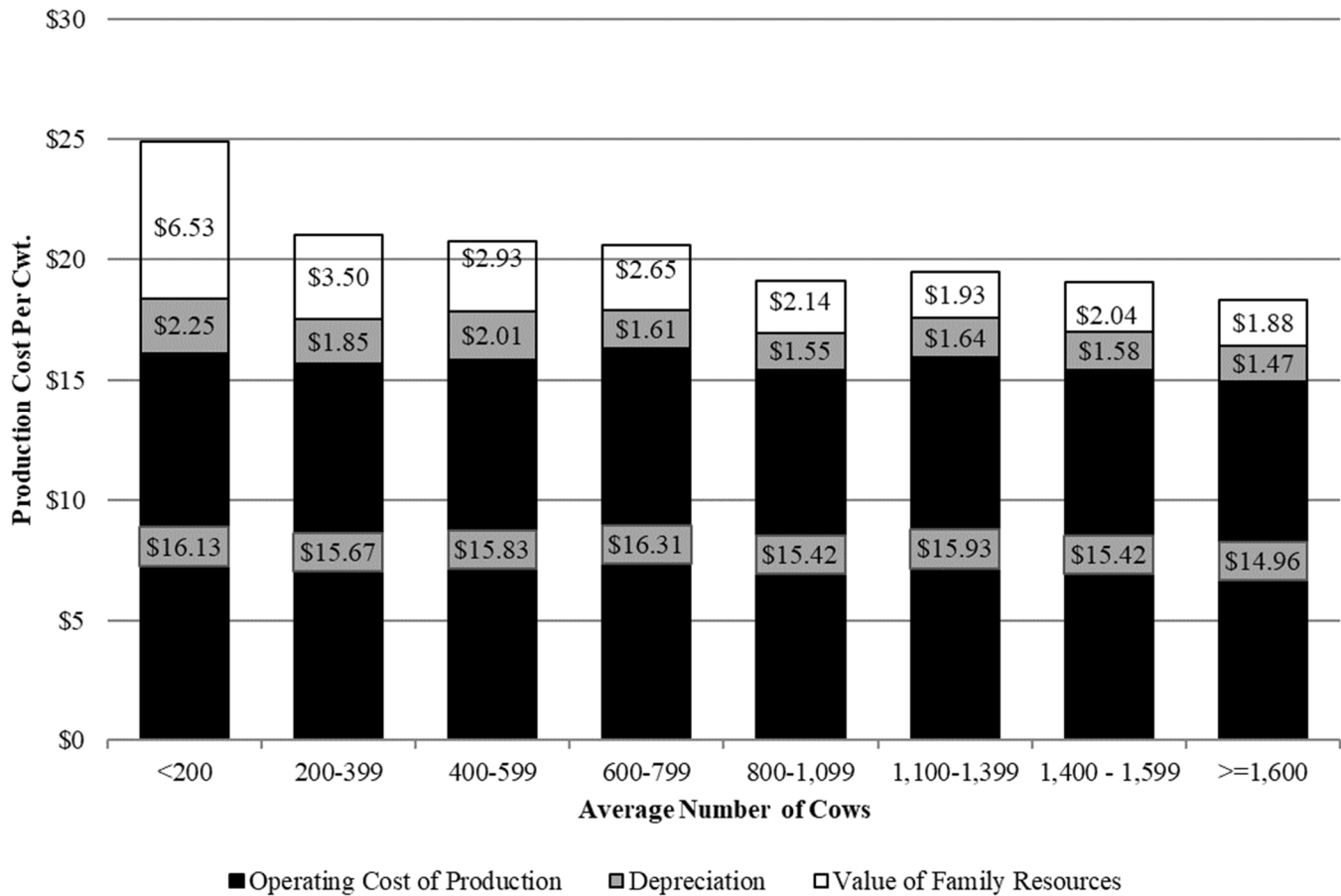
Table 34.

FARM COST OF PRODUCING MILK BY HERD SIZE
159 New York Dairy Farms, 2019

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 200	\$1.36	\$6.54	\$16.13	\$18.38	\$24.91	\$19.84	\$1.46
200 to 399	2.36	6.06	15.67	17.52	21.02	19.22	1.70
400 to 599	2.84	5.52	15.83	17.84	20.77	19.49	1.65
600 to 799	3.14	5.55	16.31	17.92	20.57	19.95	2.03
800 to 1,099	2.82	5.81	15.42	16.97	19.11	19.27	2.30
1,100 to 1,399	3.23	5.67	15.93	17.57	19.50	19.58	2.01
1,400 to 1,599	3.02	5.71	15.42	17.00	19.04	19.44	2.44
1,600 and over	2.97	5.55	14.96	16.43	18.31	19.29	2.86

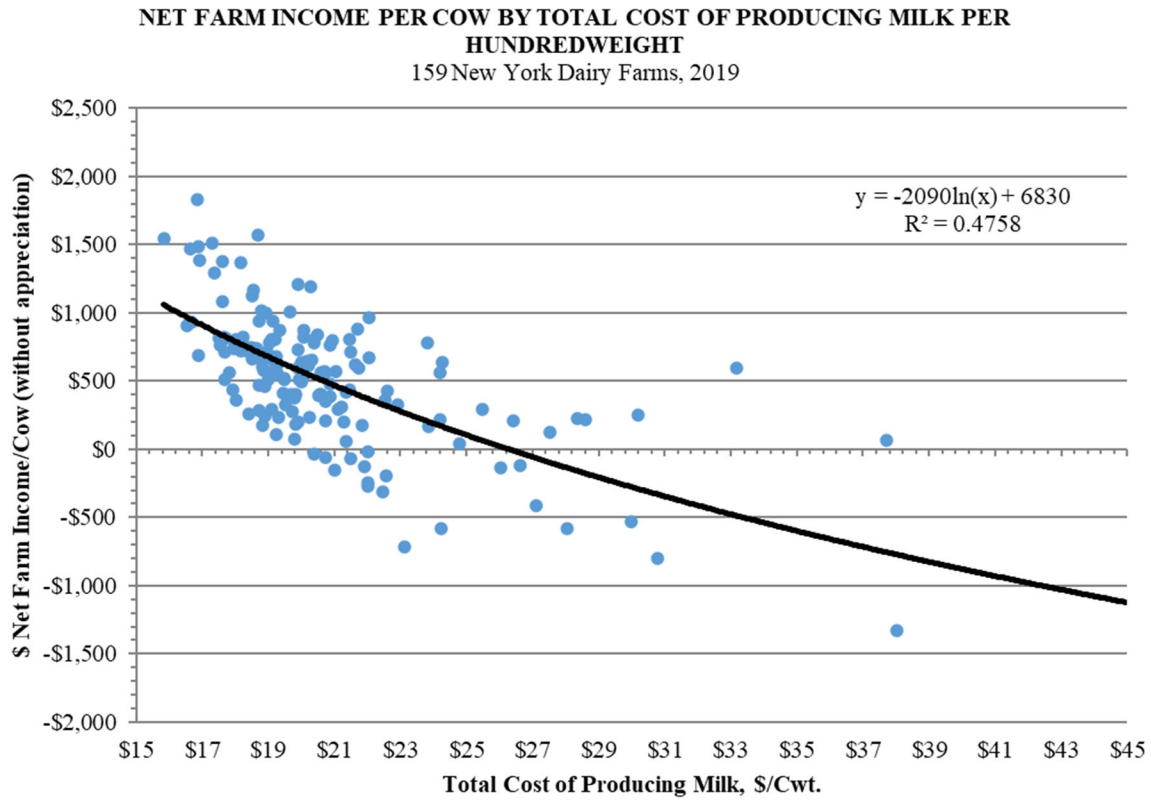
Chart 11.

PRODUCTION COST BY HERD SIZE
159 New York Dairy Farms, 2019



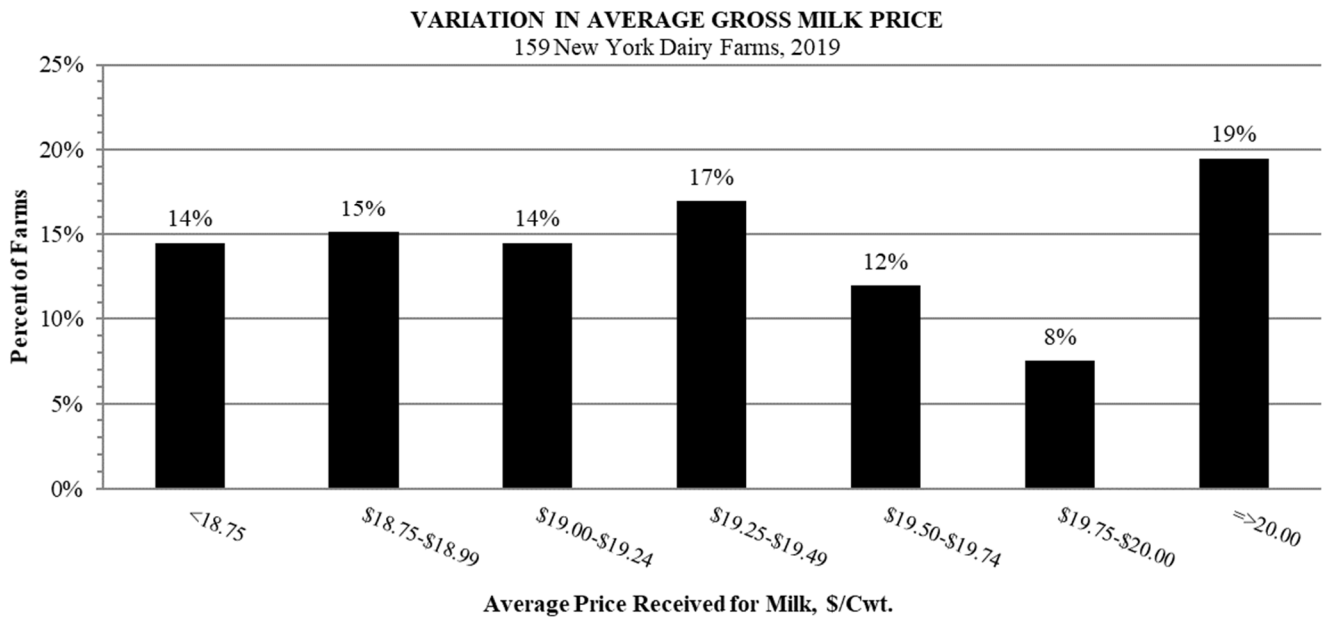
The importance of cost control and its impact on farm profitability are illustrated in Chart 12. As the total cost of producing milk per hundredweight increased, net farm income per cow fell. Most farms with net farm income per cow over \$500 had total costs below \$21 per hundredweight.

Chart 12.



The average price per hundredweight of milk sold is calculated by dividing gross milk receipts by the total hundredweights of milk sold. There is considerable variation among participating farms. The variations in average price received and the distribution of the farms around the mean are shown below. The average gross milk price for the 159 farms was \$19.42 per hundredweight. (Table 32)

Chart 13.



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 an evaluation of the dairy enterprise.

Table 35.

DAIRY RELATED ACCRUAL EXPENSES		
159 New York Dairy Farms, 2019		
Item	Average 159 Farms	
	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$ 1,486	\$ 5.66
Purchased dairy roughage	<u>102</u>	<u>0.39</u>
Total Purchased Dairy Feed	\$ 1,589	\$ 6.05
Purchased grain & concentrate as % of milk receipts		30%
Purchased feed & crop expense	\$ 1,849	\$ 7.04
Purchased feed & crop expense as % of milk receipts		37%
Breeding	\$ 47	\$ 0.18
Veterinary & medicine	153	0.58
Milk marketing	303	1.15
Bedding	91	0.35
Milking supplies	89	0.34
Cattle lease	4	0.02
Custom boarding	82	0.31
bST expense	0	0.00
Livestock professional fees	16	0.06
Other livestock expenses	24	0.09

Feed costs per cow and per hundredweight of milk sold are influenced by several factors. These cost measures are affected by the amount of homegrown grains fed, quality, and quantity of the roughage harvested, and the number of young stock. 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, including milk replacer, it represents feed cost for one cow and associated replacements being raised.

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 homegrown 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 on page 38. Generally, as purchased feed and crop expenses decrease, profits increase. However, this isn't always true; if milk production falls too low, profits may actually decrease. Net milk income over purchased concentrate per cow shows a similar relationship when compared to rate of return on assets without appreciation.

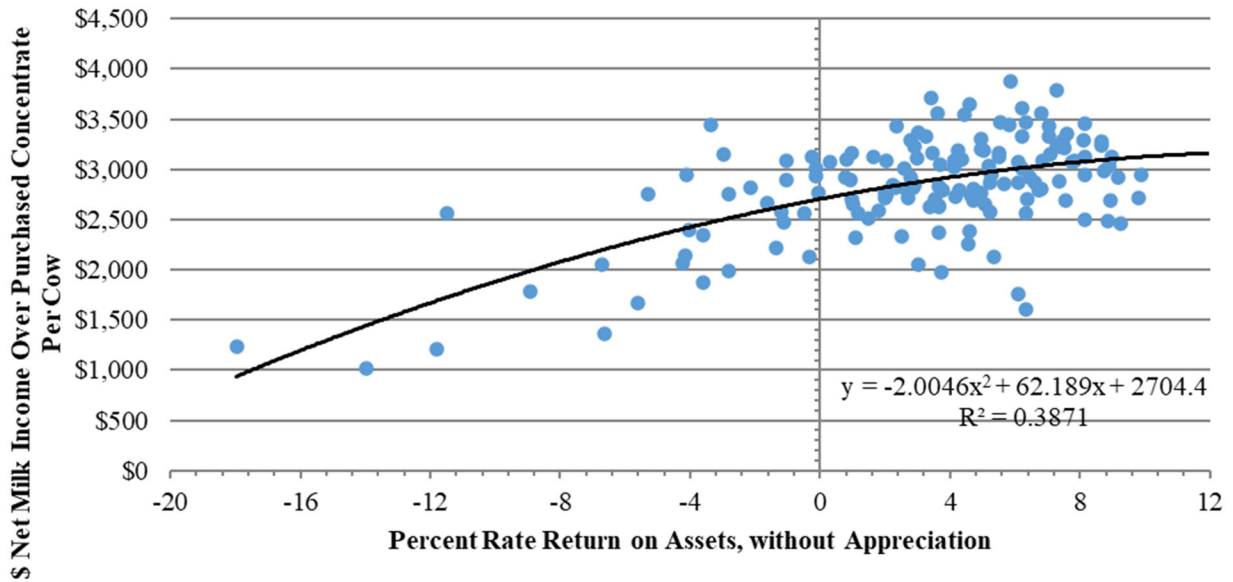
Table 36.

**PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT
OF MILK AND FARM INCOME MEASURES**
159 New York Dairy Farms, 2019

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
\$8.25 or more	22	454	6.7	24,601	\$227,888	\$28,840	\$140
7.75 to 8.24	26	790	7.4	26,952	373,681	49,754	147
7.50 to 7.74	10	1,304	6.3	26,762	493,380	28,787	109
7.00 to 7.49	37	1,018	7.9	26,485	550,618	85,093	203
6.50 to 6.99	26	1,339	6.9	26,012	1,111,462	182,800	395
6.00 to 6.49	18	871	8.0	25,944	675,657	115,646	315
Less than 6.00	20	1,250	8.4	26,246	884,213	173,172	284

Chart 14.

**NET MILK INCOME OVER PURCHASED CONCENTRATE PER COW BY
RETURN ON ASSETS**
159 New York Dairy Farms, 2019



Milk Income and Marketing Expense Breakdown

To examine the breakdown of the gross milk income and the marketing expenses, data is used from farms that 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 Tables 37 and 38. 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.

The component value is the portion of the milk check that is generated from the butterfat, protein, and other solids that are produced. All farms are paid the same value per pound of components produced, with the variation in the component portion of the milk price being driven by the percent of component production and when during the year the components were produced.

The PPD (Producer Price Differential) is the location adjustment associated with the federal milk marketing order and is primarily dictated by where the business is located within the state.

Premiums are the additional sources of milk revenue associated with quality premiums, volume, and market premiums.

Deductions are those expenses associated with the sale of milk that are deducted on the milk check. These include milk hauling, stop charges, fuel surcharges, state and federal promotion, cwt program expense, co-op dues, and marketing adjustments.

Marketing Programs is where the net benefit associated with marketing programs associated with utilization of the futures markets or other programs to market milk or manage milk price risk.

Patronage reports the cooperative earnings associated with the sale of milk that was returned to member farms.

Table 37 reports the averages for the farms providing this data. Table 38 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.

Table 37.

AVERAGE³⁰ MILK INCOME AND MARKETING REPORT
150 New York Dairy Farms, 2019

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
BASE FARM PRICE					
Butterfat	1,059,913	3.93%	\$2.51	\$2,656,596	\$ 9.86
Protein	841,302	3.11%	\$2.40	\$2,021,800	\$ 7.44
Solids	1,568,548	5.78%	\$0.19	\$290,419	\$ 1.07
Total Component Contribution					\$ 18.38
PPD	27,119,630			\$83,984	\$ 0.33
Base Farm Price					\$ 18.71
Premiums					
Quality				\$73,741	\$ 0.27
Volume				\$16,888	\$ 0.05
Market Premiums				\$63,965	\$ 0.18
Total Premiums					\$ 0.49
BASE FARM PRICE + PREMIUM					\$ 19.21
Deductions					
Promo				\$40,600	\$ 0.15
Hauling				\$196,248	\$ 0.76
Coop Dues				\$75,034	\$ 0.27
Total Deductions				\$317,858	\$ 1.18
BASE FARM PRICE + PREMIUMS – DEDUCTIONS					\$ 18.03
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				\$11,334	\$ 0.12
Total Marketing Income					\$ 0.12
Patronage Dividends				\$46,716	\$ 0.18
NET PRICE RECEIVED ON FARM, ALL SOURCES					\$ 18.32
Net Marketing Value (PPD + Total Premiums – Total Deductions), \$ per cwt.					\$ -0.35

³⁰ 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.

Table 38.

MILK PRICE INFORMATION BY QUINTILE³¹
 (Each Category Sorted Independently)
 150 New York Dairy Farms, 2019

	←	Lowest Quintile	←	→	Highest Quintile	→
Butterfat, %		3.73	3.84	3.91	3.98	4.21
Protein, %		3.00	3.07	3.10	3.13	3.24
Other Solids, %		5.64	5.75	5.78	5.80	5.91
Butterfat, \$ per Cwt.		9.35	9.63	9.79	9.98	10.55
Protein, \$ per Cwt.		7.15	7.35	7.43	7.51	7.81
Other solids, \$ per Cwt.		1.05	1.07	1.07	1.08	1.10
Total Component Value per Cwt.		\$ 17.69	\$ 18.08	\$ 18.31	\$ 18.51	\$ 19.31
PPD, \$ per Cwt.		0.08	0.20	0.29	0.41	0.68
Base Farm Price per Cwt.		\$ 17.98	\$ 18.38	\$ 18.61	\$ 18.84	\$ 19.75
Quality, \$ per Cwt.		0.05	0.16	0.24	0.38	0.52
Volume, \$ per Cwt.		0.00	0.00	0.02	0.07	0.14
Market premium, \$ per Cwt.		0.00	0.00	0.00	0.05	0.84
Total Premium, \$ per Cwt.		0.10	0.24	0.35	0.51	1.27
Base Farm Price + Premiums per Cwt.		\$ 18.32	\$18.78	\$ 19.03	\$ 19.30	\$ 20.61
Promotion, \$ per Cwt.		0.15	0.15	0.15	0.15	0.15
Hauling, \$ per Cwt.		0.46	0.64	0.73	0.87	1.08
Coop Dues, \$ per Cwt.		0.04	0.10	0.18	0.50	0.56
Total Deductions per Cwt.		\$ 0.80	\$ 0.96	\$ 1.12	\$1.32	\$ 1.70
Base + Premiums – Deductions per Cwt.		\$ 17.10	\$ 17.56	\$ 17.87	\$ 18.18	\$ 19.41
Futures contract, forward contracting, \$ per Cwt.		-0.05	0.00	0.07	0.17	0.39
Total Marketing Income, \$ per Cwt.		\$-0.05	\$ 0.01	\$ 0.07	\$ 0.17	\$ 0.39
Patronage Dividends, \$ per Cwt.		\$0.00	\$ 0.00	\$ 0.01	\$ 0.12	\$ 0.75
Net Price Received From All Sources, \$ per Cwt.		\$ 17.27	\$ 17.76	\$ 18.21	\$ 18.61	\$ 19.75
Net Marketing Value (PPD + Total Premiums – Total Deductions), \$ per cwt.		\$-1.02	\$-0.69	\$-0.45	\$ -0.22	\$ 0.61

³¹ Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals.

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

Table 39.

CAPITAL EFFICIENCY				
159 New York Dairy Farms, 2019				
Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
<u>Average 159 Farms:</u>				
Farm capital	\$ 577,803	\$ 11,540	\$ 6,383	\$ 12,180
Real estate		5,450		5,752
Machinery & equipment	88,364	1,765	976	
<u>Ratios</u>				
Asset turnover ratio	Operating Expense	Interest Expense	Depreciation Expense	
0.52	0.78	0.04	0.07	

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 above 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.

Measures of labor efficiency are key indicators of the work accomplished by an average worker. The average worker includes all hours worked by owners, family members, and hired employees. The average cows per worker is the number of cows taken care of per worker equivalent. Pounds of milk sold per worker equivalent is an important measure of labor efficiency that takes into account both the number of cows and milk production. Table 40 highlights labor efficiency measures. Table 41 lists the different sources of labor hours for the participating farms.

Table 40.

LABOR EFFICIENCY		
159 New York Dairy Farms, 2019		
Labor Efficiency	Total	Per Worker ³²
Cows, average number	986	50.07
Milk sold, pounds	25,879,779	1,314,528
Tillable acres	1,782	91

³² The method used to calculate worker equivalent incorporates the number of hours 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.

Table 41.

LABOR FORCE INVENTORY AND ANALYSIS
159 New York Dairy Farms, 2019

Labor Force	Months	Age	Years of Education	Value of Labor & Mgmt.
Operator number 1	12.58	59	14	\$ 74,760
Operator number 2	9.46	54	14	56,225
Operator number 3	6.22	44	14	34,138
Operator number 4	2.88			15,330
Operator number 5	1.38			7,471
Operator number 6	.45			2,662
Family paid	1.98			
Family unpaid	.91			
Hired	<u>200.39</u>			
Total	236.25/	12 = 19.69 Worker Equivalent 2.40 Operator/Manager Equivalent		

Labor Costs	Average 159 Farms		
	Total	Per Cow	Per Cwt.
Value of operator(s) labor (\$3,200/month)	\$ 108,801	\$ 110	\$ 0.42
Family Unpaid (\$2,950/month)	2,753	3	0.01
Hired	<u>764,841</u>	<u>776</u>	<u>2.96</u>
Total Labor	\$ 876,395	\$ 889	\$ 3.39
Machinery Cost	<u>835,706</u>	<u>848</u>	<u>3.23</u>
Total Labor & Machinery	\$1,712,101	\$ 1,737	\$ 6.62
Hired labor expenses per hired worker equivalent		\$45,353	
Hired labor expense as % of milk sales		15.22%	

Table 42 shows the relationship between labor efficiency and return on all capital without appreciation. Labor efficiency improvements are one method that is used to allow the business to reward their employees while maintaining their labor costs per hundredweight of milk produced. A second area is improved cost control of day-to-day activities, which is one reason why some farms can generate higher than average profits while having some of the higher labor costs per hundredweight of milk sold. Chart 15 highlights the relationship between percent hired labor on the farm and hired labor costs per hundredweight. As the percent increases, the cost per hundredweight generally increases. The combination of annual hired cost per worker and labor efficiency has a large impact on what the hired cost per hundredweight will be.

Table 42.

MILK SOLD PER WORKER AND NET FARM INCOME
159 New York Dairy Farms, 2019

Pounds of Milk Sold per Worker	No. of Farms	No. of Cows	Pounds Milk per Cow	Operating Expense Ratio	Net Farm Income (without Appreciation)	Labor & Management Income per Operator
Under 750,000	16	93	19,628	0.87	6,084	-45,732
750,000 to 949,999	18	448	22,244	0.77	219,158	30,418
950,000 to 1,099,999	19	657	24,853	0.81	229,193	3,264
1100000 to 1,199,999	20	775	26,211	0.81	291,728	940
1,200,000 to 1,299,999	26	1,097	26,356	0.79	674,353	92,454
1,300,000 to 1,399,999	19	1,452	25,737	0.77	787,599	137,072
1,400,000 to 1,499,999	16	1,214	27,061	0.80	654,135	80,869
1,500,000 and Greater	25	1,747	27,000	0.75	1,662,595	456,604

Chart 15.

**HIRED LABOR EXPENSE PER CWT OF MILK SOLD VERSUS
PERCENT OF LABOR PROVIDED BY HIRED SOURCES
151 New York Dairy Farms With Hired Labor, 2019**

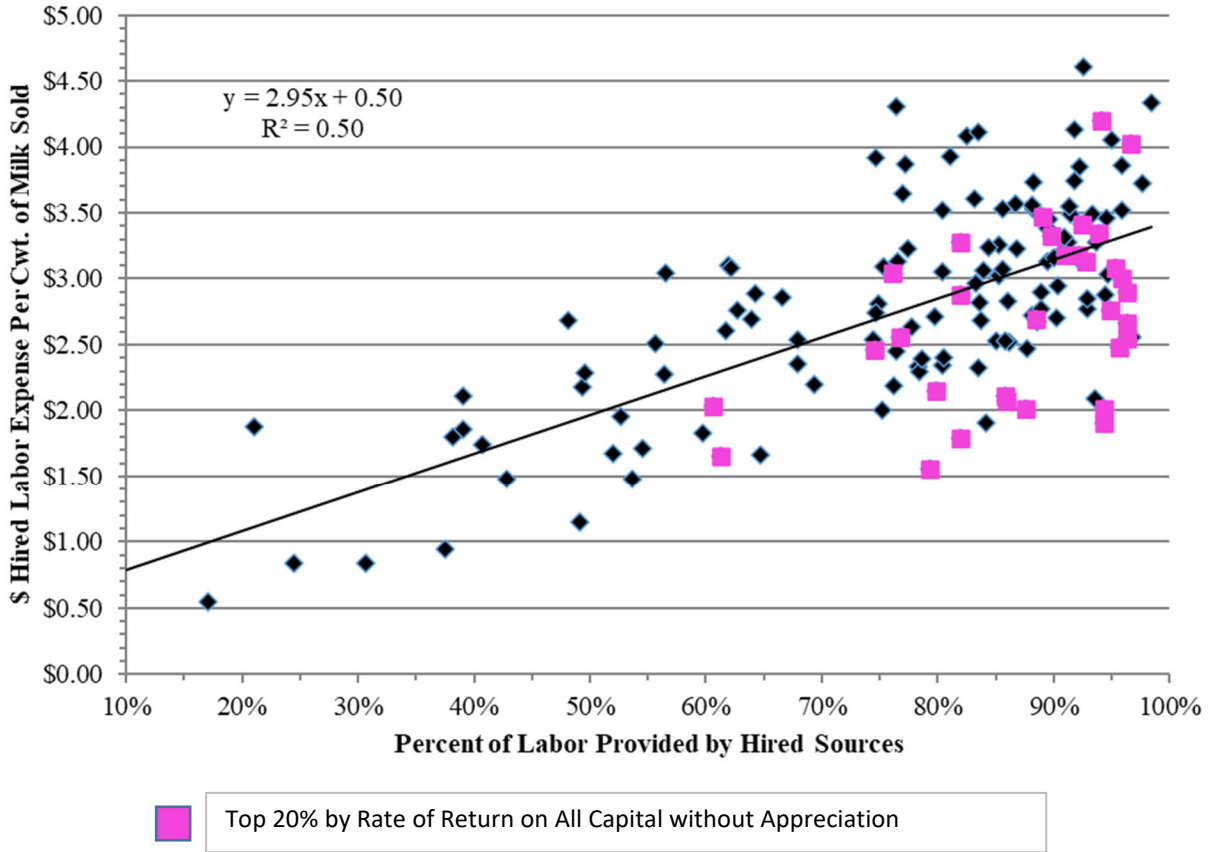


Table 43 below is the business chart for labor costs on a per worker equivalent and per hour basis and shows the range of costs for 148 farms. Hired labor expenses are all paid expenses that are associated with labor, including gross wages, workman’s compensation, health, insurance, federal and state employment taxes, and other paid benefits.

Table 43.

HIRED LABOR EXPENSE BUSINESS CHART
151 New York Dairy Farms with Hired Labor, 2019

Decile	Percent of Labor from Hired Sources	Hired Labor Expense per Cwt	Hired Labor Expense as % of Milk Sales	Hired Labor Expense per Hired Worker Equivalent	Hired Labor Expense per Hour
Average of Lowest Decile	30%	\$1.15	6%	\$29,395	\$10.65
	57	1.93	10	37,851	13.71
	70	2.26	12	39,166	14.19
	77	2.53	13	40,189	14.56
	82	2.72	14	41,796	15.14
	85	2.92	15	43,566	15.78
	88	3.11	16	44,908	16.27
	91	3.29	17	46,575	16.88
	93	3.56	18	49,255	17.85
Average of Highest Decile	96	4.13	21	55,565	20.13

HERD SIZE BREAKDOWN

With a large variation in herd size in New York state, the following section provides information regarding five different herd size categories: Less than 250 cows, 250 to 624 cows, 625 to 999 cows, 1,000 to 1,449 cows, and 1,450 cows and greater. Management and operating challenges are different across herd sizes and this information provides benchmarks that can be useful to compare your farm to farms of similar size.

Table 44 summarizes the 5 herd size groups for selected data and shows the similarities and differences between the herd size groups.

For each herd size group, there are 6 tables. The first three report the herd profile for the size group, the next two report on the progress of the farm over two years for the farms in that herd size that participated both years. The final table is a business chart for 2019 for the specific category.

Less than 250 cows:	Tables 45 through 50
250 to 624 cows:	Tables 51 through 56
625 to 999 cows:	Tables 57 through 62
1,000 to 1,449 cows:	Tables 63 through 68
1,450 cows and greater:	Tables 69 through 74

The herd profile tables are a business management tool that can be utilized to assess strengths and weakness of a business. With each row sorted independently and each number representing an average of 20 percent of the farms, the range in each category is shown. Please note that each row is sorted independently, so it is not necessarily the same farms represented in each quintile when looking through the herd profile. By placing a mark for their own business data, a business manager can see how the business compares to these herd profiles. Generally, the higher profit farms tend to have more marks to the left of average, and the farms with lower earnings tend to have more marks to the right of average.

The progress of the farm over last two years shows how the same farms changed from one year to the next for selected production, business, and financial measures along with the income and expenses per cow and per hundredweight. A business manager can look at how their business changed versus these different herd size groups.

The Farm Business Chart is a tool which can be used in analyzing a business in a manner similar to the herd profiles, except the different categories are in columns vs rows. A business manager can compare their business by drawing a line through or near the closest figure in each column that represents the current level of herd performance. The five figures in each column represents the average of each 20 percent or quintile of farms included in the summary. Use this information to identify business areas where more challenging goals or improvements are needed.

Table 44.

SELECTED BUSINESS FACTORS FOR FIVE HERD SIZE GROUPS

159 Dairy Farms, New York State, 2019

Item	<250 Cows	250 to 624 Cows	625 to 999 Cows	1,000 to 1,449 Cows	≥ 1,450 Cows
# of Farms	32	31	31	34	31
Size of Business					
Average Cows	135	434	807	1,215	2,344
Percent Heifers to Cows	88%	73%	87%	81%	80%
Acres per Cow	2.82	2.04	2.21	1.83	1.63
Number of Worker Equivalents	4.02	9.35	16.92	24.57	43.60
Number of Owner Operators	1.95	2.12	2.56	2.30	3.11
Rates of Production					
Milk Sold per Cow	23,062	24,756	25,186	26,930	26,700
Hay DM per Acre, Tons	2.6	3.1	3.1	3.3	3.3
Corn Silage per Acre, Tons	17.7	18.3	18.6	18.4	18.7
Percent Butterfat	3.94%	3.90%	4.00%	3.90%	3.89%
Percent Protein	3.12%	3.09%	3.12%	3.10%	3.10%
Cull Rate, Percent	35.0%	32.0%	35.0%	35.0%	35.0%
Labor Efficiency					
Cows per Worker	33.7	46.4	47.7	49.4	53.8
Milk Sold per Worker	776,226	1,147,750	1,200,856	1,331,347	1,435,369
Cost Control					
Dairy Feed & Crop Expense per Cwt. Milk	7.79	7.12	7.20	7.25	6.82
Labor & Machinery Costs per Cow	\$2,213	\$1,839	\$1,802	\$1,752	\$1,658
Hired Labor Cost per Cwt.	\$1.68	\$2.72	\$2.96	\$3.07	\$3.00
Hired Labor Costs per Worker Equivalent	\$37,514	\$42,455	\$42,899	\$45,598	\$46,844
Crop Input Costs per Acre	\$107	\$144	\$135	\$153	\$143
Machinery Costs per Acre	\$378	\$461	\$420	\$473	\$488
Operating Cost of Producing Milk per Cwt.	\$15.77	\$15.98	\$15.65	\$15.89	\$14.98
Purch. Input Cost of Producing Milk per Cwt.	\$17.93	\$17.89	\$17.29	\$17.46	\$16.48
Total Cost of Producing Milk per Cwt.	\$23.63	\$20.77	\$19.75	\$19.38	\$18.42
Operating Expense Ratio	0.79	0.80	0.79	0.80	0.76
Capital Efficiency					
Farm Capital Per Cow	\$14,910	\$12,005	\$11,826	\$11,464	\$11,199
Machinery and Equipment per Cow	\$3,248	\$2,215	\$2,022	\$1,737	\$1,521
Real Estate per Cow	\$7,435	\$5,745	\$5,576	\$5,285	\$5,328
Asset Turnover Ratio	0.35	0.48	0.50	0.53	0.53
Working Capital as % of Tot. Oper. Expense	23%	18%	16%	19%	27%
Profitability					
Net Milk Price	\$18.32	\$18.19	\$18.47	\$18.31	\$18.18
Labor & Management Income per Operator	-\$16,544	-\$3,862	\$60,086	\$98,514	\$291,181
Rate Return on Equity Capital w/o Apprec.	-3.8%	0.7%	4.5%	5.3%	8.2%
Rate Return on All Capital w/o Apprec.	-1.3%	2.3%	4.6%	5.1%	7.2%
Financial Summary(based on market value, excluding deferred taxes)					
Debt to Asset Ratio	0.28	0.34	0.34	0.38	0.31
Farm Debt per Cow	\$4,163	\$4,059	\$4,007	\$4,378	\$3,552
Debt Coverage Ratio	0.90	1.06	0.43	0.70	1.34

Table 45.

SELECTED PRODUCTION AND FINANCIAL FACTORS

32 Farms Less Than 250 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Size of Business					
Average Cows	55	94	138	178	232
Average Heifers	35	80	127	163	213
Acres per Cow	1.75	2.25	2.67	3.29	5.57
Number of Worker Equivalents	2.1	2.9	3.7	4.9	6.9
Number of Owner Operators	1.0	1.4	2.0	2.4	3.3
Rates of Production					
Milk Sold per Cow	27,391	24,672	22,608	21,068	15,312
Hay DM per Acre, Tons	4.4	3.1	2.7	2.0	1.5
Corn Silage per Acre, Tons	22.7	19.8	18.7	15.5	10.3
Percent Butterfat	4.3	4.0	3.9	3.7	0.0
Percent Protein	3.3	3.1	3.1	3.0	0.0
Cull Rate, Percent	20.1	30.9	36.7	40.0	52.0
Labor Efficiency					
Cows per Worker	51.7	39.0	35.2	27.7	20.7
Milk Sold per Worker	1,218,604	947,250	773,053	603,193	366,376
Cost Control					
Dairy Feed & Crop Expense per Cwt. Milk	6.28	7.40	7.97	8.67	9.35
Labor & Machinery Costs per Cow	1,640	1,944	2,117	2,638	3,395
Hired Labor Cost per Cwt.	0.00	0.59	1.60	2.29	2.89
Hired Labor Costs per Worker Equivalent	0	20,591	33,621	38,536	47,615
Crop Input Costs per Acre	36	84	113	136	180
Machinery Costs per Acre	238	325	371	430	583
Operating cost of Producing Milk per Cwt.	13.38	14.82	16.24	17.46	21.53
Purch. Input Cost of Producing Milk per Cwt.	15.04	16.97	18.37	20.45	24.35
Total Cost of Producing Milk per Cwt.	19.26	22.25	25.38	28.27	35.87
Operating Expense Ratio	0.69	0.76	0.79	0.85	1.06
Capital Efficiency					
Farm Capital Per Cow	10,001	11,537	13,137	17,357	24,958
Machinery and Equipment per Cow	1,637	2,271	2,959	4,255	6,308
Real Estate per Cow	4,086	4,959	6,370	9,211	14,582
Asset Turnover Ratio	0.54	0.44	0.38	0.26	0.21
Working Capital as % of Tot. Oper. Expense	48	31	21	15	0
Profitability					
Labor & Management Income per Operator	63,947	8,571	-17,119	-42,384	-101,786
Rate Return on Equity Capital w/o Apprec.	6.18	-0.44	-4.74	-8.15	-21.48
Rate Return on All Capital w/o Apprec.	5.62	0.91	-2.02	-4.32	-11.07
Financial Summary(based on market value, excluding deferred taxes)					
Debt to Asset Ratio	0.03	0.22	0.32	0.37	0.50
Farm Debt per Cow	457	2,778	4,226	5,672	7,747
Debt Coverage Ratio	11.69	1.81	1.20	0.84	-0.22

Table 46.

RECEIPTS AND EXPENSES PER COW
32 Farms Less Than 250 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	55	94	138	178	232
Cwt. of Milk Sold	9,357	19,826	32,694	41,559	58,055
<u>Accrual Operating Receipts</u>					
Milk	5,291	4,786	4,414	4,213	3,068
Dairy cattle	436	291	185	137	-68
Dairy calves	89	38	17	5	-15
Other livestock	110	6	0	0	-22
Crops	465	195	70	-65	-399
Miscellaneous receipts	532	265	183	136	78
Total Receipts	6,031	5,397	5,081	4,594	3,214
<u>Accrual Operating Expenses</u>					
Hired labor	0	118	333	518	726
Dairy grain & concentrates	987	1,211	1,381	1,570	1,883
Dairy roughage	0	0	0	10	135
Nondairy feed	0	0	0	0	45
Professional nutritional services	0	0	0	0	0
Machinery hire/rent/lease	0	9	33	114	266
Machinery repair & farm vehicle exp.	139	227	283	355	567
Fuel	90	124	157	204	258
Replacement livestock	0	0	0	0	90
Breeding	19	40	51	67	120
Veterinary, medicine & hoof care	66	97	118	148	207
Milk marketing	192	247	275	314	414
Bedding	18	71	93	108	165
Milking supplies	41	63	95	120	175
Cattle lease	0	0	0	0	0
Custom boarding	0	0	0	0	10
rBst expense	0	0	0	0	0
Livestock professional fees	0	1	16	29	45
Other livestock expense	1	21	55	67	112
Fertilizer & lime	38	67	89	136	244
Seeds & plants	42	76	103	131	195
Spray & other crop expenses	13	38	61	96	162
Crop professional fees	0	0	0	1	52
Land, building, fence repair	1	22	40	65	128
Taxes	68	101	127	155	262
Real estate rent/lease	3	26	45	72	168
Insurance	46	66	85	108	148
Utilities	47	87	120	144	235
Interest	22	148	206	274	393
Other professional fees	2	9	18	32	54
Miscellaneous	-6	19	26	34	64
Total Farm Operating Costs	3,170	3,709	4,055	4,450	4,974
Expansion livestock	0	0	0	0	0
Extraordinary expenses	0	0	0	0	0
Machinery depreciation	169	251	325	422	668
Building depreciation	21	72	109	166	352
Total farm expense	3,514	4,261	4,519	4,905	5,649
Net Farm Income	1,045	741	380	101	-695

Table 47.

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

32 Farms Less Than 250 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	55	94	138	178	232
Cwt. of Milk Sold	9,357	19,826	32,694	41,559	58,055
<u>Accrual Operating Receipts</u>					
Milk	21.43	20.08	19.56	19.10	18.49
Dairy cattle	1.92	1.28	0.95	0.59	-0.59
Dairy calves	0.41	0.18	0.07	0.03	-0.07
Other livestock	0.65	0.03	0.00	0.00	-0.12
Crops	2.05	0.87	0.32	-0.29	-2.34
Miscellaneous receipts	3.05	1.14	0.86	0.57	0.35
Total Receipts	25.71	22.89	21.85	21.03	18.45
<u>Accrual Operating Expenses</u>					
Hired labor	0.00	0.59	1.60	2.29	2.89
Dairy grain & concentrates	4.88	5.99	6.42	6.92	7.99
Dairy roughage	0.00	0.00	0.00	0.05	0.60
Nondairy feed	0.00	0.00	0.00	0.00	0.19
Professional nutritional services	0.00	0.00	0.00	0.00	0.00
Machinery hire/rent/lease	0.00	0.04	0.18	0.48	1.10
Machinery repair & farm vehicle exp.	0.59	1.13	1.34	1.54	3.07
Fuel	0.41	0.55	0.66	0.99	1.44
Replacement livestock	0.00	0.00	0.00	0.00	0.44
Breeding	0.09	0.17	0.24	0.32	0.54
Veterinary, medicine & hoof care	0.33	0.47	0.54	0.64	0.93
Milk marketing	0.91	1.10	1.24	1.57	1.90
Bedding	0.09	0.31	0.42	0.51	0.76
Milking supplies	0.19	0.30	0.40	0.58	0.83
Cattle lease	0.00	0.00	0.00	0.00	0.00
Custom boarding	0.00	0.00	0.00	0.00	0.04
rBst expense	0.00	0.00	0.00	0.00	0.00
Livestock professional fees	0.00	0.01	0.08	0.14	0.22
Other livestock expense	0.00	0.10	0.25	0.34	0.52
Fertilizer & lime	0.17	0.29	0.43	0.65	1.14
Seeds & plants	0.22	0.36	0.44	0.54	0.90
Spray & other crop expenses	0.06	0.17	0.31	0.43	0.75
Crop professional fees	0.00	0.00	0.00	0.01	0.23
Land, building, fence repair	0.00	0.10	0.17	0.26	0.71
Taxes	0.31	0.46	0.59	0.71	1.43
Real estate rent/lease	0.02	0.12	0.19	0.30	0.85
Insurance	0.21	0.29	0.40	0.48	0.81
Utilities	0.21	0.39	0.54	0.70	1.20
Interest	0.09	0.66	1.11	1.31	1.76
Other professional fees	0.01	0.04	0.08	0.14	0.23
Miscellaneous	-0.03	0.08	0.12	0.16	0.28
Total Farm Operating Costs	15.47	17.58	18.33	19.65	23.19
Expansion livestock	0.00	0.00	0.00	0.00	0.00
Extraordinary expenses	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.72	1.11	1.55	2.12	3.23
Building depreciation	0.10	0.30	0.55	0.84	1.47
Total farm expense	17.22	19.68	20.90	21.84	26.30
Net Farm Income	4.34	3.15	1.64	0.45	-4.50

Table 48.

PROGRESS OF THE FARM BUSINESS30 Farms Less Than 250 Cows, New York State, 2018 & 2019, DFBS³³

SELECTED FACTORS	Average of 30 Farms		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	134	136	1%
Average number of heifers	119	120	1%
Milk sold, pounds	3,113,449	3,185,219	2%
Worker equivalent	4.3	4.1	-5%
Total tillable acres	382	385	1%
<i>Rates of Production</i>			
Milk sold per cow, pounds	23,177	23,352	1%
Hay DM per acre, tons	2.6	2.70	4%
Corn silage per acre, tons	18.7	17.50	-6%
<i>Labor Efficiency</i>			
Cows per worker	31.1	33.2	7%
Milk sold per worker, pounds	722,378	776,883	8%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$6.08	\$6.25	3%
Net milk income over purchased grain & conc. per cow	\$2,124	\$2,618	23%
Dairy feed & crop expense per cwt. milk	\$7.53	\$7.74	3%
Labor and machinery costs per cow	\$2,334	\$2,234	-4%
Hired labor costs per cwt. milk	\$1.85	\$1.72	-7%
Hired labor costs per worker equivalent	\$38,026	\$37,614	-1%
Operating cost of producing milk per cwt.	\$15.46	\$15.57	1%
Purchased input cost of producing milk per cwt.	\$17.63	\$17.69	0.3%
Total cost of producing milk per cwt.	\$23.43	\$23.37	-0.3%
Net milk price	\$16.07	\$18.28	14%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$14,979	\$15,047	0.5%
Machinery and equipment per cow	\$3,366	\$3,270	-3%
Asset turnover ratio	0.29	0.35	21%
<i>Profitability</i>			
Net farm income without appreciation	-\$10,467	\$58,580	660%
Net farm income without appreciation per cow	-\$78	\$429	650%
Net farm income with appreciation	-\$40,288	\$77,856	293%
Net farm income with appreciation per cow	-\$300	\$571	290%
Labor & management income per operator/manager	-\$46,988	-\$13,307	72%
Rate return on equity capital with appreciation	-10.4%	-2.0%	81%
Rate return on equity capital without appreciation	-8.3%	-3.3%	61%
Rate return on all capital with appreciation	-6.1%	-0.1%	98%
Rate return on all capital without appreciation	-4.6%	-1.0%	79%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$1,400,647	\$1,494,750	7%
Debt to asset ratio	0.29	0.28	-3%
Farm debt per cow	\$4,297	\$4,098	-5%
Debt coverage ratio	0.52	1.48	185%

³³ Farm participating both years

Table 49.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHT30 Farms Less Than 250 Cows, New York State, 2018 & 2019, DFBS³³

Item	2018		2019		% Change
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cwt.
Average number of cows	134		136		1%
Cwt. of milk sold		31,134		31,852	2%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,009	\$17.30	\$4,561	\$19.53	13%
Dairy cattle	\$210	\$0.91	\$229	\$0.98	8%
Dairy calves	\$48	\$0.21	\$22	\$0.09	-57%
Other livestock	-\$4	-\$0.02	\$20	\$0.09	-550%
Crops	\$151	\$0.65	\$114	\$0.49	-25%
Miscellaneous receipts	<u>\$226</u>	<u>\$0.97</u>	<u>\$214</u>	<u>\$0.91</u>	-6%
Total Operating Receipts	\$4,640	\$20.02	\$5,159	\$22.09	10%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$429	\$1.85	\$401	\$1.72	-7%
Dairy grain & concentrate	\$1,409	\$6.08	\$1,460	\$6.25	3%
Dairy roughage	\$37	\$0.16	\$31	\$0.13	-19%
Nondairy feed	\$4	\$0.02	\$6	\$0.03	50%
Professional nutritional services	\$0	\$0.00	\$0	\$0.00	NA
Machine hire, rent & lease	\$124	\$0.53	\$109	\$0.47	-11%
Machine repair & vehicle expense	\$273	\$1.18	\$289	\$1.24	5%
Fuel, oil & grease	\$189	\$0.82	\$166	\$0.71	-13%
Replacement livestock	\$14	\$0.06	\$9	\$0.04	-33%
Breeding	\$60	\$0.26	\$58	\$0.25	-4%
Veterinary & medicine	\$137	\$0.59	\$137	\$0.58	-2%
Milk marketing	\$285	\$1.23	\$291	\$1.25	2%
Bedding	\$86	\$0.37	\$92	\$0.39	5%
Milking supplies	\$101	\$0.44	\$99	\$0.42	-5%
Cattle lease	\$0	\$0.00	\$0	\$0.00	NA
Custom boarding	\$0	\$0.00	\$3	\$0.01	NA
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$37	\$0.16	\$17	\$0.07	-56%
Other livestock expense	\$52	\$0.22	\$55	\$0.23	5%
Fertilizer & lime	\$110	\$0.48	\$118	\$0.51	6%
Seeds & plants	\$110	\$0.48	\$113	\$0.48	0%
Spray & other crop expense	\$74	\$0.32	\$76	\$0.33	3%
Crop professional fees	\$6	\$0.02	\$9	\$0.04	100%
Land, building & fence repair	\$44	\$0.19	\$53	\$0.23	21%
Taxes	\$125	\$0.54	\$131	\$0.56	4%
Real estate rent & lease	\$48	\$0.21	\$55	\$0.23	10%
Insurance	\$82	\$0.35	\$82	\$0.35	0%
Utilities	\$126	\$0.55	\$117	\$0.50	-9%
Interest paid	\$193	\$0.83	\$206	\$0.88	6%
Other professional fees	\$20	\$0.08	\$24	\$0.10	25%
Miscellaneous	<u>\$41</u>	<u>\$0.18</u>	<u>\$28</u>	<u>\$0.12</u>	-33%
Total Operating Expenses	\$4,215	\$18.19	\$4,234	\$18.13	-0.3%
Expansion livestock	\$0	\$0.00	\$0	\$0.00	NA
Extraordinary expenses	\$7	\$0.03	\$0	\$0.00	-100%
Machinery depreciation	\$359	\$1.55	\$342	\$1.47	-5%
Real estate depreciation	<u>\$137</u>	<u>\$0.59</u>	<u>\$153</u>	<u>\$0.65</u>	10%
Total Expenses	\$4,718	\$20.36	\$4,729	\$20.25	-1%
Net Farm Income w/o Appreciation	-\$78	-\$0.34	\$429	\$1.84	-641%

Table 50.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

32 Farms, Less Than 250 Cows, New York State, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14) ³⁴	(12)	(12)	(12)	(11)	(11)	(14)	(14)
6.9	232	5,805,460	27,391	4.4	22.7	51.7	1,218,604
4.9	178	4,155,856	24,672	3.1	19.8	39.0	947,250
3.7	138	3,269,413	22,608	2.7	18.7	35.2	773,053
2.9	94	1,982,568	21,068	2.0	15.5	27.7	603,193
2.1	55	935,702	15,312	1.5	10.3	20.7	366,376

Cost Control							
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$987	\$4.88	25	\$641	\$1,640	\$1,211	\$6.28	\$0
\$1,211	\$5.99	30	\$814	\$1,944	\$1,553	\$7.40	\$20,591
\$1,381	\$6.42	33	\$1,020	\$2,117	\$1,749	\$7.97	\$33,621
\$1,570	\$6.92	36	\$1,255	\$2,638	\$1,944	\$8.67	\$38,536
\$1,883	\$7.99	40	\$1,760	\$3,395	\$2,215	\$9.35	\$47,615

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,291	\$21.43	\$13.38	\$19.26	5.6	\$184,774	\$63,947	\$134,685
\$4,786	\$20.08	\$14.82	\$22.25	0.9	\$101,608	\$8,571	\$61,621
\$4,414	\$19.56	\$16.24	\$25.38	-2.0	\$48,500	-\$17,119	\$15,544
\$4,213	\$19.10	\$17.46	\$28.27	-4.3	\$9,506	-\$42,384	-\$6,900
\$3,068	\$18.49	\$21.53	\$35.87	-11.1	-\$63,113	-\$101,786	-\$55,012

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$10,001	\$1,637	0.54	0.69	11.69	\$49	98	48
\$11,537	\$2,271	0.44	0.76	1.81	\$339	82	31
\$13,137	\$2,959	0.38	0.79	1.20	\$540	70	21
\$17,357	\$4,255	0.26	0.85	0.84	\$812	65	15
\$24,958	\$6,308	0.21	1.06	-0.22	\$1,045	51	0

³⁴ Page number of the participant's DFBS where the factor is located.

Table 51.

SELECTED PRODUCTION AND FINANCIAL FACTORS

31 Farms, 250 to 624 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Size of Business					
Average Cows	278	353	472	527	565
Average Heifers	147	242	324	403	502
Acres per Cow	1.42	1.82	2.13	2.32	2.74
Number of Worker Equivalents	6.0	7.6	9.2	10.9	13.7
Number of Owner Operators	1.1	1.7	2.0	2.6	3.4
Rates of Production					
Milk Sold per Cow	27,890	26,394	25,728	24,620	20,014
Hay DM per Acre, Tons	4.5	3.7	3.1	2.4	2.0
Corn Silage per Acre, Tons	21.4	19.8	18.8	17.3	12.6
Percent Butterfat	4.1	4.0	3.9	3.8	3.7
Percent Protein	3.2	3.1	3.1	3.1	2.9
Cull Rate, Percent	19.1	29.3	33.3	36.8	42.2
Labor Efficiency					
Cows per Worker	67.5	51.7	46.0	41.5	35.4
Milk Sold per Worker	1,588,656	1,295,314	1,127,044	1,010,722	874,113
Cost Control					
Dairy Feed & Crop Expense per Cwt. Milk	6.06	6.73	7.14	7.73	8.60
Labor & Machinery Costs per Cow	1,389	1,746	1,891	2,070	2,223
Hired Labor Cost per Cwt.	1.61	2.28	2.67	3.06	4.00
Hired Labor Costs per Worker Equivalent	34,823	38,856	41,743	44,535	50,831
Crop Input Costs per Acre	92	117	137	173	210
Machinery Costs per Acre	264	383	465	522	800
Operating cost of Producing Milk per Cwt.	13.83	15.24	15.79	16.54	18.63
Purch. Input Cost of Producing Milk per Cwt.	15.75	17.11	17.71	18.66	20.23
Total Cost of Producing Milk per Cwt.	18.74	20.31	20.81	21.43	23.04
Operating Expense Ratio	0.71	0.75	0.79	0.82	0.94
Capital Efficiency					
Farm Capital Per Cow	8,265	10,727	12,104	13,679	16,930
Machinery and Equipment per Cow	886	1,635	2,357	2,792	3,820
Real Estate per Cow	3,147	4,673	5,900	7,065	9,257
Asset Turnover Ratio	0.67	0.58	0.50	0.44	0.34
Working Capital as % of Tot. Oper. Expense	49	29	22	16	-18
Profitability					
Labor & Management Income per Operator	136,330	43,994	16,426	-46,106	-197,901
Rate Return on Equity Capital w/o Apprec.	10.65	3.30	1.45	-1.08	-8.65
Rate Return on All Capital w/o Apprec.	7.84	3.77	2.64	1.45	-1.85
Financial Summary(based on market value, excluding deferred taxes)					
Debt to Asset Ratio	0.06	0.25	0.38	0.46	0.62
Farm Debt per Cow	883	2,920	3,969	5,607	7,245
Debt Coverage Ratio	6.26	2.17	1.47	1.01	0.34

Table 52.

RECEIPTS AND EXPENSES PER COW

31 Farms, 250 to 624 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	278	353	472	527	565
Cwt. of Milk Sold	61,754	89,073	119,737	130,528	143,223
<u>Accrual Operating Receipts</u>					
Milk	5,448	5,133	5,029	4,742	3,840
Dairy cattle	420	323	240	186	91
Dairy calves	83	35	24	17	-18
Other livestock	51	2	0	0	-2
Crops	331	137	30	-42	-152
Miscellaneous receipts	278	206	149	108	59
Total Receipts	6,028	5,678	5,482	5,247	4,241
<u>Accrual Operating Expenses</u>					
Hired labor	382	528	652	759	1,057
Dairy grain & concentrates	986	1,317	1,452	1,590	1,851
Dairy roughage	0	8	32	88	182
Nondairy feed	0	0	0	0	1
Professional nutritional services	0	0	0	0	6
Machinery hire/rent/lease	12	51	95	255	521
Machinery repair & farm vehicle exp.	98	191	246	290	380
Fuel	78	133	158	173	221
Replacement livestock	0	0	0	3	253
Breeding	17	39	52	62	80
Veterinary, medicine & hoof care	81	125	135	160	219
Milk marketing	176	235	283	373	456
Bedding	33	79	93	134	215
Milking supplies	34	54	64	88	117
Cattle lease	0	0	0	0	24
Custom boarding	0	0	0	0	121
rBst expense	0	0	0	0	0
Livestock professional fees	0	8	16	24	54
Other livestock expense	4	16	26	42	87
Fertilizer & lime	24	75	112	147	282
Seeds & plants	62	97	117	145	193
Spray & other crop expenses	5	39	54	64	98
Crop professional fees	0	0	3	10	44
Land, building, fence repair	10	37	51	70	119
Taxes	20	45	58	92	125
Real estate rent/lease	15	43	71	97	147
Insurance	28	43	58	70	90
Utilities	46	61	76	96	138
Interest	48	141	225	292	407
Other professional fees	6	21	31	39	59
Miscellaneous	5	13	21	26	55
Total Farm Operating Costs	3,326	4,172	4,565	4,892	5,385
Expansion livestock	0	0	0	0	84
Extraordinary expenses	0	0	0	0	0
Machinery depreciation	105	196	263	328	442
Building depreciation	91	172	208	257	325
Total farm expense	3,750	4,659	5,146	5,356	5,861
Net Farm Income	899	665	474	294	-298

Table 53.

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

31 Farms, 250 to 624 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	278	353	472	527	565
Cwt. of Milk Sold	61,754	89,073	119,737	130,528	143,223
<u>Accrual Operating Receipts</u>					
Milk	20.27	19.83	19.50	19.19	18.53
Dairy cattle	1.62	1.30	0.98	0.75	0.40
Dairy calves	0.37	0.14	0.09	0.07	-0.07
Other livestock	0.24	0.01	0.00	0.00	-0.01
Crops	1.36	0.58	0.13	-0.16	-0.59
Miscellaneous receipts	1.09	0.80	0.63	0.43	0.25
Total Receipts	23.06	21.80	21.44	21.05	20.10
<u>Accrual Operating Expenses</u>					
Hired labor	1.61	2.28	2.67	3.06	4.00
Dairy grain & concentrates	4.60	5.33	5.69	6.17	6.96
Dairy roughage	0.00	0.03	0.14	0.34	0.82
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.03
Machinery hire/rent/lease	0.05	0.21	0.38	1.04	2.18
Machinery repair & farm vehicle exp.	0.41	0.78	0.94	1.16	1.57
Fuel	0.33	0.52	0.62	0.70	0.93
Replacement livestock	0.00	0.00	0.00	0.02	1.01
Breeding	0.07	0.15	0.21	0.24	0.31
Veterinary, medicine & hoof care	0.36	0.49	0.53	0.62	0.87
Milk marketing	0.77	0.98	1.18	1.47	1.72
Bedding	0.15	0.32	0.38	0.54	0.82
Milking supplies	0.14	0.21	0.27	0.36	0.45
Cattle lease	0.00	0.00	0.00	0.00	0.10
Custom boarding	0.00	0.00	0.00	0.00	0.48
rBst expense	0.00	0.00	0.00	0.00	0.00
Livestock professional fees	0.00	0.03	0.06	0.09	0.21
Other livestock expense	0.02	0.07	0.11	0.17	0.35
Fertilizer & lime	0.10	0.30	0.46	0.62	1.17
Seeds & plants	0.27	0.37	0.47	0.58	0.77
Spray & other crop expenses	0.03	0.15	0.21	0.27	0.39
Crop professional fees	0.00	0.00	0.01	0.04	0.17
Land, building, fence repair	0.04	0.15	0.21	0.27	0.48
Taxes	0.08	0.18	0.24	0.37	0.50
Real estate rent/lease	0.06	0.18	0.27	0.38	0.70
Insurance	0.12	0.18	0.23	0.28	0.38
Utilities	0.20	0.25	0.30	0.40	0.54
Interest	0.20	0.62	0.86	1.14	1.75
Other professional fees	0.02	0.09	0.12	0.15	0.23
Miscellaneous	0.02	0.06	0.09	0.10	0.22
Total Farm Operating Costs	15.41	17.24	18.14	18.71	20.34
Expansion livestock	0.00	0.00	0.00	0.00	0.32
Extraordinary expenses	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.43	0.80	1.02	1.37	1.66
Building depreciation	0.35	0.70	0.87	1.08	1.34
Total farm expense	17.61	19.05	20.01	20.72	22.16
Net Farm Income	3.67	2.77	2.15	1.15	-1.21

Table 54.

PROGRESS OF THE FARM BUSINESSSame 28 Farms, 250 to 624 Cows, New York State, 2018 & 2019, DFBS³⁵

SELECTED FACTORS	Average of 28 Farms		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	419	442	5%
Average number of heifers	334	327	-2%
Milk sold, pounds	10,321,438	10,929,721	6%
Worker equivalent	9.0	9.4	4%
Total tillable acres	886	901	2%
<i>Rates of Production</i>			
Milk sold per cow, pounds	24,613	24,734	0.5%
Hay DM per acre, tons	3.4	3.10	-9%
Corn silage per acre, tons	18.1	18.20	1%
<i>Labor Efficiency</i>			
Cows per worker	46.5	47.1	1%
Milk sold per worker, pounds	1,144,284	1,163,975	2%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$5.81	\$5.64	-3%
Net milk income over purchased grain & conc. per cow	\$2,476	\$3,101	25%
Dairy feed & crop expense per cwt. milk	\$7.28	\$7.06	-3%
Labor and machinery costs per cow	\$1,826	\$1,851	1%
Hired labor costs per cwt. milk	\$2.71	\$2.74	1%
Hired labor costs per worker equivalent	\$42,328	\$42,404	0.2%
Operating cost of producing milk per cwt.	\$15.63	\$16.02	2%
Purchased input cost of producing milk per cwt.	\$17.62	\$17.99	2%
Total cost of producing milk per cwt.	\$20.53	\$20.80	1%
Net milk price	\$15.87	\$18.15	14%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$12,251	\$11,970	-2%
Machinery and equipment per cow	\$2,289	\$2,247	-2%
Asset turnover ratio	0.37	0.49	32%
<i>Profitability</i>			
Net farm income without appreciation	-\$55,115	\$154,140	380%
Net farm income without appreciation per cow	-\$131	\$349	366%
Net farm income with appreciation	-\$121,460	\$394,472	425%
Net farm income with appreciation per cow	-\$290	\$893	408%
Labor & management income per operator/manager	-\$113,436	-\$8,572	92%
Rate return on equity capital with appreciation	-7.4%	7.6%	203%
Rate return on equity capital without appreciation	-5.5%	0.5%	109%
Rate return on all capital with appreciation	-3.3%	6.8%	306%
Rate return on all capital without appreciation	-2.0%	2.2%	209%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$3,291,238	\$3,522,562	7%
Debt to asset ratio	0.36	0.35	-3%
Farm debt per cow	\$4,370	\$4,197	-4%
Debt coverage ratio	0.67	1.44	115%

³⁵ Farm participating both years

Table 55.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHTSame 28 Farms, 250 to 624 Cows, New York State, 2018 & 2019, DFBS³⁵

Item	2018		2019		% Change Per Cwt.
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	419		442		5%
Cwt. of milk sold		103,214		109,297	6%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,206	\$17.09	\$4,799	\$19.40	14%
Dairy cattle	\$246	\$1.00	\$261	\$1.05	5%
Dairy calves	\$24	\$0.10	\$25	\$0.10	0%
Other livestock	\$12	\$0.05	\$11	\$0.04	-20%
Crops	\$87	\$0.35	\$46	\$0.19	-46%
Miscellaneous receipts	<u>\$150</u>	<u>\$0.61</u>	<u>\$153</u>	<u>\$0.62</u>	2%
Total Operating Receipts	\$4,725	\$19.20	\$5,295	\$21.41	12%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$666	\$2.71	\$677	\$2.74	1%
Dairy grain & concentrate	\$1,430	\$5.81	\$1,396	\$5.64	-3%
Dairy roughage	\$69	\$0.28	\$56	\$0.23	-18%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$2	\$0.01	\$1	\$0.00	-100%
Machine hire, rent & lease	\$189	\$0.77	\$201	\$0.81	5%
Machine repair & vehicle expense	\$204	\$0.83	\$242	\$0.98	18%
Fuel, oil & grease	\$163	\$0.66	\$147	\$0.59	-11%
Replacement livestock	\$20	\$0.08	\$68	\$0.27	238%
Breeding	\$56	\$0.23	\$50	\$0.20	-13%
Veterinary & medicine	\$137	\$0.56	\$140	\$0.57	2%
Milk marketing	\$300	\$1.22	\$310	\$1.25	2%
Bedding	\$93	\$0.38	\$93	\$0.38	0%
Milking supplies	\$86	\$0.35	\$71	\$0.29	-17%
Cattle lease	\$3	\$0.01	\$4	\$0.02	100%
Custom boarding	\$20	\$0.08	\$28	\$0.11	38%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$19	\$0.08	\$19	\$0.08	0%
Other livestock expense	\$22	\$0.09	\$29	\$0.12	33%
Fertilizer & lime	\$98	\$0.40	\$114	\$0.46	15%
Seeds & plants	\$118	\$0.48	\$119	\$0.48	0%
Spray & other crop expense	\$63	\$0.26	\$50	\$0.20	-23%
Crop professional fees	\$13	\$0.05	\$11	\$0.04	-20%
Land, building & fence repair	\$45	\$0.18	\$54	\$0.22	22%
Taxes	\$62	\$0.25	\$62	\$0.25	0%
Real estate rent & lease	\$86	\$0.35	\$76	\$0.31	-11%
Insurance	\$55	\$0.23	\$54	\$0.22	-4%
Utilities	\$90	\$0.36	\$87	\$0.35	-3%
Interest paid	\$195	\$0.79	\$227	\$0.92	16%
Other professional fees	\$23	\$0.09	\$31	\$0.13	44%
Miscellaneous	<u>\$24</u>	<u>\$0.10</u>	<u>\$21</u>	<u>\$0.09</u>	-10%
Total Operating Expenses	\$4,354	\$17.69	\$4,438	\$17.94	1%
Expansion livestock	\$11	\$0.05	\$20	\$0.08	60%
Extraordinary expenses	\$0	\$0.00	\$0	\$0.00	NA
Machinery depreciation	\$269	\$1.09	\$263	\$1.06	-3%
Real estate depreciation	<u>\$223</u>	<u>\$0.91</u>	<u>\$225</u>	<u>\$0.91</u>	0%
Total Expenses	\$4,857	\$19.74	\$4,946	\$19.99	1%
Net Farm Income w/o Appreciation	-\$131	-\$0.53	\$349	\$1.41	-366%

Table 56.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

31 Farms, 250 to 624 Cows, New York State, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14) ³⁶	(12)	(12)	(12)	(11)	(11)	(14)	(14)
13.7	565	14,322,322	27,890	4.5	21.4	67.5	1,588,656
10.9	527	13,052,810	26,394	3.7	19.8	51.7	1,295,314
9.2	472	11,973,690	25,728	3.1	18.8	46.0	1,127,044
7.6	353	8,907,307	24,620	2.4	17.3	41.5	1,010,722
6.0	278	6,175,376	20,014	2.0	12.6	35.4	874,113

Cost Control							
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$986	\$4.60	24	\$596	\$1,389	\$1,306	\$6.06	\$34,823
\$1,317	\$5.33	28	\$813	\$1,746	\$1,616	\$6.73	\$38,856
\$1,452	\$5.69	29	\$923	\$1,891	\$1,814	\$7.14	\$41,743
\$1,590	\$6.17	32	\$1,090	\$2,070	\$2,007	\$7.73	\$44,535
\$1,851	\$6.96	36	\$1,346	\$2,223	\$2,298	\$8.60	\$50,831

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,448	\$20.27	\$13.83	\$18.74	7.8	\$425,868	\$136,330	\$825,444
\$5,133	\$19.83	\$15.24	\$20.31	3.8	\$250,009	\$43,994	\$335,515
\$5,029	\$19.50	\$15.79	\$20.81	2.6	\$214,911	\$16,426	\$184,817
\$4,742	\$19.19	\$16.54	\$21.43	1.5	\$112,123	-\$46,106	\$118,126
\$3,840	\$18.53	\$18.63	\$23.04	-1.8	-\$133,702	-\$197,901	-\$106,149

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$8,265	\$886	0.67	0.71	6.26	\$67	95	49
\$10,727	\$1,635	0.58	0.75	2.17	\$357	77	29
\$12,104	\$2,357	0.50	0.79	1.47	\$588	64	22
\$13,679	\$2,792	0.44	0.82	1.01	\$729	56	16
\$16,930	\$3,820	0.34	0.94	0.34	\$974	40	-18

³⁶ Page number of the participant's DFBS where the factor is located.

Table 57.

SELECTED PRODUCTION AND FINANCIAL FACTORS

31 Farms, 625 to 999 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Size of Business					
Average Cows	659	728	801	899	972
Average Heifers	497	619	712	765	959
Acres per Cow	1.21	1.97	2.12	2.29	3.31
Number of Worker Equivalents	11.7	15.3	17.3	19.5	21.7
Number of Owner Operators	1.2	2.0	2.6	3.1	4.2
Rates of Production					
Milk Sold per Cow	28,277	27,184	25,954	24,587	20,274
Hay DM per Acre, Tons	4.8	3.5	3.0	2.5	1.8
Corn Silage per Acre, Tons	22.3	20.0	19.1	17.0	11.0
Percent Butterfat	4.4	4.0	4.0	3.9	3.8
Percent Protein	3.4	3.1	3.1	3.1	3.0
Cull Rate, Percent	28.7	33.0	35.7	39.0	41.3
Labor Efficiency					
Cows per Worker	62.8	53.0	48.2	45.3	38.3
Milk Sold per Worker	1,541,507	1,329,281	1,260,151	1,145,914	891,882
Cost Control					
Dairy Feed & Crop Expense per Cwt. Milk	6.01	6.79	7.24	7.57	8.56
Labor & Machinery Costs per Cow	1,342	1,699	1,816	1,943	2,278
Hired Labor Cost per Cwt.	2.18	2.60	3.01	3.37	3.98
Hired Labor Costs per Worker Equivalent	38,649	39,746	41,331	44,224	51,959
Crop Input Costs per Acre	68	108	127	152	210
Machinery Costs per Acre	175	358	413	478	631
Operating cost of Producing Milk per Cwt.	13.29	14.91	15.61	16.95	18.53
Purch. Input Cost of Producing Milk per Cwt.	15.22	16.54	17.32	18.19	20.12
Total Cost of Producing Milk per Cwt.	17.87	19.10	19.54	20.74	22.82
Operating Expense Ratio	0.72	0.77	0.78	0.81	0.88
Capital Efficiency					
Farm Capital Per Cow	7,520	10,900	12,042	13,391	16,894
Machinery and Equipment per Cow	844	1,633	2,020	2,476	3,364
Real Estate per Cow	2,602	4,468	5,313	6,719	9,944
Asset Turnover Ratio	0.95	0.56	0.51	0.45	0.35
Working Capital as % of Tot. Oper. Expense	48	28	20	9	-22
Profitability					
Labor & Management Income per Operator	305,164	118,355	68,569	19,378	-60,231
Rate Return on Equity Capital w/o Apprec.	11.64	7.34	5.01	2.65	-1.44
Rate Return on All Capital w/o Apprec.	8.82	5.97	4.81	3.80	1.35
Financial Summary(based on market value, excluding deferred taxes)					
Debt to Asset Ratio	0.11	0.26	0.34	0.44	0.68
Farm Debt per Cow	1,303	2,770	4,277	5,164	6,933
Debt Coverage Ratio	23.31	1.99	1.38	1.12	0.55

Table 58.

RECEIPTS AND EXPENSES PER COW

31 Farms, 625 to 999 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	658	728	801	899	972
Cwt. of Milk Sold	146,237	178,312	203,877	236,228	260,865
<u>Accrual Operating Receipts</u>					
Milk	5,709	5,218	4,939	4,727	4,138
Dairy cattle	417	326	269	204	159
Dairy calves	54	27	18	10	-14
Other livestock	72	1	0	0	-5
Crops	525	134	31	-36	-152
Miscellaneous receipts	643	220	176	141	59
Total Receipts	6,599	5,977	5,590	5,270	4,517
<u>Accrual Operating Expenses</u>					
Hired labor	527	657	736	866	974
Dairy grain & concentrates	1,063	1,361	1,417	1,615	1,838
Dairy roughage	1	19	38	66	203
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	1
Machinery hire/rent/lease	44	118	172	224	359
Machinery repair & farm vehicle exp.	130	187	233	285	394
Fuel	79	125	144	171	206
Replacement livestock	0	0	0	0	10
Breeding	15	35	44	59	91
Veterinary, medicine & hoof care	102	133	157	178	218
Milk marketing	196	231	276	322	392
Bedding	42	87	103	140	162
Milking supplies	47	71	89	107	164
Cattle lease	0	0	0	0	10
Custom boarding	0	0	3	74	464
rBst expense	0	0	0	0	0
Livestock professional fees	7	16	19	23	49
Other livestock expense	0	6	21	39	57
Fertilizer & lime	23	67	99	143	246
Seeds & plants	35	86	105	131	213
Spray & other crop expenses	10	40	50	70	140
Crop professional fees	0	0	0	7	21
Land, building, fence repair	20	43	61	81	146
Taxes	13	47	75	92	130
Real estate rent/lease	18	45	70	120	272
Insurance	29	41	49	58	79
Utilities	49	66	79	95	114
Interest	42	144	207	264	369
Other professional fees	10	20	29	42	67
Miscellaneous	6	14	23	35	48
Total Farm Operating Costs	3,767	4,414	4,509	4,835	5,464
Expansion livestock	0	0	0	0	37
Extraordinary expenses	0	0	0	0	0
Machinery depreciation	70	188	271	319	413
Building depreciation	61	136	166	196	268
Total farm expense	4,096	4,828	5,014	5,315	5,825
Net Farm Income	1,054	714	607	439	111

Table 59.

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

31 Farms, 625 to 999 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	658	728	801	899	972
Cwt. of Milk Sold	146,237	178,312	203,877	236,228	260,865
<u>Accrual Operating Receipts</u>					
Milk	22.20	19.63	19.25	19.03	18.60
Dairy cattle	1.56	1.31	1.10	0.87	0.65
Dairy calves	0.20	0.11	0.08	0.04	-0.06
Other livestock	0.41	0.01	0.00	0.00	-0.02
Crops	2.01	0.50	0.12	-0.16	-0.64
Miscellaneous receipts	2.67	0.93	0.71	0.55	0.23
Total Receipts	25.91	23.19	21.69	20.70	20.17
<u>Accrual Operating Expenses</u>					
Hired labor	2.18	2.60	3.01	3.37	3.98
Dairy grain & concentrates	4.69	5.38	5.97	6.18	6.70
Dairy roughage	0.00	0.08	0.14	0.25	0.86
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.01
Machinery hire/rent/lease	0.17	0.47	0.68	0.95	1.41
Machinery repair & farm vehicle exp.	0.51	0.76	0.89	1.21	1.59
Fuel	0.31	0.49	0.59	0.67	0.86
Replacement livestock	0.00	0.00	0.00	0.00	0.04
Breeding	0.06	0.13	0.17	0.24	0.37
Veterinary, medicine & hoof care	0.42	0.52	0.61	0.72	0.86
Milk marketing	0.83	0.94	1.14	1.29	1.46
Bedding	0.17	0.33	0.41	0.52	0.69
Milking supplies	0.20	0.27	0.35	0.42	0.66
Cattle lease	0.00	0.00	0.00	0.00	0.04
Custom boarding	0.00	0.00	0.01	0.29	1.72
rBst expense	0.00	0.00	0.00	0.00	0.00
Livestock professional fees	0.03	0.06	0.07	0.10	0.18
Other livestock expense	0.00	0.03	0.09	0.15	0.23
Fertilizer & lime	0.09	0.27	0.36	0.58	1.10
Seeds & plants	0.15	0.34	0.40	0.53	0.85
Spray & other crop expenses	0.05	0.15	0.19	0.27	0.62
Crop professional fees	0.00	0.00	0.00	0.03	0.10
Land, building, fence repair	0.09	0.16	0.24	0.34	0.56
Taxes	0.05	0.18	0.29	0.39	0.55
Real estate rent/lease	0.08	0.18	0.29	0.47	1.09
Insurance	0.11	0.16	0.20	0.24	0.34
Utilities	0.21	0.27	0.32	0.36	0.44
Interest	0.16	0.56	0.82	1.10	1.59
Other professional fees	0.04	0.08	0.13	0.16	0.26
Miscellaneous	0.03	0.06	0.09	0.14	0.19
Total Farm Operating Costs	16.20	17.34	18.20	18.95	21.20
Expansion livestock	0.00	0.00	0.00	0.00	0.13
Extraordinary expenses	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.27	0.74	1.02	1.35	1.67
Building depreciation	0.28	0.52	0.66	0.80	1.03
Total farm expense	17.83	19.11	19.73	20.63	22.88
Net Farm Income	4.32	3.01	2.23	1.73	0.50

Table 60.

PROGRESS OF THE FARM BUSINESSSame 29 Farms, 625 to 999 Cows, New York State, 2018 & 2019, DFBS³⁷

SELECTED FACTORS	Average of 29 Farms		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	784	816	4%
Average number of heifers	698	708	1%
Milk sold, pounds	19,772,732	20,584,401	4%
Worker equivalent	16.7	16.9	2%
Total tillable acres	1,666	1,693	2%
<i>Rates of Production</i>			
Milk sold per cow, pounds	25,211	25,233	0.1%
Hay DM per acre, tons	2.9	3.10	7%
Corn silage per acre, tons	19.2	18.70	-3%
<i>Labor Efficiency</i>			
Cows per worker	47.0	48.2	2%
Milk sold per worker, pounds	1,185,416	1,215,136	3%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$6.05	\$5.86	-3%
Net milk income over purchased grain & conc. per cow	\$2,564	\$3,171	24%
Dairy feed & crop expense per cwt. milk	\$7.47	\$7.24	-3%
Labor and machinery costs per cow	\$1,729	\$1,784	3%
Hired labor costs per cwt. milk	\$2.80	\$2.94	5%
Hired labor costs per worker equivalent	\$40,352	\$43,056	7%
Operating cost of producing milk per cwt.	\$15.50	\$15.69	1%
Purchased input cost of producing milk per cwt.	\$17.07	\$17.30	1%
Total cost of producing milk per cwt.	\$19.52	\$19.70	1%
Net milk price	\$16.28	\$18.47	13%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$11,636	\$11,477	-1%
Machinery and equipment per cow	\$1,997	\$1,992	-0.2%
Asset turnover ratio	0.42	0.52	24%
<i>Profitability</i>			
Net farm income without appreciation	\$66,379	\$470,314	609%
Net farm income without appreciation per cow	\$85	\$577	579%
Net farm income with appreciation	-\$41,017	\$752,889	1936%
Net farm income with appreciation per cow	-\$52	\$923	1875%
Labor & management income per operator/manager	-\$92,490	\$63,151	168%
Rate return on equity capital with appreciation	-3.7%	9.2%	349%
Rate return on equity capital without appreciation	-1.9%	4.6%	344%
Rate return on all capital with appreciation	-0.9%	7.7%	956%
Rate return on all capital without appreciation	0.3%	4.7%	1702%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$5,948,247	\$6,461,007	9%
Debt to asset ratio	0.34	0.33	-3%
Farm debt per cow	\$3,902	\$3,808	-2%
Debt coverage ratio	0.76	1.63	114%

³⁷ Farm participating both years

Table 61.

RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHTSame 29 Farms, 625 to 999 Cows, New York State, 2018 & 2019, DFBS³⁷

Item	2018		2019		% Change Per Cwt.
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	784		816		4%
Cwt. of milk sold		197,727		205,844	4%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,389	\$17.41	\$4,942	\$19.59	13%
Dairy cattle	\$301	\$1.19	\$268	\$1.06	-11%
Dairy calves	\$16	\$0.06	\$20	\$0.08	33%
Other livestock	\$54	\$0.21	\$14	\$0.05	-76%
Crops	\$94	\$0.37	\$87	\$0.35	-5%
Miscellaneous receipts	<u>\$211</u>	<u>\$0.84</u>	<u>\$242</u>	<u>\$0.96</u>	14%
Total Operating Receipts	\$5,065	\$20.09	\$5,572	\$22.08	10%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$707	\$2.80	\$743	\$2.94	5%
Dairy grain & concentrate	\$1,525	\$6.05	\$1,479	\$5.86	-3%
Dairy roughage	\$60	\$0.24	\$65	\$0.26	8%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$1	\$0.00	\$0	\$0.00	NA
Machine hire, rent & lease	\$178	\$0.71	\$179	\$0.71	0%
Machine repair & vehicle expense	\$216	\$0.86	\$239	\$0.95	10%
Fuel, oil & grease	\$152	\$0.60	\$141	\$0.56	-7%
Replacement livestock	\$2	\$0.01	\$2	\$0.01	0%
Breeding	\$53	\$0.21	\$47	\$0.19	-10%
Veterinary & medicine	\$149	\$0.59	\$157	\$0.62	5%
Milk marketing	\$283	\$1.12	\$281	\$1.12	0%
Bedding	\$103	\$0.41	\$105	\$0.42	2%
Milking supplies	\$89	\$0.35	\$95	\$0.38	9%
Cattle lease	\$1	\$0.01	\$2	\$0.01	0%
Custom boarding	\$102	\$0.40	\$108	\$0.43	7%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$19	\$0.08	\$23	\$0.09	13%
Other livestock expense	\$29	\$0.11	\$23	\$0.09	-18%
Fertilizer & lime	\$116	\$0.46	\$110	\$0.44	-4%
Seeds & plants	\$107	\$0.42	\$108	\$0.43	2%
Spray & other crop expense	\$60	\$0.24	\$59	\$0.23	-4%
Crop professional fees	\$16	\$0.06	\$6	\$0.02	-67%
Land, building & fence repair	\$64	\$0.25	\$71	\$0.28	12%
Taxes	\$70	\$0.28	\$67	\$0.27	-4%
Real estate rent & lease	\$105	\$0.42	\$101	\$0.40	-5%
Insurance	\$45	\$0.18	\$50	\$0.20	11%
Utilities	\$88	\$0.35	\$79	\$0.31	-11%
Interest paid	\$177	\$0.70	\$184	\$0.73	4%
Other professional fees	\$23	\$0.09	\$32	\$0.13	44%
Miscellaneous	<u>\$27</u>	<u>\$0.11</u>	<u>\$25</u>	<u>\$0.10</u>	-9%
Total Operating Expenses	\$4,566	\$18.11	\$4,581	\$18.15	0.2%
Expansion livestock	\$18	\$0.07	\$7	\$0.03	-57%
Extraordinary expenses	\$5	\$0.02	\$0	\$0.00	-100%
Machinery depreciation	\$232	\$0.92	\$244	\$0.97	5%
Real estate depreciation	<u>\$160</u>	<u>\$0.63</u>	<u>\$163</u>	<u>\$0.65</u>	3%
Total Expenses	\$4,981	\$19.75	\$4,995	\$19.80	0.3%
Net Farm Income w/o Appreciation	\$85	\$0.34	\$577	\$2.28	571%

Table 62.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

31 Farms, 625 to 999 Cows, New York State, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14) ³⁸	(12)	(12)	(12)	(11)	(11)	(14)	(14)
21.7	972	26,086,514	28,277	4.8	22.3	62.8	1,541,507
19.5	899	23,622,791	27,184	3.5	20.0	53.0	1,329,281
17.3	801	20,387,698	25,954	3.0	19.1	48.2	1,260,151
15.3	728	17,831,162	24,587	2.5	17.0	45.3	1,145,914
11.7	659	14,623,709	20,274	1.8	11.0	38.3	891,882

Cost Control							
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$1,063	\$4.69	24	\$611	\$1,342	\$1,395	\$6.01	\$38,649
\$1,361	\$5.38	28	\$812	\$1,699	\$1,634	\$6.79	\$39,746
\$1,417	\$5.97	30	\$906	\$1,816	\$1,790	\$7.24	\$41,331
\$1,615	\$6.18	32	\$1,042	\$1,943	\$1,961	\$7.57	\$44,224
\$1,838	\$6.70	34	\$1,237	\$2,278	\$2,279	\$8.56	\$51,959

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,709	\$22.20	\$13.29	\$17.87	8.8	\$899,049	\$305,164	\$1,005,701
\$5,218	\$19.63	\$14.91	\$19.10	6.0	\$570,044	\$118,355	\$672,577
\$4,939	\$19.25	\$15.61	\$19.54	4.8	\$477,673	\$68,569	\$534,274
\$4,727	\$19.03	\$16.95	\$20.74	3.8	\$349,307	\$19,378	\$370,444
\$4,138	\$18.60	\$18.53	\$22.82	1.3	\$94,887	-\$60,231	\$56,527

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$7,520	\$844	0.95	0.72	23.31	\$39	90	48
\$10,900	\$1,633	0.56	0.77	1.99	\$340	76	28
\$12,042	\$2,020	0.51	0.78	1.38	\$639	67	20
\$13,391	\$2,476	0.45	0.81	1.12	\$782	59	9
\$16,894	\$3,364	0.35	0.88	0.55	\$919	34	-22

³⁸ Page number of the participant's DFBS where the factor is located.

Table 63.

SELECTED PRODUCTION AND FINANCIAL FACTORS

34 Farms, 1,000 to 1,449 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Size of Business					
Average Cows	1,031	1,100	1,230	1,327	1,414
Average Heifers	786	886	980	1,068	1,227
Acres per Cow	0.72	1.48	1.82	2.16	2.53
Number of Worker Equivalents	18.4	22.3	24.7	26.4	32.2
Number of Owner Operators	1.0	1.6	2.1	2.8	4.2
Rates of Production					
Milk Sold per Cow	28,472	27,928	27,276	26,345	24,781
Hay DM per Acre, Tons	4.5	3.9	3.5	2.8	1.3
Corn Silage per Acre, Tons	22.4	19.9	18.6	17.1	8.7
Percent Butterfat	4.1	4.0	3.9	3.8	3.7
Percent Protein	3.2	3.1	3.1	3.1	3.0
Cull Rate, Percent	28.0	32.3	35.6	38.7	41.7
Labor Efficiency					
Cows per Worker	67.7	53.1	50.0	45.7	40.4
Milk Sold per Worker	1,821,005	1,465,320	1,330,160	1,210,988	1,080,842
Cost Control					
Dairy Feed & Crop Expense per Cwt. Milk	5.90	6.77	7.13	7.79	8.79
Labor & Machinery Costs per Cow	1,301	1,632	1,779	1,935	2,164
Hired Labor Cost per Cwt.	2.15	2.81	3.14	3.44	3.97
Hired Labor Costs per Worker Equivalent	40,038	43,211	45,188	47,439	52,916
Crop Input Costs per Acre	73	124	147	164	225
Machinery Costs per Acre	241	398	459	546	712
Operating cost of Producing Milk per Cwt.	13.94	15.03	15.71	16.83	18.37
Purch. Input Cost of Producing Milk per Cwt.	15.37	16.80	17.38	18.15	20.04
Total Cost of Producing Milk per Cwt.	17.34	18.77	19.52	20.09	21.67
Operating Expense Ratio	0.72	0.76	0.80	0.83	0.89
Capital Efficiency					
Farm Capital Per Cow	7,615	9,710	11,185	12,811	16,870
Machinery and Equipment per Cow	653	1,330	1,744	2,182	2,960
Real Estate per Cow	2,619	4,086	5,081	6,320	8,999
Asset Turnover Ratio	0.84	0.64	0.55	0.48	0.38
Working Capital as % of Tot. Oper. Expense	55	32	16	8	-3
Profitability					
Labor & Management Income per Operator	683,940	201,151	70,383	-4,072	-123,749
Rate Return on Equity Capital w/o Apprec.	20.79	8.27	4.63	2.75	-1.95
Rate Return on All Capital w/o Apprec.	11.02	6.63	4.97	3.49	1.44
Financial Summary(based on market value, excluding deferred taxes)					
Debt to Asset Ratio	0.12	0.33	0.42	0.49	0.68
Farm Debt per Cow	1,226	3,851	4,962	5,528	6,988
Debt Coverage Ratio	3.89	2.00	1.37	0.88	0.32

Table 64.

RECEIPTS AND EXPENSES PER COW

34 Farms, 1,000 to 1,449 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	1,031	1,100	1,230	1,327	1,414
Cwt. of Milk Sold	268,614	301,148	330,342	359,946	383,512
<u>Accrual Operating Receipts</u>					
Milk	5,666	5,400	5,243	5,120	4,810
Dairy cattle	460	292	255	229	182
Dairy calves	48	35	25	19	8
Other livestock	103	19	0	0	-1
Crops	285	136	44	-17	-170
Miscellaneous receipts	338	214	168	133	83
Total Receipts	6,400	6,028	5,774	5,597	5,255
<u>Accrual Operating Expenses</u>					
Hired labor	577	753	840	927	1,076
Dairy grain & concentrates	1,256	1,442	1,544	1,646	1,792
Dairy roughage	1	23	55	112	619
Nondairy feed	0	0	0	0	2
Professional nutritional services	0	0	0	0	11
Machinery hire/rent/lease	10	46	99	181	414
Machinery repair & farm vehicle exp.	131	204	242	280	340
Fuel	87	133	156	171	217
Replacement livestock	0	0	0	0	67
Breeding	19	31	39	52	81
Veterinary, medicine & hoof care	113	142	160	181	215
Milk marketing	214	248	289	363	451
Bedding	23	64	94	119	168
Milking supplies	40	70	89	115	157
Cattle lease	0	0	0	0	3
Custom boarding	0	0	3	142	367
rBst expense	0	0	0	0	0
Livestock professional fees	0	10	16	20	27
Other livestock expense	0	7	20	38	74
Fertilizer & lime	19	54	83	107	259
Seeds & plants	36	75	108	147	214
Spray & other crop expenses	2	25	43	73	120
Crop professional fees	0	0	0	9	21
Land, building, fence repair	40	64	77	93	144
Taxes	22	49	59	71	94
Real estate rent/lease	21	57	92	145	230
Insurance	24	33	37	50	66
Utilities	53	76	91	114	140
Interest	48	179	239	278	382
Other professional fees	8	17	24	35	59
Miscellaneous	9	21	27	40	74
Total Farm Operating Costs	4,203	4,547	4,802	5,024	5,590
Expansion livestock	0	0	0	3	145
Extraordinary expenses	0	0	0	0	28
Machinery depreciation	90	166	211	262	410
Building depreciation	96	157	196	234	302
Total farm expense	4,570	5,004	5,265	5,526	6,039
Net Farm Income	1,097	724	534	336	64

Table 65.

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

34 Farms, 1,000 to 1,449 Cows, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	1,031	1,100	1,230	1,327	1,414
Cwt. of Milk Sold	268,614	301,148	330,342	359,946	383,512
<u>Accrual Operating Receipts</u>					
Milk	20.71	19.70	19.33	19.06	18.67
Dairy cattle	1.75	1.08	0.94	0.84	0.68
Dairy calves	0.17	0.13	0.10	0.07	0.03
Other livestock	0.38	0.07	0.00	0.00	0.00
Crops	1.08	0.51	0.17	-0.06	-0.63
Miscellaneous receipts	1.27	0.81	0.62	0.49	0.30
Total Receipts	23.77	22.12	21.43	20.64	20.07
<u>Accrual Operating Expenses</u>					
Hired labor	2.15	2.81	3.14	3.44	3.97
Dairy grain & concentrates	4.78	5.30	5.70	6.03	6.76
Dairy roughage	0.00	0.08	0.21	0.42	2.25
Nondairy feed	0.00	0.00	0.00	0.00	0.01
Professional nutritional services	0.00	0.00	0.00	0.00	0.04
Machinery hire/rent/lease	0.04	0.17	0.36	0.69	1.54
Machinery repair & farm vehicle exp.	0.48	0.77	0.91	1.03	1.27
Fuel	0.33	0.48	0.57	0.65	0.83
Replacement livestock	0.00	0.00	0.00	0.00	0.25
Breeding	0.07	0.11	0.14	0.19	0.32
Veterinary, medicine & hoof care	0.42	0.53	0.61	0.66	0.81
Milk marketing	0.82	0.92	1.08	1.32	1.67
Bedding	0.08	0.24	0.35	0.44	0.62
Milking supplies	0.15	0.26	0.33	0.43	0.59
Cattle lease	0.00	0.00	0.00	0.00	0.01
Custom boarding	0.00	0.00	0.01	0.52	1.37
rBst expense	0.00	0.00	0.00	0.00	0.00
Livestock professional fees	0.00	0.04	0.06	0.08	0.10
Other livestock expense	0.00	0.03	0.07	0.15	0.27
Fertilizer & lime	0.07	0.20	0.31	0.42	0.95
Seeds & plants	0.13	0.28	0.41	0.54	0.82
Spray & other crop expenses	0.01	0.09	0.16	0.27	0.45
Crop professional fees	0.00	0.00	0.00	0.03	0.08
Land, building, fence repair	0.15	0.24	0.28	0.35	0.53
Taxes	0.08	0.18	0.22	0.27	0.36
Real estate rent/lease	0.08	0.21	0.34	0.55	0.84
Insurance	0.09	0.12	0.14	0.18	0.25
Utilities	0.20	0.28	0.33	0.43	0.52
Interest	0.18	0.66	0.88	1.03	1.46
Other professional fees	0.03	0.06	0.09	0.13	0.21
Miscellaneous	0.04	0.08	0.10	0.15	0.28
Total Farm Operating Costs	15.65	16.91	18.00	18.69	20.61
Expansion livestock	0.00	0.00	0.00	0.01	0.53
Extraordinary expenses	0.00	0.00	0.00	0.00	0.11
Machinery depreciation	0.32	0.63	0.81	0.96	1.49
Building depreciation	0.36	0.58	0.73	0.90	1.10
Total farm expense	17.08	18.74	19.74	20.23	22.38
Net Farm Income	4.07	2.67	1.97	1.28	0.24

Table 66.

PROGRESS OF THE FARM BUSINESSSame 34 Farms, 1,000 to 1,449 Cows, New York State, 2018 & 2019, DFBS³⁹

SELECTED FACTORS	Average of 34 Farms		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	1,163	1,215	4%
Average number of heifers	993	983	-1%
Milk sold, pounds	31,046,889	32,710,077	5%
Worker equivalent	24.0	24.6	2%
Total tillable acres	2,051	2,103	3%
<i>Rates of Production</i>			
Milk sold per cow, pounds	26,694	26,930	1%
Hay DM per acre, tons	3.3	3.30	0%
Corn silage per acre, tons	19.1	18.40	-4%
<i>Labor Efficiency</i>			
Cows per worker	48.4	49.5	2%
Milk sold per worker, pounds	1,292,005	1,331,301	3%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$5.86	\$5.69	-3%
Net milk income over purchased grain & conc. per cow	\$2,735	\$3,393	24%
Dairy feed & crop expense per cwt. milk	\$7.37	\$7.25	-2%
Labor and machinery costs per cow	\$1,703	\$1,752	3%
Hired labor costs per cwt. milk	\$3.04	\$3.07	1%
Hired labor costs per worker equivalent	\$43,800	\$45,598	4%
Operating cost of producing milk per cwt.	\$15.41	\$15.89	3%
Purchased input cost of producing milk per cwt.	\$16.98	\$17.46	3%
Total cost of producing milk per cwt.	\$18.92	\$19.38	2%
Net milk price	\$16.14	\$18.31	13%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$11,676	\$11,464	-2%
Machinery and equipment per cow	\$1,742	\$1,737	-0.3%
Asset turnover ratio	0.44	0.53	20%
<i>Profitability</i>			
Net farm income without appreciation	\$103,940	\$651,371	527%
Net farm income without appreciation per cow	\$89	\$536	502%
Net farm income with appreciation	\$513	\$980,212	NA
Net farm income with appreciation per cow	\$0	\$807	NA
Labor & management income per operator/manager	-\$133,360	\$98,514	174%
Rate return on equity capital with appreciation	-2.3%	9.2%	500%
Rate return on equity capital without appreciation	-1.1%	5.3%	598%
Rate return on all capital with appreciation	0.4%	7.5%	1775%
Rate return on all capital without appreciation	1.1%	5.1%	350%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$8,176,618	\$8,803,608	8%
Debt to asset ratio	0.4	0.38	-5%
Farm debt per cow	\$4,530	\$4,378	-3%
Debt coverage ratio	0.8	1.42	78%

³⁹ Farm participating both years

Table 67.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHTSame 34 Farms, 1,000 to 1,449 Cows, New York State, 2018 & 2019, DFBS³⁹

Item	2018		2019		% Change Per Cwt.
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	1,163		1,215		4%
Cwt. of milk sold		310,469		327,101	5%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,621	\$17.31	\$5,238	\$19.45	12%
Dairy cattle	\$291	\$1.09	\$281	\$1.04	-5%
Dairy calves	\$29	\$0.11	\$26	\$0.10	-9%
Other livestock	\$25	\$0.10	\$21	\$0.08	-20%
Crops	\$123	\$0.46	\$47	\$0.18	-61%
Miscellaneous receipts	<u>\$154</u>	<u>\$0.58</u>	<u>\$185</u>	<u>\$0.69</u>	19%
Total Operating Receipts	\$5,244	\$19.65	\$5,799	\$21.53	10%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$811	\$3.04	\$827	\$3.07	1%
Dairy grain & concentrate	\$1,566	\$5.86	\$1,533	\$5.69	-3%
Dairy roughage	\$125	\$0.47	\$146	\$0.54	15%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$1	\$0.00	\$2	\$0.01	NA
Machine hire, rent & lease	\$119	\$0.45	\$144	\$0.54	20%
Machine repair & vehicle expense	\$222	\$0.83	\$238	\$0.88	6%
Fuel, oil & grease	\$159	\$0.60	\$150	\$0.56	-7%
Replacement livestock	\$1	\$0.00	\$11	\$0.04	NA
Breeding	\$44	\$0.16	\$43	\$0.16	0%
Veterinary & medicine	\$159	\$0.59	\$160	\$0.59	0%
Milk marketing	\$314	\$1.17	\$307	\$1.14	-3%
Bedding	\$86	\$0.32	\$92	\$0.34	6%
Milking supplies	\$89	\$0.33	\$91	\$0.34	3%
Cattle lease	\$1	\$0.00	\$0	\$0.00	NA
Custom boarding	\$89	\$0.33	\$90	\$0.33	0%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$15	\$0.06	\$14	\$0.05	-17%
Other livestock expense	\$19	\$0.07	\$26	\$0.10	43%
Fertilizer & lime	\$113	\$0.42	\$102	\$0.38	-10%
Seeds & plants	\$112	\$0.42	\$116	\$0.43	2%
Spray & other crop expense	\$42	\$0.16	\$50	\$0.19	19%
Crop professional fees	\$10	\$0.04	\$6	\$0.02	-50%
Land, building & fence repair	\$68	\$0.25	\$82	\$0.30	20%
Taxes	\$56	\$0.21	\$58	\$0.22	5%
Real estate rent & lease	\$97	\$0.36	\$107	\$0.40	11%
Insurance	\$44	\$0.17	\$42	\$0.15	-12%
Utilities	\$104	\$0.39	\$93	\$0.35	-10%
Interest paid	\$208	\$0.78	\$219	\$0.81	4%
Other professional fees	\$24	\$0.09	\$28	\$0.10	11%
Miscellaneous	<u>\$26</u>	<u>\$0.10</u>	<u>\$33</u>	<u>\$0.12</u>	20%
Total Operating Expenses	\$4,723	\$17.69	\$4,810	\$17.86	1%
Expansion livestock	\$15	\$0.06	\$29	\$0.11	83%
Extraordinary expenses	\$2	\$0.01	\$6	\$0.02	100%
Machinery depreciation	\$223	\$0.83	\$223	\$0.83	0%
Real estate depreciation	<u>\$193</u>	<u>\$0.72</u>	<u>\$195</u>	<u>\$0.72</u>	0%
Total Expenses	\$5,156	\$19.31	\$5,263	\$19.54	1%
Net Farm Income w/o Appreciation	\$89	\$0.33	\$536	\$1.99	503%

Table 68.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

34 Farms, 1,000 to 1,449 Cows, New York State, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14) ⁴⁰	(12)	(12)	(12)	(11)	(11)	(14)	(14)
32.2	1,414	38,351,223	28,472	4.5	22.4	67.7	1,821,005
26.4	1,327	35,994,597	27,928	3.9	19.9	53.1	1,465,320
24.7	1,230	33,034,233	27,276	3.5	18.6	50.0	1,330,160
22.3	1,100	30,114,806	26,345	2.8	17.1	45.7	1,210,988
18.4	1,031	26,861,406	24,781	1.3	8.7	40.4	1,080,842

Cost Control							
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$1,256	\$4.78	25	\$589	\$1,301	\$1,544	\$5.90	\$40,038
\$1,442	\$5.30	27	\$737	\$1,632	\$1,805	\$6.77	\$43,211
\$1,544	\$5.70	29	\$867	\$1,779	\$1,966	\$7.13	\$45,188
\$1,646	\$6.03	31	\$939	\$1,935	\$2,094	\$7.79	\$47,439
\$1,792	\$6.76	35	\$1,100	\$2,164	\$2,384	\$8.79	\$52,916

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,666	\$20.71	\$13.94	\$17.34	11.0	\$1,321,930	\$683,940	\$1,283,252
\$5,400	\$19.70	\$15.03	\$18.77	6.6	\$935,624	\$201,151	\$876,230
\$5,243	\$19.33	\$15.71	\$19.52	5.0	\$632,638	\$70,383	\$624,069
\$5,120	\$19.06	\$16.83	\$20.09	3.5	\$390,908	-\$4,072	\$377,460
\$4,810	\$18.67	\$18.37	\$21.67	1.4	\$71,546	-\$123,749	\$59,442

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$7,615	\$653	0.84	0.72	3.89	\$159	90	55
\$9,710	\$1,330	0.64	0.76	2.00	\$492	69	32
\$11,185	\$1,744	0.55	0.80	1.37	\$681	59	16
\$12,811	\$2,182	0.48	0.83	0.88	\$806	52	8
\$16,870	\$2,960	0.38	0.89	0.32	\$1,212	34	-3

⁴⁰ Page number of the participant's DFBS where the factor is located.

Table 69.

SELECTED PRODUCTION AND FINANCIAL FACTORS

31 Farms, 1,450 Cows and Greater, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Size of Business					
Average Cows	1,503	1,651	1,961	2,740	4,006
Average Heifers	1,147	1,421	1,642	2,128	3,161
Acres per Cow	1.06	1.48	1.68	1.94	2.40
Number of Worker Equivalents	27.1	33.5	38.8	48.1	73.3
Number of Owner Operators	1.5	2.3	3.1	4.0	5.0
Rates of Production					
Milk Sold per Cow	28,902	27,623	26,623	25,926	25,004
Hay DM per Acre, Tons	4.8	3.7	3.4	3.0	2.1
Corn Silage per Acre, Tons	22.9	20.6	18.7	17.9	15.9
Percent Butterfat	4.0	3.9	3.9	3.9	3.7
Percent Protein	3.2	3.1	3.1	3.1	3.0
Cull Rate, Percent	28.6	31.5	35.3	38.0	44.7
Labor Efficiency					
Cows per Worker	66.7	57.7	53.3	49.3	44.3
Milk Sold per Worker	1,818,461	1,550,772	1,423,335	1,317,958	1,165,653
Cost Control					
Dairy Feed & Crop Expense per Cwt. Milk	5.66	6.40	6.90	7.28	7.83
Labor & Machinery Costs per Cow	1,345	1,593	1,715	1,822	2,022
Hired Labor Cost per Cwt.	2.17	2.71	3.02	3.36	3.82
Hired Labor Costs per Worker Equivalent	39,831	42,728	45,194	49,086	55,612
Crop Input Costs per Acre	88	122	138	167	207
Machinery Costs per Acre	378	435	488	570	712
Operating cost of Producing Milk per Cwt.	12.53	14.34	15.13	15.76	16.76
Purch. Input Cost of Producing Milk per Cwt.	14.29	16.04	16.70	17.11	18.13
Total Cost of Producing Milk per Cwt.	17.21	17.93	18.56	18.98	19.90
Operating Expense Ratio	0.67	0.73	0.77	0.80	0.85
Capital Efficiency					
Farm Capital Per Cow	8,268	9,761	10,740	12,918	16,924
Machinery and Equipment per Cow	982	1,253	1,568	1,844	2,605
Real Estate per Cow	3,425	4,230	4,980	6,513	8,301
Asset Turnover Ratio	0.72	0.65	0.57	0.49	0.36
Working Capital as % of Tot. Oper. Expense	94	32	23	15	8
Profitability					
Labor & Management Income per Operator	972,215	416,161	285,889	167,197	-4,796
Rate Return on Equity Capital w/o Apprec.	16.32	9.22	8.09	6.32	1.84
Rate Return on All Capital w/o Apprec.	10.94	7.86	7.04	5.91	3.64
Financial Summary(based on market value, excluding deferred taxes)					
Debt to Asset Ratio	0.05	0.23	0.37	0.45	0.58
Farm Debt per Cow	559	2,590	3,988	4,475	6,019
Debt Coverage Ratio	6.84	2.20	1.62	1.15	0.32

Table 70.

RECEIPTS AND EXPENSES PER COW
31 Farms, 1,450 Cows and Greater, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	1,503	1,651	1,961	2,740	4,006
Cwt. of Milk Sold	404,845	440,970	512,475	750,469	1,057,485
<u>Accrual Operating Receipts</u>					
Milk	5,652	5,442	5,184	4,990	4,660
Dairy cattle	466	335	300	275	199
Dairy calves	40	24	18	13	-2
Other livestock	17	0	0	0	-2
Crops	249	131	69	-5	-92
Miscellaneous receipts	378	208	180	157	96
Total Receipts	6,382	6,066	5,797	5,558	5,131
<u>Accrual Operating Expenses</u>					
Hired labor	586	710	812	904	1,009
Dairy grain & concentrates	1,178	1,346	1,511	1,612	1,764
Dairy roughage	3	36	64	131	308
Nondairy feed	0	0	0	0	0
Professional nutritional services	0	0	0	0	8
Machinery hire/rent/lease	26	67	106	176	281
Machinery repair & farm vehicle exp.	159	209	258	294	365
Fuel	109	124	137	155	177
Replacement livestock	0	0	0	1	86
Breeding	23	35	45	58	82
Veterinary, medicine & hoof care	101	130	153	169	211
Milk marketing	211	262	298	346	452
Bedding	31	63	82	116	140
Milking supplies	44	62	80	109	146
Cattle lease	0	0	0	0	38
Custom boarding	0	0	6	96	300
rBst expense	0	0	0	0	0
Livestock professional fees	1	10	14	18	37
Other livestock expense	0	0	13	30	65
Fertilizer & lime	38	67	82	105	143
Seeds & plants	44	79	94	109	157
Spray & other crop expenses	17	34	48	68	114
Crop professional fees	0	0	0	3	17
Land, building, fence repair	36	56	71	93	147
Taxes ²	49	63	74	99	
Real estate rent/lease	33	47	58	80	140
Insurance	21	34	45	53	71
Utilities	55	72	81	103	119
Interest	28	134	213	244	314
Other professional fees	9	20	29	36	50
Miscellaneous	11	16	21	31	60
Total Farm Operating Costs	3,830	4,337	4,643	4,851	5,118
Expansion livestock	0	0	0	23	143
Extraordinary expenses	0	0	0	0	0
Machinery depreciation	139	185	211	253	333
Building depreciation	127	160	189	231	288
Total farm expense	4,224	4,868	5,106	5,286	5,555
Net Farm Income	1,487	918	746	584	265

Table 71.

RECEIPTS AND EXPENSES PER CWT. OF MILK SOLD

31 Farms, 1,450 Cows and Greater, New York State, 2019

Item	QUINTILE				
	1	2	3	4	5
Average Cows	1,503	1,651	1,961	2,740	4,006
Cwt. of Milk Sold	404,845	440,970	512,475	750,469	1,057,485
<u>Accrual Operating Receipts</u>					
Milk	20.40	19.51	19.25	19.02	18.48
Dairy cattle	1.79	1.21	1.12	1.04	0.76
Dairy calves	0.14	0.09	0.07	0.05	-0.01
Other livestock	0.06	0.00	0.00	0.00	-0.01
Crops	0.92	0.48	0.26	-0.02	-0.35
Miscellaneous receipts	1.41	0.77	0.67	0.58	0.37
Total Receipts	23.02	22.00	21.62	21.12	20.15
<u>Accrual Operating Expenses</u>					
Hired labor	2.17	2.71	3.02	3.36	3.82
Dairy grain & concentrates	4.59	5.04	5.58	6.06	6.36
Dairy roughage	0.01	0.13	0.24	0.48	1.17
Nondairy feed	0.00	0.00	0.00	0.00	0.00
Professional nutritional services	0.00	0.00	0.00	0.00	0.03
Machinery hire/rent/lease	0.10	0.24	0.41	0.63	1.06
Machinery repair & farm vehicle exp.	0.59	0.77	0.97	1.11	1.38
Fuel	0.40	0.46	0.51	0.59	0.68
Replacement livestock	0.00	0.00	0.00	0.00	0.34
Breeding	0.09	0.13	0.17	0.21	0.32
Veterinary, medicine & hoof care	0.39	0.49	0.56	0.62	0.81
Milk marketing	0.82	0.98	1.13	1.28	1.62
Bedding	0.11	0.23	0.32	0.42	0.54
Milking supplies	0.17	0.23	0.30	0.41	0.55
Cattle lease	0.00	0.00	0.00	0.00	0.15
Custom boarding	0.00	0.00	0.02	0.36	1.10
rBst expense	0.00	0.00	0.00	0.00	0.00
Livestock professional fees	0.00	0.04	0.05	0.07	0.14
Other livestock expense	0.00	0.00	0.05	0.11	0.25
Fertilizer & lime	0.15	0.25	0.30	0.39	0.53
Seeds & plants	0.16	0.30	0.35	0.40	0.59
Spray & other crop expenses	0.06	0.13	0.18	0.26	0.43
Crop professional fees	0.00	0.00	0.00	0.01	0.06
Land, building, fence repair	0.14	0.21	0.27	0.34	0.53
Taxes	0.12	0.18	0.23	0.28	0.37
Real estate rent/lease	0.12	0.18	0.22	0.30	0.53
Insurance	0.08	0.12	0.16	0.20	0.27
Utilities	0.21	0.27	0.31	0.36	0.45
Interest	0.11	0.50	0.80	0.91	1.13
Other professional fees	0.04	0.08	0.11	0.14	0.19
Miscellaneous	0.04	0.06	0.08	0.11	0.22
Total Farm Operating Costs	14.79	16.34	17.08	17.70	19.11
Expansion livestock	0.00	0.00	0.00	0.09	0.54
Extraordinary expenses	0.00	0.00	0.00	0.00	0.00
Machinery depreciation	0.53	0.69	0.80	0.93	1.24
Building depreciation	0.49	0.60	0.71	0.85	1.04
Total farm expense	16.44	18.25	18.77	19.30	20.67
Net Farm Income	5.58	3.49	2.68	2.19	1.00

Table 72.

PROGRESS OF THE FARM BUSINESSSame 31 Farms, 1,450 Cows and Greater, New York State, 2018 & 2019, DFBS⁴¹

SELECTED FACTORS	Average of 31 Farms		Percent Change
	2018	2019	
<i>Size of Business</i>			
Average number of cows	2,190	2,344	7%
Average number of heifers	1,850	1,876	1%
Milk sold, pounds	56,911,532	62,588,086	10%
Worker equivalent	42.6	43.6	2%
Total tillable acres	3,701	3,829	3%
<i>Rates of Production</i>			
Milk sold per cow, pounds	25,988	26,700	3%
Hay DM per acre, tons	3.3	3.30	0%
Corn silage per acre, tons	19.1	18.70	-2%
<i>Labor Efficiency</i>			
Cows per worker	51.4	53.7	4%
Milk sold per worker, pounds	1,336,893	1,435,177	7%
<i>Cost Control and Milk Price</i>			
Grain & concentrate per cwt. milk	\$5.64	\$5.56	-1%
Net milk income over purchased grain & conc. per cow	\$2,717	\$3,373	24%
Dairy feed & crop expense per cwt. milk	\$7.03	\$6.82	-3%
Labor and machinery costs per cow	\$1,619	\$1,658	2%
Hired labor costs per cwt. milk	\$3.05	\$3.00	-2%
Hired labor costs per worker equivalent	\$44,476	\$46,844	5%
Operating cost of producing milk per cwt.	\$14.66	\$14.98	2%
Purchased input cost of producing milk per cwt.	\$16.26	\$16.48	1%
Total cost of producing milk per cwt.	\$18.32	\$18.42	1%
Net milk price	\$16.03	\$18.18	13%
<i>Capital Efficiency (average for year)</i>			
Farm capital per cow	\$11,551	\$11,199	-3%
Machinery and equipment per cow	\$1,596	\$1,521	-5%
Asset turnover ratio	0.43	0.53	23%
<i>Profitability</i>			
Net farm income without appreciation	\$533,748	\$1,788,941	235%
Net farm income without appreciation per cow	\$244	\$763	213%
Net farm income with appreciation	\$258,747	\$2,402,230	828%
Net farm income with appreciation per cow	\$118	\$1,025	769%
Labor & management income per operator/manager	-\$102,580	\$291,181	384%
Rate return on equity capital with appreciation	-0.4%	11.7%	3025%
Rate return on equity capital without appreciation	1.3%	8.2%	558%
Rate return on all capital with appreciation	1.3%	9.6%	638%
Rate return on all capital without appreciation	2.4%	7.2%	202%
<i>Financial Summary (based on market value, excluding deferred taxes)</i>			
Farm net worth, end year	\$16,883,581	\$18,510,480	10%
Debt to asset ratio	0.34	0.31	-9%
Farm debt per cow	\$3,836	\$3,552	-7%
Debt coverage ratio	1.15	2.04	77%

⁴¹ Farm participating both years

Table 73.

RECEIPTS & EXPENSES PER COW AND PER HUNDREDWEIGHTSame 31 Farms, 1,450 Cows and Greater, New York State, 2018 & 2019, DFBS⁴¹

Item	2018		2019		% Change Per Cwt.
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	
Average number of cows	2,190		2,344		7%
Cwt. of milk sold		569,115		625,881	10%
ACCRUAL OPERATING RECEIPTS					
Milk	\$4,470	\$17.20	\$5,163	\$19.34	12%
Dairy cattle	\$352	\$1.36	\$312	\$1.17	-14%
Dairy calves	\$21	\$0.08	\$18	\$0.07	-13%
Other livestock	\$12	\$0.05	\$2	\$0.01	-80%
Crops	\$125	\$0.48	\$43	\$0.16	-67%
Miscellaneous receipts	<u>\$169</u>	<u>\$0.65</u>	<u>\$186</u>	<u>\$0.70</u>	8%
Total Operating Receipts	\$5,150	\$19.82	\$5,724	\$21.44	8%
ACCRUAL OPERATING EXPENSES					
Hired labor	\$792	\$3.05	\$800	\$3.00	-2%
Dairy grain & concentrate	\$1,466	\$5.64	\$1,485	\$5.56	-1%
Dairy roughage	\$101	\$0.39	\$104	\$0.39	0%
Nondairy feed	\$0	\$0.00	\$0	\$0.00	NA
Professional nutritional services	\$1	\$0.00	\$1	\$0.00	NA
Machine hire, rent & lease	\$105	\$0.40	\$131	\$0.49	23%
Machine repair & vehicle expense	\$216	\$0.83	\$244	\$0.91	10%
Fuel, oil & grease	\$148	\$0.57	\$138	\$0.52	-9%
Replacement livestock	\$7	\$0.03	\$21	\$0.08	167%
Breeding	\$57	\$0.22	\$49	\$0.18	-18%
Veterinary & medicine	\$151	\$0.58	\$151	\$0.56	-3%
Milk marketing	\$304	\$1.17	\$308	\$1.15	-2%
Bedding	\$74	\$0.28	\$83	\$0.31	11%
Milking supplies	\$79	\$0.31	\$89	\$0.33	6%
Cattle lease	\$4	\$0.02	\$7	\$0.03	50%
Custom boarding	\$77	\$0.30	\$85	\$0.32	7%
BST expense	\$0	\$0.00	\$0	\$0.00	NA
Livestock professional fees	\$12	\$0.05	\$15	\$0.05	0%
Other livestock expense	\$19	\$0.07	\$21	\$0.08	14%
Fertilizer & lime	\$89	\$0.34	\$83	\$0.31	-9%
Seeds & plants	\$110	\$0.42	\$94	\$0.35	-17%
Spray & other crop expense	\$57	\$0.22	\$50	\$0.19	-14%
Crop professional fees	\$4	\$0.01	\$4	\$0.02	100%
Land, building & fence repair	\$64	\$0.25	\$76	\$0.28	12%
Taxes	\$61	\$0.23	\$60	\$0.22	-4%
Real estate rent & lease	\$73	\$0.28	\$65	\$0.24	-14%
Insurance	\$40	\$0.16	\$41	\$0.15	-6%
Utilities	\$92	\$0.35	\$82	\$0.31	-11%
Interest paid	\$179	\$0.69	\$188	\$0.70	1%
Other professional fees	\$29	\$0.11	\$26	\$0.10	-9%
Miscellaneous	<u>\$22</u>	<u>\$0.09</u>	<u>\$26</u>	<u>\$0.10</u>	11%
Total Operating Expenses	\$4,432	\$17.05	\$4,526	\$16.95	-1%
Expansion livestock	\$57	\$0.22	\$35	\$0.13	-41%
Extraordinary expenses	\$3	\$0.01	\$0	\$0.00	-100%
Machinery depreciation	\$217	\$0.83	\$208	\$0.78	-6%
Real estate depreciation	<u>\$198</u>	<u>\$0.76</u>	<u>\$191</u>	<u>\$0.72</u>	-5%
Total Expenses	\$4,907	\$18.87	\$4,960	\$18.58	-2%
Net Farm Income w/o Appreciation	\$244	\$0.94	\$763	\$2.86	204%

Table 74.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

31 Farms, 1,450 Cows and Greater, New York State, 2019, DFBS

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalents	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(14) ⁴²	(12)	(12)	(12)	(11)	(11)	(14)	(14)
73.3	4,006	105,748,467	28,902	4.8	22.9	66.7	1,818,461
48.1	2,740	75,046,893	27,623	3.7	20.6	57.7	1,550,772
38.8	1,961	51,247,477	26,623	3.4	18.7	53.3	1,423,335
33.5	1,651	44,097,039	25,926	3.0	17.9	49.3	1,317,958
27.1	1,503	40,484,487	25,004	2.1	15.9	44.3	1,165,653

Cost Control							
Grain Bought per Cow	Grain Bought per Cwt.	% Grain is of Milk Receipts	Machinery Costs per Cow	Labor & Machinery Costs/Cow	Feed & crop Expenses per Cow	Feed & Crop Expenses per Cwt. Milk	Hired Labor Cost per Wkr. Equivalent
(12)	(12)	(12)	(14)	(14)	(12)	(12)	(14)
\$1,178	\$4.59	24	\$598	\$1,345	\$1,482	\$5.66	\$39,831
\$1,346	\$5.04	26	\$761	\$1,593	\$1,663	\$6.40	\$42,728
\$1,511	\$5.58	29	\$863	\$1,715	\$1,840	\$6.90	\$45,194
\$1,612	\$6.06	31	\$910	\$1,822	\$1,988	\$7.28	\$49,086
\$1,764	\$6.36	34	\$1,023	\$2,022	\$2,166	\$7.83	\$55,612

Value of Production			Profitability				
Milk Receipts Per Cow	Milk Receipts Per Cwt.	Opr. Cost Milk Production per Cwt.	Total Cost Milk Production Per Cwt.	% Rate of Return on All Capital w/o Apprec.	Net Farm Income Without Apprec.	Labor & Management Income per Operator	Change in Net Worth with Apprec.
(12)	(12)	(12)	(12)	(4)	(4)	(4)	(8)
\$5,652	\$20.40	\$12.53	\$17.21	10.9	\$3,535,691	\$972,215	\$3,146,426
\$5,442	\$19.51	\$14.34	\$17.93	7.9	\$2,119,147	\$416,161	\$2,117,968
\$5,184	\$19.25	\$15.13	\$18.56	7.0	\$1,708,782	\$285,889	\$1,604,728
\$4,990	\$19.02	\$15.76	\$18.98	5.9	\$1,183,275	\$167,197	\$1,179,181
\$4,660	\$18.48	\$16.76	\$19.90	3.6	\$596,542	-\$4,796	\$569,027

Financial Efficiency							
Investment per Cow	Machinery Investment per Cow	Asset Turnover Ratio	Operating Expense Ratio	Debt Coverage Ratio	Planned Debt Payments per Cow	Percent Equity	Working Capital as % of Opr. Expense
(14)	(14)	(14)	(14)	(10)	(12)	(7)	(7)
\$8,268	\$982	0.72	0.67	6.84	\$66	97	94
\$9,761	\$1,253	0.65	0.73	2.20	\$386	79	32
\$10,740	\$1,568	0.57	0.77	1.62	\$554	65	23
\$12,918	\$1,844	0.49	0.80	1.15	\$751	57	15
\$16,924	\$2,605	0.36	0.85	0.32	\$882	44	8

⁴² Page number of the participant's DFBS where the factor is located.

Farm Business Charts

The Farm Business Chart is a tool that can be used in analyzing a business by drawing a line through the number in each column that represents the current level of management performance. The number at the top of each column is the average of the top 10 percent of the 159 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 sorted independently of the others.** The farms that are in the top 10 percent for one factor would not necessarily be the same farms that 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 variables affect the level of costs and must be considered when analyzing these factors.

Table 75.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

159 New York Dairy Farms, 2019

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	
56.7	3,105	82,987,450	28,777	5.1	23.5	70.7	1,709,730	
33.6	1,631	43,496,137	28,076	4.2	21.3	58.9	1,473,325	
26.3	1,349	36,515,020	27,445	3.8	20.2	54.0	1,363,650	
22.5	1,106	30,093,373	26,794	3.5	19.6	51.0	1,280,291	
19.1	930	24,234,611	26,267	3.2	19.0	48.8	1,210,680	

14.9	720	17,569,608	25,692	2.9	18.2	45.9	1,152,492	
11.0	540	13,218,381	25,185	2.7	17.6	43.4	1,070,503	
7.5	339	8,222,289	24,059	2.4	16.5	39.9	953,422	
4.9	190	4,373,273	22,431	2.0	15.2	36.2	790,603	
2.6	81	1,656,882	16,641	1.2	6.8	24.9	472,604	

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			
\$935	22%	\$494	\$1,206	\$1,220	\$5.65			
1,175	25	681	1,523	1,497	6.12			
1,291	27	751	1,631	1,592	6.55			
1,368	28	808	1,722	1,674	6.89			
1,424	29	866	1,797	1,778	7.10			

1,494	30	904	1,862	1,875	7.28			
1,571	31	960	1,963	1,959	7.57			
1,644	33	1,048	2,044	2,040	7.94			
1,745	34	1,156	2,216	2,178	8.32			
1,910	48	1,548	2,900	2,371	9.28			

The profitability section shows the variation in farm income by decile and enables a dairy producer 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 producer who ranks at or near the top of most of these columns is in a very favored position.

Table 75. (continued)

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS**
159 New York Dairy Farms, 2019

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.
\$5,731	\$21.84	\$2,772	\$12.58	\$3,956	\$17.10
5,479	20.25	3,315	13.96	4,579	18.07
5,328	19.82	3,585	14.51	4,801	18.72
5,188	19.60	3,748	15.02	5,001	19.11
5,079	19.43	3,927	15.41	5,139	19.67
4,970	19.26	4,046	15.76	5,238	20.19
4,826	19.13	4,193	16.22	5,343	20.79
4,595	18.95	4,335	16.91	5,484	21.62
4,357	18.72	4,545	17.76	5,744	23.45
3,405	18.30	5,002	20.14	6,371	30.93

Profitability						
Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
\$2,647,139	\$1,374	0.24	\$3,389,131	\$1,872	\$1,543,396	\$785,012
1,313,193	903	0.17	1,814,732	1,345	691,985	284,976
869,436	787	0.14	1,261,083	1,110	390,748	170,649
588,962	704	0.13	969,895	947	237,038	104,335
429,745	608	0.11	727,124	867	132,692	53,479
290,086	513	0.09	536,501	779	61,647	24,947
202,743	386	0.07	355,302	624	7,364	1,833
107,041	252	0.05	201,465	505	-48,754	-24,690
18,062	87	0.02	77,576	320	-120,855	-67,926
-128,461	-474	-0.14	-36,236	-230	-346,377	-182,693

The farm financial analysis chart is designed similarly to the farm business chart and may be used to measure the financial health of the farm business.

Table 76.

FINANCIAL ANALYSIS CHART
159 New York Dairy Farms, 2019

Liquidity/Repayment							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Paymt. as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
\$ 0	\$1,421	12.24	27.5	2%	\$ 162	77%	54.3
118	1,110	2.43	3.30	6	1,337	40	7.3
277	973	1.82	2.23	10	2,322	33	4.2
432	881	1.37	1.71	12	3,229	27	3.2
537	797	1.19	1.48	14	3,979	22	2.5

638	689	1.01	1.26	16	4,466	18	2.1
736	595	0.87	1.05	18	4,939	14	1.7
802	479	0.71	0.86	21	5,550	10	1.4
889	364	0.38	0.54	24	6,316	4	1.1
1,137	48	-0.11	-0.15	45	7,839	-22	0.4
Solvency				Operational Ratios			
Leverage Ratio ⁴³	Percent Equity	Debt/Asset Ratio		Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio	
		Current & Intermediate	Long Term				
0.01	99%	0.01	0.00	0.67	0.00	0.03	
0.11	90	0.11	0.00	0.72	0.01	0.05	
0.26	80	0.20	0.08	0.74	0.02	0.06	
0.39	72	0.26	0.18	0.76	0.03	0.07	
0.49	67	0.31	0.25	0.78	0.04	0.07	

0.60	63	0.37	0.32	0.79	0.04	0.08	
0.71	58	0.42	0.38	0.81	0.05	0.09	
0.84	54	0.50	0.47	0.83	0.05	0.10	
1.11	47	0.61	0.59	0.87	0.06	0.11	
2.83	30	0.88	1.01	0.98	0.08	0.17	
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 ⁴⁴	
0.88	\$ 2,344	\$ 660	\$ 6,885	\$ 2,440,493	30%	16%	
0.66	3,700	1,079	9,230	1,359,758	17	11	
0.60	4,235	1,341	9,936	886,001	12	9	
0.55	4,601	1,663	10,729	649,634	9	8	
0.52	5,032	1,869	11,323	489,450	8	7	

0.48	5,598	2,068	12,170	316,729	6	6	
0.44	6,586	2,457	12,999	160,296	5	5	
0.40	7,200	2,746	13,992	76,346	2	3	
0.34	8,433	3,177	15,955	655	-2	0	
0.24	12,351	5,189	22,192	-87,291	-12	-6	

⁴³Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

⁴⁴Return on all farm capital (no deduction for interest paid) divided by total farm assets.

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 13).

Accrual Expenses: (defined on page 16).

Accrual Receipts: (defined on page 16).

Annual Cash Flow Statement: (defined on page 23).

Appreciation: (defined on page 17).

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 16 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 on a market value basis.

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.

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 23).

Cash Flow Coverage Ratio: (defined on page 24).

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 14).

Cash Receipts: (defined on page 16).

Change in Accounts Payable: (defined on page 16).

Change in Accounts Receivable: (defined under Accrual Receipts on page 16).

Change in Advanced Government Receipts: (defined under Accrual Receipts page 16).

Change in Inventory: (defined on page 14).

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 32).

Cost of Term Debt: A weighted average of the cost of borrowed intermediate and long term capital used on the farm. Calculated 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. Does 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: DHI: Dairy Herd Improvement official milk production records. Owner Sampler: weights and samples are taken by farmer but tested by DHI. 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 24)

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

Debt to Asset Ratios: (defined on page 21).

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 14).

Farm Business Chart: (see definition and application on page 77).

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 page 24.)

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 79.

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 18).

Labor and Management Income Per Operator: (defined on page 18).

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. Hired: All other employees hired by the farm.

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

Leverage Ratio: (defined on page 21).

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 and automatic milking systems.

Net Farm Income: (defined on page 17).

Net Farm Income from Operations Ratio: Net farm income (without appreciation) divided by total accrual receipts

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 16).

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 32).

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 but not limited to; hauling and livestock marketing commissions, ear tags, leg bands, neck bands, hand scrapers.

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 15).

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 32).

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 19).

Return Per Hundredweight To Operator's Labor, Management and Capital: Gross Milk receipts less purchased input costs less unpaid family labor, all divided by total hundredweight of milk sold.

Return to all Capital: (defined on page 19).

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 are 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 22).

Stocking Rate: (defined on page 28).

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 32).

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. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2022-11	Dairy Business Summary New York State 2019		Karszes, J and Augello, L.
2022-10	Progress of the Dairy Farm Report, Selected Financial and Production Factors, New York, 2021		Karszes, J. and Augello, L.
2022-09	2020 Farm Employee Compensation Benchmark Report		Stup, R., Smith, L., and Karszes, J.
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