



MINNESOTA STATE

Farm Business Management Program Database 24th Annual

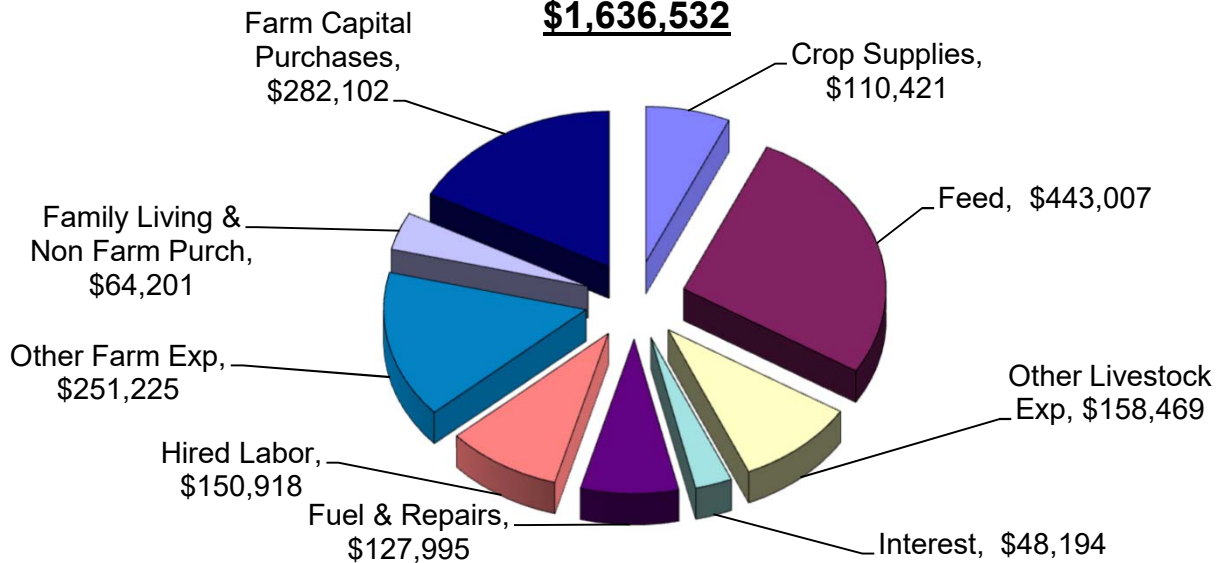
Dairy Farm Sort - 2020

*Financial Sort By Gross Revenue & Enterprise Sort Data by Herd Size
Selected Production Practice Sorts, 5-yr & Long Term Trends of Selected Data*

April, 2021

Average Dollars Spent by a Minnesota Dairy Farm totals

\$1,636,532



In Cooperation with the Center for Farm Financial Management, University of Minnesota
Compiled by Nathan Converse

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Farm Business Management Website: agcentric.org or centerofagriculture.org

A Brief Overview of 2020

This special report for dairy provides summary information for dairy producers in the Minnesota State Farm Business Management (FBM) Database.

Based on the graphic on the cover, over a 40 year farming career, each dairy farmer would spend \$65,461,280. Based on that same graphic, the farms in this report spent \$505,688,388 in their greater communities in 2020. The majority of the money is spent locally, including businesses and cooperatives. This demonstrates the vital importance of farming on the economy of Minnesota.

General Summary:

The impacts of the COVID-19 pandemic were felt early in the dairy sector as prices fell steadily during the beginning of the year. After bottoming out at \$12.14/CWT in May, Class 3 prices rebounded and finished the year with more strength. While Class 3 prices were the highest since 2014, the Class I, II, and IV markets lagged behind, which caused a negative Producer Price Differential (PPD). This resulted in a lower basis that took a bite out of producer's milk checks. However, the increased milk price along with support from Government payments led to an increase in dairy farm profits in 2020. The median dairy farm earned \$178,994 up from \$65,100 in 2019.

- The average price received for milk increased by 6% from \$18.64 in 2019 to \$19.77 in 2020
- Total direct & overhead expenses were \$16.74 per hundred pounds of milk, up from \$15.72 in 2019
- Dairy producers showed a profit of \$3.09 per hundred pounds of milk, or about \$772 per cow.
- The average dairy farm milked 243 cows, which is up from an average of 235 cows in 2019.
- The average milk production was 24,983 pounds, up from 24,390 pounds in 2019.

Overall, the improvement in profitability allowed dairies to demonstrate positive Term Debt Coverage and build back some equity lost in previous years.

Term Debt Coverage Trends					
Year	2016	2017	2018	2019	2020
Term Debt Coverage	0.89	1.20	0.61	1.52	3.01

This special report consists of data from all herds included in the State FBM Database. It is designed to provide an overview of both the whole farm financial picture for dairy operations, and provide insight into the dairy enterprise based on herd size. Pages 1 and 2 provide financial information based on the size of the business using Gross Farm Income. Pages 3 and 4 provide enterprise information for the various herd sizes.

In cooperation with the Minnesota Department of Agriculture, we have estimated that the data in this report represents the following percentage of dairy herds in the state of Minnesota:

Herd Size	All	< 50 Cows	51-100	101-200	201-500	>500
		13.0%	4+%	8+%	25+%	27+%

General Financial Summary

Farm Business Management Program Database

(Dairy Farms Sorted by Gross Farm Income, includes Organic and Organic Transition)

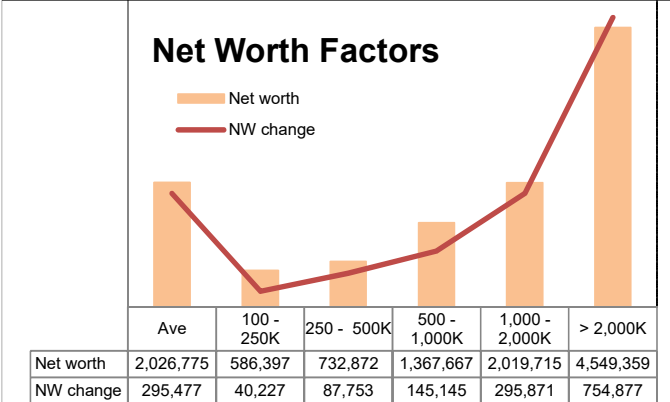
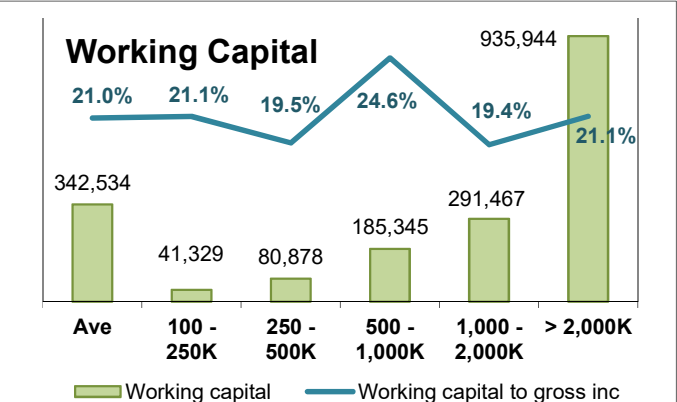
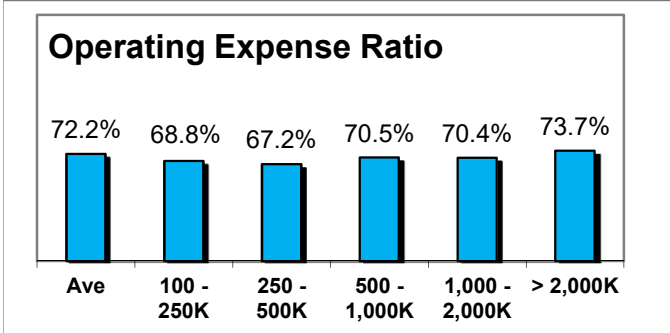
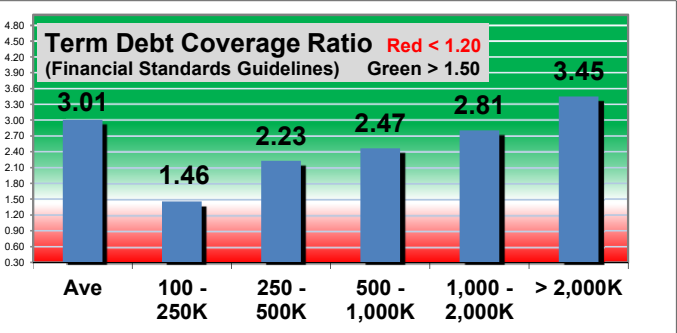
	Avg. Of All Farms	100,001 - 250,000	250,001 - 500,000	500,001 - 1,000,000	1,000,001 - 2,000,000	Over 2,000,000
Number of farms	309	23	56	78	76	68
<u>Income Statement</u>						
Gross cash farm income	1,558,042	189,211	385,964	719,967	1,430,627	4,265,872
Total cash farm expense	1,290,230	148,370	312,238	584,510	1,168,002	3,573,295
Net cash farm income	267,812	40,841	73,726	135,456	262,625	692,578
Average net farm income	321,555	35,899	93,550	148,183	302,641	862,450
Median net farm income	178,994	46,314	82,106	141,953	266,176	685,664
<u>Solvency (end of year at market)</u>						
Total assets	3,443,641	978,226	1,343,837	2,280,508	3,502,915	7,634,405
Total liabilities	1,416,866	391,829	610,965	912,841	1,483,200	3,085,046
Net worth	2,026,775	586,397	732,872	1,367,667	2,019,715	4,549,359
Total net worth change	295,477	40,227	87,753	145,145	295,871	754,877

Financial Standards Measures

Farm Business Management Program Database

(Dairy Farms Sorted by Gross Farm Income, includes Organic and Organic Transition)

	Avg. Of All Farms	100,000 - 250,000	250,001 - 500,000	500,001 - 1,000,000	1,000,001 - 2,000,000	Over 2,000,000
Number of farms	309	23	56	78	76	68
Liquidity						
Current ratio	2.74	1.92	2.18	2.94	2.48	2.90
Working capital	342,534	41,329	80,878	185,345	291,467	935,944
Working capital to gross inc	21.0%	21.1%	19.5%	24.6%	19.4%	21.1%
Solvency (market)						
Farm debt to asset ratio	42%	42%	48%	43%	43%	41%
Farm equity to asset ratio	58%	58%	52%	57%	57%	59%
Change in total net worth %	17%	7%	14%	12%	17%	20%
Profitability (cost)						
Rate of return on farm assets	11.5%	3.6%	9.3%	8.2%	10.3%	13.6%
Rate of return on farm equity	16.7%	3.8%	16.5%	11.6%	14.9%	19.4%
Operating profit margin	25.3%	13.9%	25.6%	22.4%	25.9%	25.9%
Net farm income (avg)	321,555	35,899	93,550	148,183	302,641	862,450
EBIDTA	452,062	61,124	135,996	222,216	444,728	1,167,165
Repayment Capacity						
Capital debt repayment capacity	404,204	53,530	114,901	190,211	398,711	1,055,544
Capital debt repayment margin	270,086	16,763	63,366	113,319	256,799	749,159
Term debt coverage ratio	3.01	1.46	2.23	2.47	2.81	3.45
Replacement coverage ratio	2.53	1.29	1.99	2.02	2.32	2.91
Term debt to EBITDA	1.91	3.87	2.73	2.50	2.25	1.52
Efficiency						
Asset turnover rate (cost)	45.2%	26.3%	36.1%	36.3%	39.8%	52.3%
Operating expense ratio	72.2%	68.8%	67.2%	70.5%	70.4%	73.7%
Depreciation expense ratio	4.9%	6.9%	5.7%	5.8%	5.8%	4.2%
Interest expense ratio	3.1%	5.3%	4.6%	3.9%	3.7%	2.5%
Net farm income ratio	19.8%	19.1%	22.5%	19.9%	20.1%	19.5%

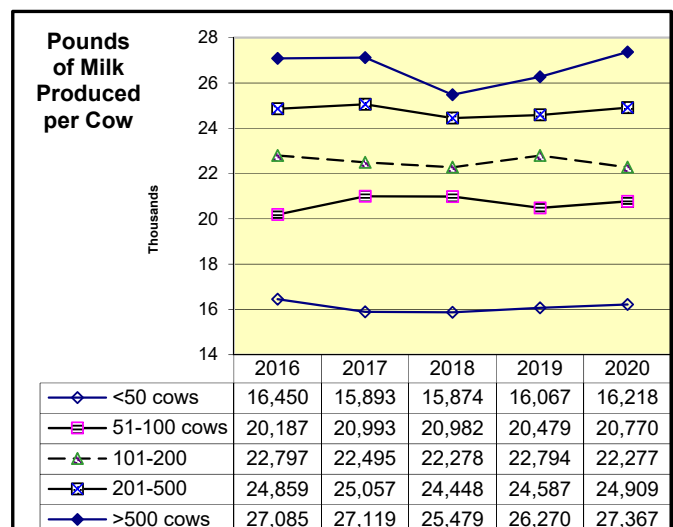
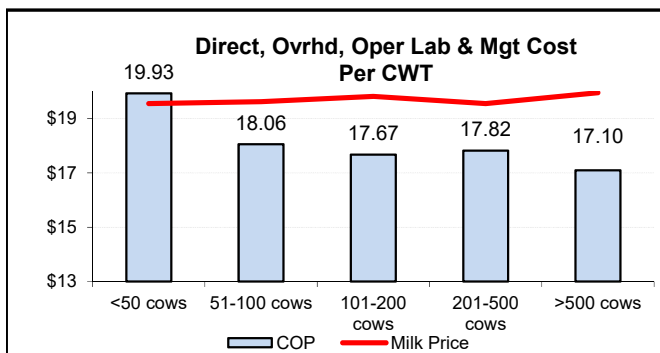
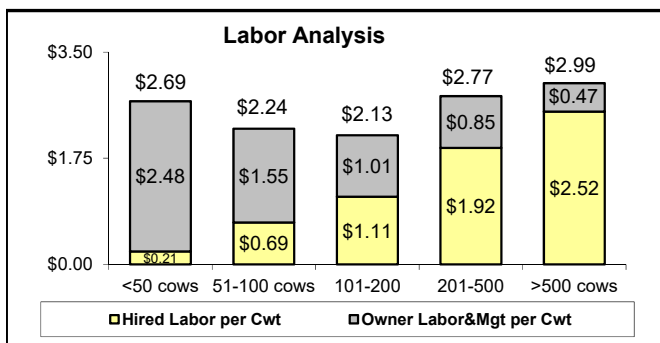
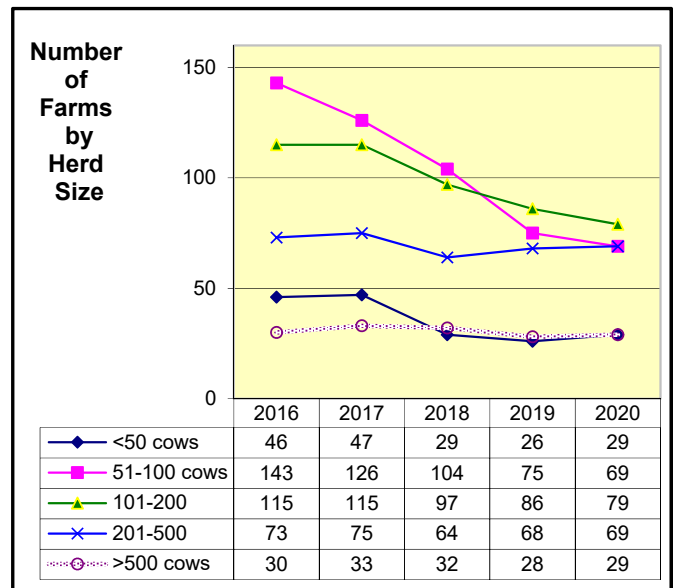
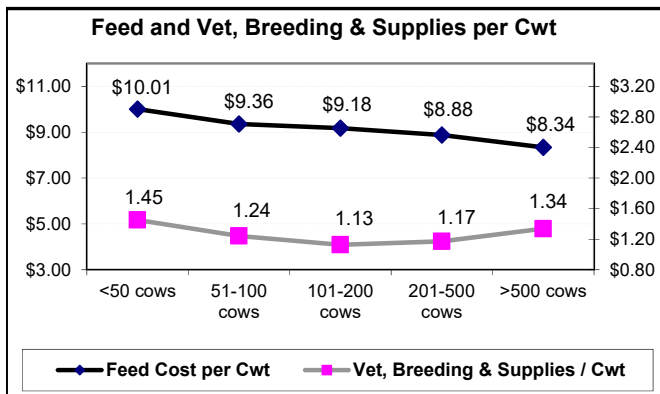


State Database Dairy Cow Enterprise <i>(Excludes Organic and Organic Transition)</i>	Sorted by Average Number of Dairy Cows					
	Average	Up to 50 Cows	51 to 100 Cows	101 to 200 Cows	201 To 500 Cows	Over 500 Cows
	***** Per Cow *****					
Number Of Farms	275	29	69	79	69	29
Milk sold (hd)	4,912.24	3,138.96	4,040.08	4,389.53	4,836.77	5,436.14
Dairy Calves sold (hd)	39.90	29.37	27.72	32.38	37.41	47.90
Transferred out (hd)	48.51	66.53	53.01	59.21	43.09	46.70
Cull sales (hd)	200.20	145.54	189.09	214.07	209.98	190.89
Other income (includes gov. payments)	622.59	498.84	602.31	608.79	760.62	527.35
Purchased (hd)	-70.29	-41.14	-26.33	-63.29	-20.59	-122.74
Transferred in (hd)	-38.27	-40.36	-95.92	-39.69	-34.10	-29.40
Inventory change (hd)	83.58	43.58	17.29	45.88	26.39	159.84
Dairy repl net cost	-674.35	-436.21	-561.71	-734.86	-670.54	-683.58
Gross margin	5,147.05	3,428.76	4,277.75	4,539.01	5,216.09	5,589.16
Direct Expenses						
Protein Vit Minerals (lb.)	727.80	450.87	650.28	697.89	719.49	773.32
Complete Ration (lb.)	465.12	178.81	266.36	340.13	534.11	513.75
Corn (bu.)	233.41	202.59	224.97	233.91	215.51	251.14
Corn Silage (lb.)	348.96	284.68	289.94	308.51	361.05	370.68
Hay, Alfalfa (lb.)	195.18	259.73	259.17	254.36	208.65	144.18
Haylage, Alfalfa (lb.)	86.13	104.38	103.30	107.97	85.92	72.94
Other feed stuffs (lb)	123.62	142.81	149.06	102.73	87.12	155.66
Breeding fees	49.97	39.22	44.89	42.33	46.68	57.25
Veterinary	113.40	66.36	83.70	87.21	107.83	136.65
Supplies	147.98	129.79	129.25	121.55	137.34	172.07
Fuel & oil	69.01	52.36	55.87	60.65	67.65	76.90
Repairs	203.53	132.47	175.87	188.68	208.31	214.27
Custom hire	88.06	16.52	39.94	65.36	69.13	125.12
Hired labor	368.37	22.87	83.05	115.51	344.94	564.19
Hauling, & Trucking	84.46	84.31	78.15	75.44	71.73	99.67
Marketing	54.54	37.96	42.44	42.39	66.96	52.84
Bedding	82.33	46.90	79.55	88.47	98.69	68.64
Total direct expenses	3,532.59	2,382.97	2,876.49	3,027.05	3,527.17	3,926.07
Return over direct expense	1,614.45	1,045.79	1,401.27	1,511.96	1,688.92	1,663.09
Overhead Expenses						
Hired labor	122.07	11.49	60.42	132.84	133.52	125.02
Building & Machinery leases	64.45	34.65	26.98	24.25	89.09	70.45
Utilities	59.30	48.66	76.33	74.77	56.36	52.13
Interest	100.42	93.42	86.97	126.43	111.20	83.79
Mach & bldg depreciation	192.39	165.04	186.47	203.98	203.65	180.77
Miscellaneous	31.78	18.93	32.29	34.60	24.53	36.76
Total overhead expenses	650.17	446.70	552.73	683.84	699.12	624.32
Total dir & ovhd expenses	4182.76	2829.67	3429.21	3710.89	4226.29	4550.39
Net return	964.29	599.09	848.54	828.12	989.80	1038.77
Labor & management charge	192.41	401.88	320.99	225.95	212.54	128.40
Net return over lbr & mgt	771.87	197.22	527.55	602.17	777.26	910.37
Cost of Production per CWT						
Total direct expense per cwt.	14.14	14.69	13.85	13.59	14.16	14.35
Total dir & ovhd expense per cwt.	16.74	17.45	16.51	16.66	16.97	16.63
With other revenue adjustments	15.88	15.80	15.47	16.08	15.54	16.12
With labor and management	16.65	18.27	17.02	17.10	16.39	16.59
Est. labor hours per unit	38.56	44.25	33.90	31.74	38.18	42.46
Other Information						
Avg. number of Cows	243.4	36.6	78.8	145.6	314.4	939.1
Milk produced per Cow	24,983	16,218	20,770	22,277	24,909	27,367
Lbs of protein & fat per Cow	1,745	1,210	1,489	1,553	1,742	1,902
Turnover rate	35.6	29.5	33.6	37.4	36.8	34.6
Cows milking per unit	21	9	11	15	23	32
Feed cost per day	5.97	4.45	5.32	5.60	6.06	6.25
Feed cost per cwt of milk	8.73	10.01	9.36	9.18	8.88	8.34
Feed cost per Cow	2,180.21	1,623.86	1,943.05	2,045.52	2,210.85	2,281.67
Avg. milk price per cwt.	19.77	19.55	19.62	19.81	19.55	19.95
Milk price / feed margin	11.05	9.53	10.26	10.63	10.67	11.62

Selected Dairy Enterprise Factors from the Farm Business Management Program Database

(excludes Organic and Organic Transition)

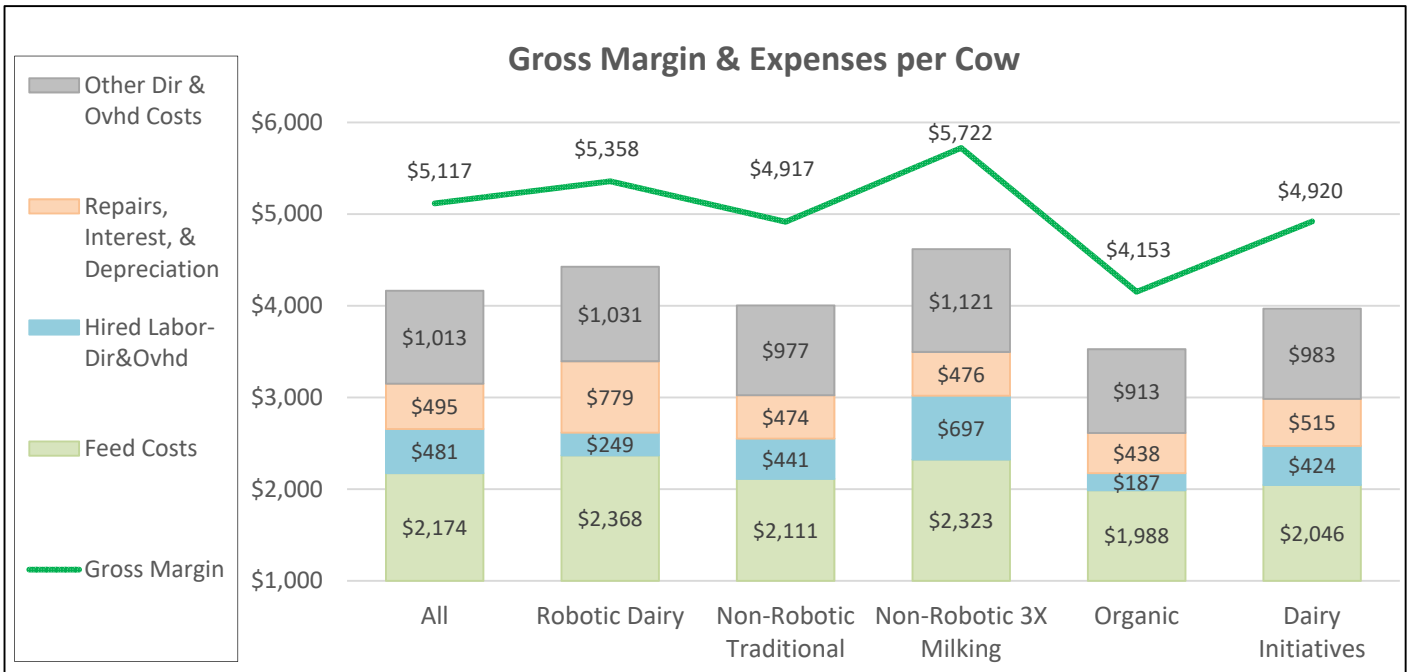
Herd Size	State Ave.	up to 50 cows	51-100 cows	101-200 cows	201-500 cows	over 500 cows
Number of Farms	275	29	69	79	69	29
Ave # of Cows	243.4	36.6	78.8	145.6	314.4	939.1
Milk Prod. Per Cow	24,983	16,218	20,770	22,277	24,909	27,367
Feed Cost per Cwt	\$8.73	\$10.01	\$9.36	\$9.18	\$8.88	\$8.34
Interest per Cwt	\$0.40	\$0.58	\$0.42	\$0.57	\$0.45	\$0.31
Vet, Breeding & Supplies / Cwt	\$1.25	\$1.45	\$1.24	\$1.13	\$1.17	\$1.34
Hired Labor per Cwt	\$1.96	\$0.21	\$0.69	\$1.11	\$1.92	\$2.52
Deprec/Lease per Cwt	\$1.03	\$1.23	\$1.03	\$1.02	\$1.18	\$0.92
Milk Price per Cwt	\$19.77	\$19.55	\$19.62	\$19.81	\$19.55	\$19.95
Dir & Ovhd Cost per Cwt	\$16.74	\$17.45	\$16.51	\$16.66	\$16.97	\$16.63
Return over Dir & Ovhd per Cow	\$964	\$599	\$849	\$828	\$990	\$1,039
Herd Profit over Dir&Ovhd	\$234,708	\$21,927	\$66,865	\$120,574	\$311,193	\$975,509
Owner Labor&Mgt per Cwt	\$0.77	\$2.48	\$1.55	\$1.01	\$0.85	\$0.47
Net per Cow after Labor&Mgt	\$772	\$197	\$528	\$602	\$777	\$910
Herd Profit over Labor&Mgt	\$187,876	\$7,218	\$41,571	\$87,676	\$244,371	\$854,928



Additional Selected Sorts within the Dairy Enterprise

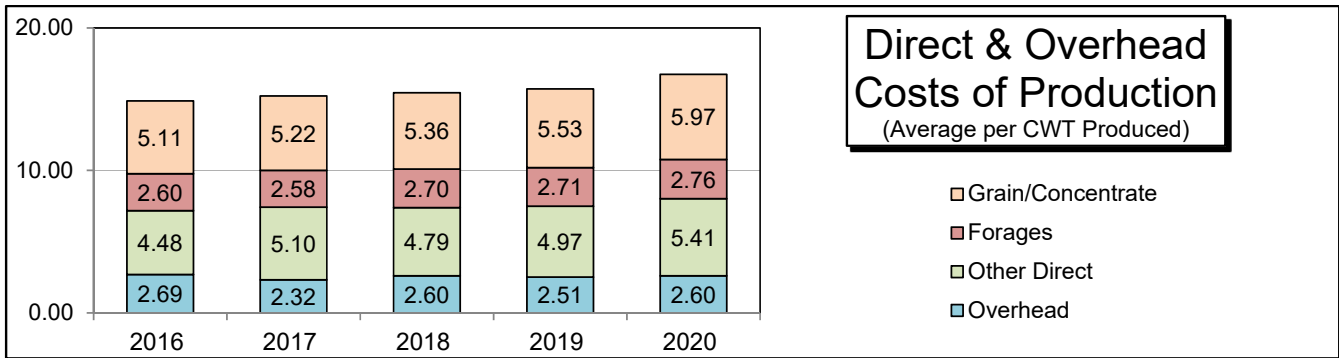
The State Database provides the opportunity to dig deeper into the data using special markers on farms with different practices. Using the FINPACK & RankEM Central software from the Center for Farm Financial Management, specific production practices can be included or excluded from a given sort. This enables selected practices to be compared. Below is a sample of the sort options which provide another comparative look at Minnesota's State Dairy Data.

Sort - Includes	All	Robotic Dairy	Non-Robotic Traditional	Non-Robotic 3X Milking	Organic	Dairy Initiatives
Number of Farms	297	25	222	25	22	83
Number of Cows	232	194	203	675	95	187
Milk Produced per Cow	24,656	26,238	23,932	27,544	14,194	23,402
Milk Sold	\$4,887.93	\$4,985.07	\$4,711.48	\$5,447.59	\$4,110.93	\$4,689.75
Gross Margin	\$5,116.88	\$5,357.58	\$4,916.69	\$5,722.09	\$4,152.72	\$4,919.62
Feed Cost per Cow	\$2,174.38	\$2,367.57	\$2,110.88	\$2,322.88	\$1,988.05	\$2,045.95
Breeding Fees	\$49.14	\$39.71	\$49.27	\$55.15	\$22.50	\$48.48
Veterinary	\$111.15	\$101.78	\$110.77	\$124.75	\$39.34	\$105.10
Repairs	\$202.75	\$228.28	\$196.82	\$215.12	\$177.89	\$201.94
Hired Labor-Dir&Ovhd	\$481.23	\$248.65	\$440.68	\$697.27	\$187.00	\$424.48
Interest	\$100.09	\$206.64	\$98.39	\$76.05	\$89.82	\$102.90
Depreciation	\$191.72	\$343.95	\$178.77	\$185.28	\$170.19	\$209.85
Total Dir & Ovhd Cost	\$4,162.83	\$4,425.86	\$4,002.38	\$4,617.31	\$3,525.95	\$3,968.52
Net Return	\$954.04	\$931.72	\$914.31	\$1,104.78	\$626.76	\$951.10
Cost of Prod - O&D	\$16.88	\$16.87	\$16.72	\$16.76	\$24.84	\$16.96
Turnover Rate	35.3	37.3	35.9	34.6	25.9	38.0
Lbs of Protein&Fat/Cow	1,722	1,806	1,682	1,906	984	1,680
Lb. of Milk Sold/FTE	1,782,330	2,740,839	1,749,444	1,767,325	1,063,050	1,874,242
Feed Cost per CWT	\$8.82	\$9.02	\$8.82	\$8.43	\$14.01	\$8.74
Average Milk Price	\$19.94	\$19.13	\$19.79	\$19.91	\$29.50	\$20.22

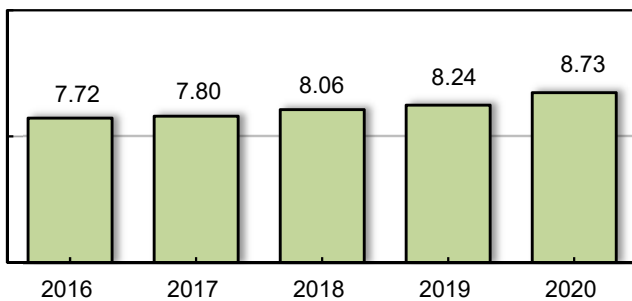


Summary of Selected Dairy Enterprise Factors - Average Farm Data

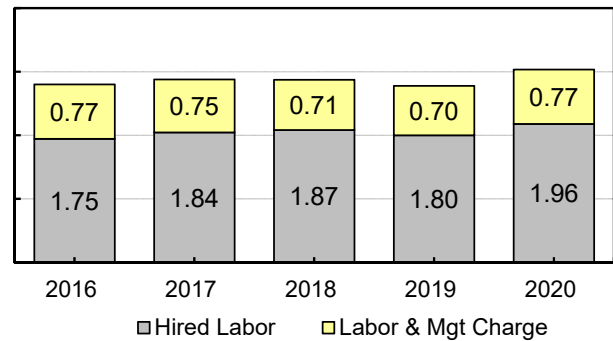
(excludes Organic and Organic Transition)



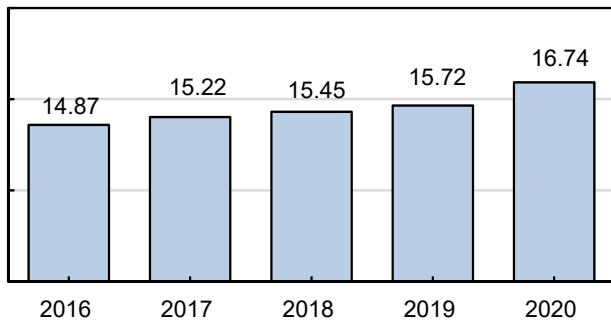
Feed Cost per CWT



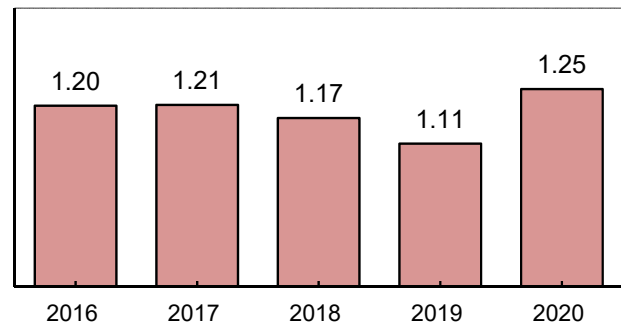
Labor per CWT



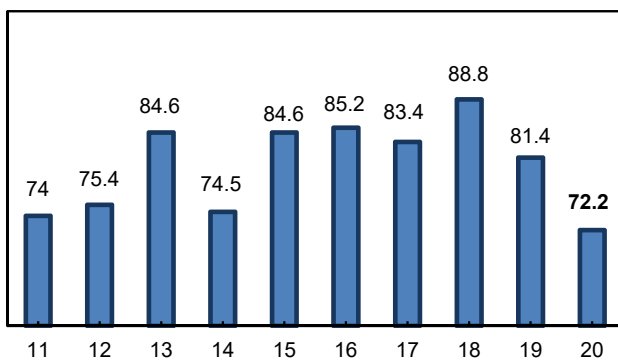
Dir & Ovhd Exp per CWT



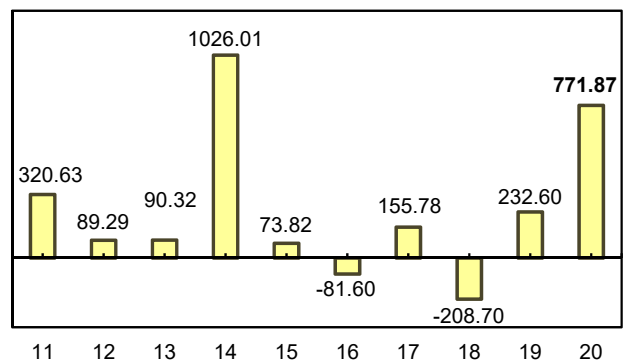
Vet, Breeding & Supplies



Operating Expense Ratio



Net Return after Dir, Ovhd, & Labor



A Long Term History of Selected Dairy Information

(Includes Organic and Organic Transition)

