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**Six Year Trend Analysis
New York State Dairy Farms
Selected Financial and Production Factors**

Dairy Farm Business Summary

New York State

Same 138 Farms

2011-2016

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Six Year Trend Analysis
New York Dairy Farms
Selected Financial and Production Factors
Dairy Farm Business Summary
New York State
Same 138 Farms, 2011 – 2016

Jason Karszes¹ & Kayla Windecker¹

Trend analysis is an important use of benchmarking within a dairy businesses. While current year performance is important, understanding trends within the business and the industry may provide additional insight into strengths and areas of opportunities within the business. To provide benchmark trends of various financial and performance factors over time, data was utilized from 138 farms that have participated in the Dairy Farm Business Summary and Analysis Project in New York State for 6 years, from 2011 thru 2016. This information is reported on an average basis, the top 20% of farms as determined by average return on assets w/o appreciation over the size years, and the remaining 80% of farms. For selected factors, the trends and changes between the top 20% of farms and the remaining 80% are highlighted. The following tables present these benchmarks:

Table 1	Selected Characteristics, Six Year Comparison, Average All 138 Farms
Table 2	Top 20% of Farms vs Remaining 80% of Farms, Percent Change and Differences
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Table 8	“Legal 21” Farm Financial Ratios, Same 28 Farms, Top 20%
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To utilize these tables, place your number for the appropriate benchmark next to or below the corresponding number for the appropriate year. Once all six years are recorded, than can compare your trend to the benchmark trend. If your trend is different than the industry, than can ask the question why, and if it is better or worse than the industry trend. If you are a DFBS cooperator, you can work with your extension educator to look at these trends and comparisons for all farms and your farm business.

These benchmarks and comparison are provided for use for comparison purposes only and represents the performance of those farms participating in the Dairy Farm Business Summary and Analysis Program in New York State. These numbers don’t represent the average for all dairy farms across New York and are from farms that are generally considered above average dairy farms in New York. No analysis or interpretation of these benchmarks and ratios is provided.

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Selected Characteristics, Six Year Comparison

Table 1

Same 138 Farms

New York State, Dairy Farm Business Summary & Analysis Program

	2011	2012	2013	2014	2015	2016	% Change
Size of Business							
average number of cows	660	685	714	752	786	828	25.5%
percent heifers to cows	86%	86%	86%	85%	85%	86%	
milk sold, pounds	16,439,570	17,477,188	18,423,168	19,313,253	20,254,990	21,871,229	33.0%
worker equivalent	14.7	15.6	16.1	17.1	17.7	18.1	
tillable acres per cow	2.04	2.10	2.07	2.02	2.03	2.00	-2.1%
corn grain acres per cow	0.24	0.19	0.18	0.18	0.18	0.16	
Rates of Production							
milk sold per cow, pounds	24,896	25,526	25,815	25,685	25,760	26,428	6.2%
cull rate	35%	35%	35%	34%	34%	33%	
net calf & cow sales, per cow	359	402	412	530	582	424	
Labor Efficiency							
cows per worker	45.1	44.0	44.5	43.9	44.4	45.8	1.7%
milk sold per worker, pounds	1,122,155	1,121,771	1,147,146	1,127,452	1,143,058	1,209,692	7.8%
Cost Control and Milk Price							
dairy feed & crop expense per cwt. milk	\$ 7.53	\$ 8.42	\$ 8.89	\$ 9.12	\$ 8.28	\$ 7.32	
labor and machinery costs per cow	\$ 1,645	\$ 1,705	\$ 1,768	\$ 1,860	\$ 1,784	\$ 1,710	
labor cost per cwt.	\$ 2.76	\$ 2.80	\$ 2.82	\$ 2.97	\$ 3.03	\$ 2.91	
labor cost per hired worker equivalent	\$ 36,998	\$ 37,197	\$ 38,438	\$ 39,159	\$ 40,532	\$ 41,098	11.1%
operating cost of producing milk per cwt.	\$ 15.44	\$ 15.77	\$ 16.61	\$ 17.21	\$ 15.82	\$ 14.75	
purch. input cost of producing milk per cwt.	\$ 16.86	\$ 17.24	\$ 18.16	\$ 18.88	\$ 17.51	\$ 16.45	
total cost of producing milk per cwt.	\$ 18.93	\$ 19.37	\$ 20.37	\$ 21.24	\$ 19.96	\$ 18.78	
net milk price per cwt.	\$ 20.84	\$ 18.93	\$ 20.83	\$ 24.58	\$ 17.37	\$ 16.14	
Capital Efficiency(average for year)							
farm capital per cow	\$ 9,576	\$ 10,282	\$ 10,801	\$ 11,509	\$ 12,142	\$ 12,102	26.4%
machinery and equipment per cow	\$ 1,591	\$ 1,714	\$ 1,817	\$ 1,954	\$ 2,063	\$ 2,016	
net reinvestment per cow	\$ (948)	\$ (999)	\$ (930)	\$ (1,276)	\$ (1,205)	\$ (846)	
Profitability							
net farm income without appreciation	\$ 791,601	\$ 446,055	\$ 648,867	\$ 1,275,695	\$ 163,615	\$ 140,206	
net farm income w/o apprec. per cow	\$ 1,199	\$ 651	\$ 909	\$ 1,697	\$ 208	\$ 169	
labor & management income per oper.	\$ 280,982	\$ 96,605	\$ 180,796	\$ 449,340	\$ (77,833)	\$ (89,306)	
rate of return on equity capital w/o apprec.	15.7%	6.5%	9.6%	18.6%	0.0%	-0.4%	
rate of return on all capital w/o apprec.	11.8%	5.6%	7.7%	14.0%	1.0%	0.9%	
Financial Summary							
farm net worth, end of year	4,606,085	4,973,243	5,475,261	6,625,354	6,711,851	6,795,337	62.6%
debt to asset ratio	0.31	0.32	0.32	0.29	0.31	0.33	
farm debt per cow	\$ 3,115	\$ 3,422	\$ 3,519	\$ 3,493	\$ 3,899	\$ 4,041	29.7%
retained earnings	\$ 642,014	\$ 212,564	\$ 354,602	\$ 1,033,876	\$ (113,290)	\$ (90,576)	\$ 2,039,190
valuation equity	\$ 61,948	\$ 60,753	\$ 47,523	\$ 94,684	\$ 75,200	\$ 46,955	\$ 387,063

Table 2

Top 20% of Farms vs. Remaining 80% of Farms
Percent Change and Differences, Selected Measures
Same 138 Farms, 2011 through 2016
Dairy Farm Business Summary, New York State

	2011	2016	Change	Percent Change	Percent Difference	
					2011	2016
Average Herd Size, Milking & Dry						
Top 20%	1,000	1,350	350	35.0%	74.2%	94.2%
80%	574	695	121	21.1%		
Milk per Cow, Lbs.						
Top 20%	25,939	26,978	1,039	4.0%	6.2%	3.1%
80%	24,433	26,156	1,722	7.0%		
Milk Sold per Farm, Lbs.						
Top 20%	25,949,070	36,415,560	10,466,490	40.3%	85.1%	100.4%
80%	14,018,969	18,169,035	4,150,066	29.6%		
Cows per Worker						
Top 20%	48.7	49.5	0.84	1.7%	11.4%	12.1%
80%	43.7	44.2	0.47	1.1%		
Milk Sold per Worker, Lbs.						
Top 20%	1,262,728	1,335,371	72,642	5.8%	18.4%	15.7%
80%	1,066,893	1,154,322	87,430	8.2%		
Hired Labor Cost per Cwt.						
Top 20%	\$2.63	\$2.83	\$0.19	7.3%	-6.5%	-4.1%
80%	\$2.82	\$2.95	\$0.13	4.6%		
Cost per Hired Worker						
Top 20%	\$38,025	\$42,199	\$4,174	11.0%	4.0%	4.0%
80%	\$36,563	\$40,582	\$4,020	11.0%		
Investment Per Cow						
Top 20%	\$8,948	\$11,364	\$2,416	27.0%	-9.2%	-8.8%
80%	\$9,855	\$12,467	\$2,612	26.5%		
Machinery Invest. per Cow						
Top 20%	\$1,410	\$1,824	\$413.98	29.4%	-15.6%	-13.6%
80%	\$1,672	\$2,111	\$439.86	26.3%		
Debt Per Cow, End of Year						
Top 20%	\$2,054	\$2,696	\$642.00	31.3%	-42.8%	-42.7%
80%	\$3,591	\$4,707	\$1,116.00	31.1%		
Net Worth, Beginning of 2011 to End of 2016						
Top 20%	\$6,142,291	\$12,126,588	\$5,984,297	97.4%	95.3%	123.0%
80%	\$3,145,723	\$5,438,291	\$2,292,568	72.9%		

Table 3
Top 20% of Farms vs. Remaining 80% of Farms

Selected Measures, Six Year Comparison

Same 138 Farms, 2011-2016

Dairy Farm Business Summary, New York State

	2011	2012	2013	2014	2015	2016
Net Investment Per Cow						
Top 20%	\$1,094	\$1,056	\$956	\$1,503	\$1,112	\$1,134
80%	\$883	\$973	\$919	\$1,171	\$1,248	\$704
Farm Capital per Cow						
Top 20%	\$8,948	\$9,546	\$10,261	\$11,048	\$11,529	\$11,364
80%	\$9,855	\$10,616	\$11,045	\$11,724	\$12,433	\$12,467
Tillable Acres per Cow						
Top 20%	1.86	1.83	1.84	1.83	1.85	1.84
80%	2.12	2.16	2.11	2.06	2.07	2.05
Corn Grain Acres per Cow						
Top 20%	0.18	0.15	0.14	0.16	0.17	0.15
80%	0.27	0.21	0.20	0.19	0.19	0.16
Crop Revenue, Per Cow						
Top 20%	\$74	\$142	\$167	\$131	\$75	\$60
80%	\$154	\$205	\$158	\$164	\$105	\$92
Cull Rate, Percent						
Top 20%	34%	35%	34%	33%	33%	34%
80%	36%	35%	36%	34%	35%	33%
Net Calf & Cow Income, per Cow(1)						
Top 20%	\$371	\$423	\$415	\$552	\$619	\$454
80%	\$319	\$377	\$388	\$502	\$549	\$397
Percent Heifers to Cows						
Top 20%	88%	87%	87%	86%	86%	86%
80%	85%	85%	85%	85%	85%	86%
Operating Cost to Produce Milk per Cwt.						
Top 20%	\$14.37	\$14.88	\$15.38	\$15.94	\$14.67	\$13.86
80%	\$15.94	\$16.19	\$17.19	\$17.83	\$16.40	\$15.21
Total Cost to Produce Milk per Cwt.						
Top 20%	\$17.68	\$18.22	\$18.95	\$19.75	\$18.68	\$17.74
80%	\$19.51	\$19.92	\$21.05	\$21.96	\$20.59	\$19.31
Net Farm Income Per Cow						
Top 20%	\$1,574	\$979	\$1,360	\$2,116	\$573	\$485
80%	\$1,034	\$503	\$703	\$1,503	\$35	\$13
Net Milk Price per Cwt.						
Top 20%	\$20.90	\$19.10	\$21.08	\$24.57	\$17.55	\$16.36
80%	\$20.81	\$18.85	\$20.71	\$24.59	\$17.28	\$16.02
Farm Operating Receipts per Cwt.						
Top 20%	\$24.09	\$22.67	\$24.73	\$28.78	\$21.63	\$20.01
80%	\$24.48	\$23.21	\$24.72	\$28.81	\$21.67	\$19.70
Working Capital as Percent of Expenses						
Top 20%	31%	29%	32%	41%	31%	28%
80%	20%	18%	18%	25%	18%	15%

(1) Net Calf & Cow Income, per Cow = cattle revenue plus calf revenue - purchased replacement
 - expansion cattle expense.



Table 3 Continued

	2011	2012	2013	2014	2015	2016
Labor Cost per Cwt.						
Top 20%	\$2.63	\$2.66	\$2.66	\$2.85	\$2.89	\$2.83
80%	\$2.82	\$2.86	\$2.90	\$3.03	\$3.10	\$2.95
Purchased Feed per Cwt.						
Top 20%	\$5.98	\$6.65	\$7.04	\$7.27	\$6.56	\$5.70
80%	\$6.16	\$6.76	\$7.09	\$7.46	\$6.66	\$5.85
Livestock Expenses, Total (2) per Cwt.						
Top 20%	\$2.99	\$2.86	\$2.97	\$3.08	\$3.11	\$2.99
80%	\$3.47	\$3.45	\$3.49	\$3.59	\$3.55	\$3.30
Machinery & Fuel Expenses (3) per Cwt.						
Top 20%	\$1.89	\$2.01	\$2.06	\$2.20	\$1.88	\$1.64
80%	\$2.38	\$2.33	\$2.44	\$2.59	\$2.19	\$1.88
Machinery Depreciation Expense per Cwt.						
Top 20%	\$0.80	\$0.78	\$0.83	\$0.90	\$0.93	\$0.88
80%	\$0.90	\$0.94	\$0.99	\$1.09	\$1.00	\$1.01
Crop Input Costs (4) per Cwt.						
Top 20%	\$0.92	\$1.08	\$1.18	\$1.19	\$1.17	\$1.04
80%	\$1.17	\$1.38	\$1.45	\$1.41	\$1.40	\$1.21
Additional Fixed Costs (5) per Cwt.						
Top 20%	\$1.54	\$1.50	\$1.53	\$1.72	\$1.56	\$1.37
80%	\$1.81	\$1.76	\$1.81	\$2.05	\$1.94	\$1.66
Interest Costs per Cwt.						
Top 20%	\$0.30	\$0.27	\$0.28	\$0.25	\$0.26	\$0.30
80%	\$0.59	\$0.56	\$0.58	\$0.54	\$0.56	\$0.63
Total Farm Operating Expenses per Cwt.						
Top 20%	\$16.61	\$17.59	\$18.20	\$19.00	\$17.79	\$16.33
80%	\$18.72	\$19.45	\$20.21	\$21.04	\$19.72	\$17.81
<p>(2) Livestock Expenses = sum of replacement livestock, breeding, vet, milk marketing, bedding, milking supplies, cattle lease, custom boarding, bST, livestock professional fees, and other livestock expenses categories</p> <p>(3) Machinery & Fuel Expenses = sum of machine hire, rent, & lease, machine repairs & parts, and fuel, oil, & grease expense categories</p> <p>(4) Crop Input Costs = sum of fertilizer & lime, seeds & plants, spray & other crop expenses, and crop, professional fees expense categories</p> <p>(5) Fixed Costs = sum of land, building & fence repair, taxes, rent & lease, insurance, utilities other professional fees, and miscellaneous expenses categories</p>						



Six Year Per Cwt. Comparison
Same 28 Farms, Top 20% Sorted by Return on Assets w/o Appreciation
 New York State, Dairy Farm Business Summary & Analysis Program

Table 4

	Year					
	2011	2012	2013	2014	2015	2016
number of cows	1,000	1,053	1,097	1,178	1,248	1,350
milk sales in pounds	25,949,070	27,926,937	29,469,981	31,211,562	33,020,809	36,415,560
milk per cow	25,939	26,530	26,855	26,498	26,469	26,978
RECEIPTS						
milk sales-\$	\$21.74	\$19.91	\$21.89	\$25.46	\$18.45	\$17.27
dairy cattle sales	\$1.50	\$1.48	\$1.43	\$2.08	\$1.96	\$1.73
dairy calf sales	\$0.11	\$0.18	\$0.17	\$0.27	\$0.44	\$0.21
other livestock sales	\$0.02	\$0.01	\$0.02	\$0.04	\$0.00	\$0.06
crop sales	\$0.28	\$0.54	\$0.62	\$0.49	\$0.28	\$0.22
government receipts	\$0.08	\$0.19	\$0.21	\$0.02	\$0.12	\$0.10
custom machine work	\$0.02	\$0.06	\$0.06	\$0.06	\$0.05	\$0.06
gas tax refund	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
other	\$0.33	\$0.31	\$0.33	\$0.35	\$0.32	\$0.34
non-cash transfer(subtract)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Farm operating receipts	\$24.09	\$22.67	\$24.73	\$28.78	\$21.63	\$20.01
EXPENSES						
Hired labor	\$2.63	\$2.66	\$2.66	\$2.85	\$2.89	\$2.83
Feed						
dairy grain & concentrate	\$5.98	\$6.65	\$7.04	\$7.27	\$6.56	\$5.70
dairy roughage	\$0.36	\$0.56	\$0.48	\$0.42	\$0.35	\$0.47
nondairy feed	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
professional nutritional services	\$0.00	\$0.00	\$0.01	\$0.00	\$0.00	\$0.01
Machinery						
machine hire, rent & lease	\$0.33	\$0.34	\$0.34	\$0.43	\$0.41	\$0.39
machine repairs & parts	\$0.80	\$0.91	\$0.94	\$0.99	\$0.95	\$0.84
fuel, oil & grease	\$0.76	\$0.77	\$0.79	\$0.78	\$0.53	\$0.41



Table 4 Continued

Livestock	2011	2012	2013	2014	2015	2016
replacement livestock	\$0.10	\$0.01	\$0.03	\$0.01	\$0.00	\$0.01
breeding fees	\$0.21	\$0.19	\$0.20	\$0.21	\$0.21	\$0.20
veterinary & medicine	\$0.67	\$0.67	\$0.69	\$0.66	\$0.69	\$0.66
milk marketing	\$0.84	\$0.80	\$0.81	\$0.89	\$0.89	\$0.91
bedding	\$0.34	\$0.39	\$0.38	\$0.38	\$0.38	\$0.36
milking supplies	\$0.34	\$0.31	\$0.34	\$0.32	\$0.36	\$0.37
cattle leased	\$0.03	\$0.03	\$0.03	\$0.02	\$0.03	\$0.03
custom boarding	\$0.14	\$0.16	\$0.17	\$0.26	\$0.28	\$0.27
bST	\$0.21	\$0.18	\$0.17	\$0.17	\$0.14	\$0.08
livestock, professional fees	\$0.06	\$0.06	\$0.06	\$0.05	\$0.04	\$0.05
other livestock expense	\$0.06	\$0.08	\$0.09	\$0.11	\$0.09	\$0.06
Crops						
fertilizer & lime	\$0.35	\$0.49	\$0.52	\$0.45	\$0.52	\$0.40
seeds & plants	\$0.37	\$0.38	\$0.44	\$0.50	\$0.43	\$0.43
spray & other crop expense	\$0.19	\$0.20	\$0.19	\$0.22	\$0.21	\$0.16
crop, professional fees	\$0.01	\$0.01	\$0.02	\$0.02	\$0.02	\$0.05
Real estate						
land, build., fence repair	\$0.39	\$0.39	\$0.37	\$0.41	\$0.34	\$0.29
taxes	\$0.19	\$0.21	\$0.21	\$0.25	\$0.23	\$0.25
rent & lease	\$0.23	\$0.23	\$0.25	\$0.23	\$0.24	\$0.22
Other cash expense						
insurance	\$0.14	\$0.15	\$0.15	\$0.16	\$0.19	\$0.15
utilities	\$0.39	\$0.34	\$0.37	\$0.43	\$0.35	\$0.31
interest paid	\$0.30	\$0.27	\$0.28	\$0.25	\$0.26	\$0.30
other, professional fees	\$0.09	\$0.10	\$0.08	\$0.09	\$0.10	\$0.07
miscellaneous	\$0.12	\$0.09	\$0.10	\$0.15	\$0.10	\$0.08
Farm operating expenses	\$16.61	\$17.59	\$18.20	\$19.00	\$17.79	\$16.33
Expansion Cattle	\$0.09	\$0.06	\$0.02	\$0.26	\$0.06	\$0.26
Extraordinary Expense	\$0.00	\$0.00	\$0.00	\$0.02	\$0.00	\$0.00
Machinery Depreciation	\$0.80	\$0.78	\$0.83	\$0.90	\$0.93	\$0.88
Building Depreciation	\$0.52	\$0.55	\$0.62	\$0.61	\$0.69	\$0.73
Total Accrual Expenses	\$18.02	\$18.98	\$19.67	\$20.79	\$19.46	\$18.21
Net Farm Income w/o Appreciation	\$6.07	\$3.69	\$5.06	\$7.99	\$2.16	\$1.80



Selected Characteristics, Six Year Comparison
Same 28 Farms, Top 20%, Sorted by Return on Assets w/o Appreciation
 New York State, Dairy Farm Business Summary & Analysis Program

Table 5

	Year						Percent Change
	2011	2012	2013	2014	2015	2016	
Size of Business							
average number of cows	1,000	1,053	1,097	1,178	1,248	1,350	35.0%
average number of heifers	875	920	957	1,012	1,070	1,159	32.5%
percent heifers to cows	88%	87%	87%	86%	86%	86%	
milk sold, pounds	25,949,070	27,926,937	29,469,981	31,211,562	33,020,809	36,415,560	40.3%
worker equivalent	20.55	21.89	22.49	24.64	25.90	27.27	32.7%
total tillable acres	1,856	1,927	2,018	2,154	2,306	2,489	34.2%
Rates of Production							
milk sold per cow, pounds	25,939	26,530	26,855	26,498	26,469	26,978	4.0%
hay DM per acre, tons	3.40	3.10	3.70	3.50	3.30	3.30	-2.9%
corn silage per acre, tons	16.50	16.50	18.20	19.20	18.10	16.40	-0.6%
grain acres per cow	0.18	0.15	0.14	0.16	0.17	0.15	-16.8%
cull rate	34%	35%	34%	33%	33%	34%	0.0%
net calf & cow sales, per cow	\$ 371	\$ 423	\$ 415	\$ 552	\$ 619	\$ 454	
Labor Efficiency							
cows per worker	48.7	48.1	48.8	47.8	48.2	49.5	1.7%
milk sold per worker, pounds	1,262,728	1,275,785	1,310,359	1,266,703	1,274,935	1,335,371	5.8%
Cost Control and Milk Price							
grain & conc. purchased as % of milk sales	28%	33%	32%	29%	36%	33%	
dairy feed & crop expense per cwt. milk	\$ 7.27	\$ 8.29	\$ 8.70	\$ 8.88	\$ 8.08	\$ 7.20	
labor and machinery costs per cow	\$ 1,531	\$ 1,599	\$ 1,649	\$ 1,739	\$ 1,683	\$ 1,608	5.0%
labor cost per cwt.	\$ 2.63	\$ 2.66	\$ 2.66	\$ 2.85	\$ 2.89	\$ 2.83	
labor cost per hired worker equivalent	\$ 38,025	\$ 38,570	\$ 39,560	\$ 40,481	\$ 41,504	\$ 42,199	11.0%
operating cost of producing milk per cwt.	\$ 14.37	\$ 14.88	\$ 15.38	\$ 15.94	\$ 14.67	\$ 13.86	
purch. input cost of prod. milk per cwt.	\$ 15.69	\$ 16.21	\$ 16.83	\$ 17.48	\$ 16.28	\$ 15.47	
total cost of producing milk per cwt.	\$ 17.68	\$ 18.22	\$ 18.95	\$ 19.75	\$ 18.68	\$ 17.74	
net milk price per cwt.	\$ 20.90	\$ 19.10	\$ 21.08	\$ 24.57	\$ 17.55	\$ 16.36	



Table 5 Continued

Capital Efficiency(average for year)	2011	2012	2013	2014	2015	2016	
farm capital per cow	\$ 8,948	\$ 9,546	\$ 10,261	\$ 11,048	\$ 11,529	\$ 11,364	27.0%
machinery and equipment per cow	\$ 1,410	\$ 1,526	\$ 1,649	\$ 1,786	\$ 1,912	\$ 1,824	29.4%
asset turnover ratio	0.71	0.65	0.67	0.71	0.52	0.49	
net reinvestment per cow	\$ (1,094)	\$ (1,056)	\$ (956)	\$ (1,503)	\$ (1,112)	\$ (1,134)	
Profitability							
net farm income without appreciation	\$ 1,574,279	\$ 1,031,361	\$ 1,492,086	\$ 2,492,115	\$ 714,605	\$ 655,153	\$7,959,600
net farm income w/o apprec. per cow	\$ 1,574	\$ 979	\$ 1,360	\$ 2,116	\$ 573	\$ 485	
net farm income with appreciation	\$ 1,691,380	\$ 1,268,249	\$ 1,731,077	\$ 2,777,743	\$ 1,111,200	\$ 935,255	
net farm income with apprec. per cow	\$ 1,691	\$ 1,204	\$ 1,578	\$ 2,358	\$ 890	\$ 693	
labor & management income per oper.	\$ 518,892	\$ 272,607	\$ 440,557	\$ 837,480	\$ 56,821	\$ 21,900	\$2,148,257
net non-farm withdrawals per cwt.	\$ 0.92	\$ 1.53	\$ 2.11	\$ 1.47	\$ 1.69	\$ 1.11	
rate of return on equity capital with apprec.	22.1%	14.0%	17.8%	25.4%	7.8%	5.9%	
rate of return on all capital with apprec.	38.0%	11.6%	14.4%	20.4%	6.8%	5.3%	
rate of return on equity capital w/o apprec.	20.4%	10.9%	15.0%	22.6%	4.3%	3.6%	
rate of return on all capital w/o apprec.	35.0%	9.2%	12.3%	18.2%	4.0%	3.5%	
Financial Summary							
farm net worth, end of year	\$ 7,500,017	\$ 8,103,759	\$ 9,134,293	\$ 11,200,151	\$ 11,496,429	\$ 12,126,588	97.4%
debt to asset ratio	0.22	0.23	0.23	0.21	0.21	0.23	
farm debt per cow	\$ 2,054	\$ 2,298	\$ 2,442	\$ 2,463	\$ 2,437	\$ 2,696	31.3%
debt coverage ratio	4.41	2.89	3.42	4.96	1.75	1.90	
working capital, as % of expenses	31%	29%	32%	41%	31%	28%	
retained earnings	\$ 1,330,351	\$ 603,491	\$ 869,057	\$ 2,033,106	\$ 156,450	\$ 249,959	\$5,242,414
valuation equity	\$ (61,795)	\$ 13,295	\$ 6,127	\$ 39,309	\$ 108,540	\$ 33,824	\$139,300



Six Year Per Cwt. Comparison
Same 110 Farms, Bottom 80% Sorted by ROA w/o Appreciation
 New York State, Dairy Farm Business Summary & Analysis Program

Table 6

	Year					
	2011	2012	2013	2014	2015	2016
number of cows	574	591	616	643	669	695
milk sales in pounds	14,018,969	14,817,252	15,611,252	16,284,593	17,005,508	18,169,035
milk per cow	24,433	25,071	25,344	25,307	25,423	26,156
RECEIPTS						
milk sales-\$	\$21.65	\$19.73	\$21.58	\$25.50	\$18.25	\$17.00
dairy cattle sales	\$1.32	\$1.60	\$1.57	\$1.83	\$1.86	\$1.45
dairy calf sales	\$0.14	\$0.18	\$0.17	\$0.31	\$0.45	\$0.20
other livestock sales	\$0.63	\$0.82	\$0.62	\$0.65	\$0.10	\$0.04
crop sales	\$0.63	\$0.82	\$0.62	\$0.65	\$0.41	\$0.35
government receipts	\$0.13	\$0.31	\$0.24	\$0.04	\$0.21	\$0.24
custom machine work	\$0.08	\$0.08	\$0.07	\$0.05	\$0.04	\$0.03
gas tax refund	\$0.00	\$0.00	\$0.01	\$0.00	\$0.00	\$0.00
other	\$0.46	\$0.39	\$0.41	\$0.35	\$0.35	\$0.38
non-cash transfer(subtract)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Farm operating receipts	\$24.48	\$23.21	\$24.72	\$28.81	\$21.67	\$19.70
EXPENSES						
Hired labor	\$2.82	\$2.86	\$2.90	\$3.03	\$3.10	\$2.95
Feed						
dairy grain & concentrate	\$6.16	\$6.76	\$7.09	\$7.46	\$6.66	\$5.85
dairy roughage	\$0.32	\$0.34	\$0.44	\$0.36	\$0.32	\$0.32
nondairy feed	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
professional nutritional services	\$0.01	\$0.00	\$0.00	\$0.00	\$0.01	\$0.01
Machinery						
machine hire, rent & lease	\$0.44	\$0.45	\$0.49	\$0.53	\$0.56	\$0.50
machine repairs & parts	\$1.02	\$1.00	\$1.06	\$1.16	\$1.03	\$0.95
fuel, oil & grease	\$0.91	\$0.88	\$0.89	\$0.90	\$0.60	\$0.44



Table 6 Continued

Livestock	2011	2012	2013	2014	2015	2016
replacement livestock	\$0.09	\$0.06	\$0.08	\$0.07	\$0.05	\$0.04
breeding fees	\$0.24	\$0.23	\$0.22	\$0.25	\$0.23	\$0.23
veterinary & medicine	\$0.68	\$0.66	\$0.69	\$0.72	\$0.69	\$0.65
milk marketing	\$0.84	\$0.88	\$0.87	\$0.91	\$0.97	\$0.98
bedding	\$0.41	\$0.42	\$0.42	\$0.39	\$0.39	\$0.37
milking supplies	\$0.39	\$0.37	\$0.39	\$0.38	\$0.39	\$0.34
cattle leased	\$0.01	\$0.01	\$0.01	\$0.02	\$0.01	\$0.00
custom boarding	\$0.45	\$0.48	\$0.47	\$0.48	\$0.47	\$0.42
bST	\$0.21	\$0.19	\$0.17	\$0.20	\$0.18	\$0.12
livestock, professional fees	\$0.06	\$0.07	\$0.08	\$0.07	\$0.07	\$0.06
other livestock expense	\$0.10	\$0.08	\$0.08	\$0.11	\$0.09	\$0.08
Crops						
fertilizer & lime	\$0.47	\$0.59	\$0.62	\$0.56	\$0.58	\$0.44
seeds & plants	\$0.43	\$0.48	\$0.54	\$0.54	\$0.53	\$0.48
spray & other crop expense	\$0.23	\$0.28	\$0.25	\$0.29	\$0.26	\$0.27
crop, professional fees	\$0.03	\$0.03	\$0.04	\$0.03	\$0.03	\$0.03
Real estate						
land, build., fence repair	\$0.34	\$0.34	\$0.33	\$0.46	\$0.38	\$0.28
taxes	\$0.24	\$0.24	\$0.26	\$0.26	\$0.27	\$0.26
rent & lease	\$0.33	\$0.30	\$0.33	\$0.32	\$0.32	\$0.32
Other cash expense						
insurance	\$0.19	\$0.19	\$0.19	\$0.22	\$0.26	\$0.20
utilities	\$0.45	\$0.41	\$0.42	\$0.49	\$0.42	\$0.36
interest paid	\$0.59	\$0.56	\$0.58	\$0.54	\$0.56	\$0.63
other, professional fees	\$0.12	\$0.15	\$0.14	\$0.14	\$0.14	\$0.12
miscellaneous	\$0.13	\$0.14	\$0.13	\$0.14	\$0.14	\$0.11
Farm operating expenses	\$18.72	\$19.45	\$20.21	\$21.04	\$19.72	\$17.81
Expansion Cattle	\$0.05	\$0.22	\$0.13	\$0.09	\$0.10	\$0.09
Extraordinary Expense	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Machinery Depreciation	\$0.90	\$0.94	\$0.99	\$1.09	\$1.00	\$1.01
Building Depreciation	\$0.57	\$0.59	\$0.61	\$0.65	\$0.71	\$0.73
Total Accrual Expenses	\$20.24	\$21.20	\$21.94	\$22.87	\$21.54	\$19.65
Net Farm Income w/o Appreciation	\$4.23	\$2.00	\$2.78	\$5.94	\$0.14	\$0.05



Selected Characteristics, Six Year Comparison
Same 110 Farms, Bottom 80% Sorted by ROA w/o Appreciation
 New York State, Dairy Farm Business Summary & Analysis Program

Table 7

	Year						Percent Change
	2011	2012	2013	2014	2015	2016	
Size of Business							
average number of cows	574	591	616	643	669	695	21.1%
average number of heifers	490	503	526	545	570	598	22.0%
percent heifers to cows	85%	85%	85%	85%	85%	86%	
milk sold, pounds	14,018,969	14,817,252	15,611,252	16,284,593	17,005,508	18,169,035	29.6%
worker equivalent	13.14	13.98	14.42	15.22	15.64	15.74	19.8%
total tillable acres	1,219	1,277	1,301	1,323	1,385	1,423	16.8%
Rates of Production							
milk sold per cow, pounds	24,433	25,071	25,344	25,307	25,423	26,156	7.0%
hay DM per acre, tons	3.60	3.00	3.50	3.40	3.40	3.20	-11.1%
corn silage per acre, tons	16.60	16.70	17.80	19.10	17.70	17.60	6.0%
grain acres per cow	0.27	0.21	0.20	0.19	0.19	0.16	-40.1%
cull rate, %	36%	35%	36%	34%	35%	33%	-8.3%
net calf & cow sales, per cow	\$ 319	\$ 377	\$ 388	\$ 502	\$ 549	\$ 397	
Labor Efficiency							
cows per worker	43.7	42.3	42.7	42.2	42.8	44.2	1.1%
milk sold per worker, pounds	1,066,893	1,059,889	1,082,611	1,069,947	1,087,309	1,154,322	8.2%
Cost Control and Milk Price							
grain & conc. purchased as % of milk sales	28.00	34.00	33.00	29.00	36.00	34.00	
dairy feed & crop expense per cwt. milk	\$ 7.65	\$ 8.49	\$ 8.98	\$ 9.23	\$ 8.38	\$ 7.38	
labor and machinery costs per cow	\$ 1,696	\$ 1,753	\$ 1,822	\$ 1,917	\$ 1,831	\$ 1,760	3.8%
labor cost per cwt.	\$ 2.82	\$ 2.86	\$ 2.90	\$ 3.03	\$ 3.10	\$ 2.95	
labor cost per hired worker equivalent	\$ 36,563	\$ 36,619	\$ 37,962	\$ 38,581	\$ 40,098	\$ 40,582	11.0%
operating cost of producing milk per cwt.	\$ 15.94	\$ 16.19	\$ 17.19	\$ 17.83	\$ 16.40	\$ 15.21	
purch. input cost of prod. milk per cwt.	\$ 17.41	\$ 17.73	\$ 18.80	\$ 19.57	\$ 18.11	\$ 16.95	
total cost of producing milk per cwt.	\$ 19.51	\$ 19.92	\$ 21.05	\$ 21.96	\$ 20.59	\$ 19.31	
net milk price per cwt.	\$ 20.81	\$ 18.85	\$ 20.71	\$ 24.59	\$ 17.28	\$ 16.02	



Table 7 Continued

Capital Efficiency(average for year)	2011	2012	2013	2014	2015	2016	
farm capital per cow	\$ 9,855	\$ 10,616	\$ 11,045	\$ 11,724	\$ 12,433	\$ 12,467	26.5%
machinery and equipment per cow	\$ 1,672	\$ 1,799	\$ 1,893	\$ 2,033	\$ 2,135	\$ 2,111	26.3%
asset turnover ratio	0.64	0.57	0.59	0.66	0.47	0.43	
net reinvestment per cow	\$ (883)	\$ (973)	\$ (919)	\$ (1,171)	\$ (1,248)	\$ (704)	
Profitability							
net farm income without appreciation	\$ 593,672	\$ 297,068	\$ 433,344	\$ 966,355	\$ 23,362	\$ 9,128	
net farm income w/o apprec. per cow	\$ 1,034	\$ 503	\$ 703	\$ 1,503	\$ 35	\$ 13	
net farm income with appreciation	\$ 753,744	\$ 460,924	\$ 588,999	\$ 1,226,334	\$ 258,361	\$ 158,850	
net farm income with apprec. per cow	\$ 1,313	\$ 780	\$ 956	\$ 1,907	\$ 386	\$ 229	
labor & management income per oper.	\$ 208,577	\$ 44,096	\$ 102,234	\$ 339,379	\$ (118,635)	\$ (123,339)	
net non-farm withdrawals per cwt.	\$ 0.92	\$ 1.25	\$ 1.35	\$ 1.14	\$ 1.20	\$ 1.03	
rate of return on equity capital with apprec.	17.9%	8.3%	10.4%	21.7%	2.0%	0.1%	
rate of return on all capital with apprec.	12.7%	6.7%	8.0%	15.6%	2.5%	1.4%	
rate of return on equity capital w/0 apprec.	13.4%	4.3%	6.9%	16.5%	-2.2%	-2.6%	
rate of return on all capital w/0 apprec.	9.9%	4.1%	5.7%	12.1%	-0.3%	-0.3%	
Financial Summary							
farm net worth, end of year	\$ 3,869,448	\$ 4,176,384	\$ 4,543,872	\$ 5,460,860	\$ 5,493,958	\$ 5,438,291	72.9%
debt to asset ratio	0.35	0.36	0.35	0.32	0.36	0.38	
farm debt per cow	\$ 3,591	\$ 3,930	\$ 4,010	\$ 3,977	\$ 4,617	\$ 4,707	31.1%
debt coverage ratio	2.33	1.30	1.57	3.08	0.52	0.63	
working capital, as % of expenses	20%	18%	18%	25%	18%	15%	
retained earnings	\$ 466,801	\$ 113,055	\$ 223,650	\$ 779,526	\$ (181,951)	\$ (177,258)	\$1,223,824
valuation equity	\$ 93,447	\$ 72,833	\$ 58,060	\$ 108,779	\$ 66,714	\$ 50,298	\$450,131

Financial Efficiency	DFBS page							6 Year	Your Farm
		2011	2012	2013	2014	2015	2016	Average	
Asset Turnover Ratio ⁸	14	0.71	0.65	0.67	0.71	0.52	0.49	0.65	<input type="text"/>
Your Farm		<input type="text"/>							
Operating Expense Ratio	14	0.68	0.77	0.73	0.66	0.81	0.81	0.73	<input type="text"/>
Your Farm		<input type="text"/>							
Depreciation Expense Ratio	14	0.05	0.06	0.06	0.05	0.07	0.08	0.06	<input type="text"/>
Your Farm		<input type="text"/>							
Interest Expense Ratio	14	0.01	0.01	0.01	0.01	0.01	0.02	0.01	<input type="text"/>
Your Farm		<input type="text"/>							
Net Farm Income from Operations Ratio	4	0.25	0.16	0.20	0.28	0.10	0.09	0.20	<input type="text"/>
Your Farm		<input type="text"/>							

1 Calculated utilizing gross income instead of value of farm production. (Current Assets - Current Liabilities)/Gross Receipts*100

2 (Net Farm Income + Interest Paid - Unpaid Family Labor - Owner Value)/Gross Revenue

3 (Net Farm Income + Depreciation + Interest)/Average Cows

4 (Net Farm Income + Depreciation + Net Non-Farm Income - Non-Farm Cash Expenses + Interest Paid on Term Loans)/Average Cows

5 (Capital Debt Repayment Capacity - Scheduled Principle and Interest on Term Loans)/Average Cows

6 (Capital Debt Repayment Capacity - Unfunded(cash) Capital Replacement Allowance. Annual machinery depreciation expense utilized to represent un-funded capital replacement requirement.

7 (Capital Debt Repayment Capacity/(Scheduled Principle & Interest on Term Loans + Unfunded(cash) Capital Replacement Allowance))

8 Utilizing Gross Farm Income to calculate instead of value of farm production

Source: Farm Financial Ratios and Guidelines, Farm Financial Standards Council, 2014

Financial Efficiency	DFBS page							6 Year	Your Farm
		2011	2012	2013	2014	2015	2016	Average	
Asset Turnover Ratio ⁸	14	0.66	0.6	0.61	0.67	0.49	0.45	0.58	<input type="text"/>
Your Farm		<input type="text"/>							
Operating Expense Ratio	14	0.72	0.81	0.78	0.7	0.86	0.86	0.79	<input type="text"/>
Your Farm		<input type="text"/>							
Depreciation Expense Ratio	14	0.06	0.06	0.06	0.06	0.08	0.09	0.07	<input type="text"/>
Your Farm		<input type="text"/>							
Interest Expense Ratio	14	0.02	0.02	0.02	0.02	0.02	0.03	0.02	<input type="text"/>
Your Farm		<input type="text"/>							
Net Farm Income from Operations Ratio	4	0.20	0.11	0.14	0.23	0.04	0.03	0.13	<input type="text"/>
Your Farm		<input type="text"/>							

- 1 Calculated utilizing gross income instead of value of farm production. $(\text{Current Assets} - \text{Current Liabilities}) / \text{Gross Receipts} * 100$
- 2 $(\text{Net Farm Income} + \text{Interest Paid} - \text{Unpaid Family Labor} - \text{Owner Value}) / \text{Gross Revenue}$
- 3 $(\text{Net Farm Income} + \text{Depreciation} + \text{Interest}) / \text{Average Cows}$
- 4 $(\text{Net Farm Income} + \text{Depreciation} + \text{Net Non-Farm Income} - \text{Non-Farm Cash Expenses} + \text{Interest Paid on Term Loans}) / \text{Average Cows}$
- 5 $(\text{Capital Debt Repayment Capacity} - \text{Scheduled Principle and Interest on Term Loans}) / \text{Average Cows}$
- 6 $(\text{Capital Debt Repayment Capacity} - \text{Unfunded(cash) Capital Replacement Allowance}) / \text{Annual machinery depreciation expense utilized to represent unfunded capital replacement requirement}$.
- 7 $(\text{Capital Debt Repayment Capacity}) / (\text{Scheduled Principle \& Interest on Term Loans} + \text{Unfunded(cash) Capital Replacement Allowance})$
- 8 Utilizing Gross Farm Income to calculate instead of value of farm production

Source: Farm Financial Ratios and Guidelines, Farm Financial Standards Council, 2014

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2018-01	Six Year Trend Analysis New York State Dairy Farms: Selected Financial and Production Factors		Karszes, J. and K. Windecker
2017-16	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Syracuse Store 2, New York		Park, K.S., Gomez, M. and K. Clancy
2017-15	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Syracuse Store 1, New York		Park, K.S., Gomez, M. and K. Clancy
2017-14	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Pittsburgh Store, Pennsylvania		Park, K.S., Gomez, M. and K. Clancy
2017-13	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Onondaga County Store, New York		Park, K.S., Gomez, M. and K. Clancy
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2017-11	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Madison County Store, New York		Park, K.S., Gomez, M. and K. Clancy
2017-10	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Kent Store 2, Delaware		Park, K.S., Gomez, M. and K. Clancy
2017-09	Case studies of supermarkets and food supply chains in low-income areas of the Northeast: Kent Store 1, Delaware		Park, K.S., Gomez, M. and K. Clancy
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