



MINNESOTA STATE

Farm Business Management Program Database

25th Annual

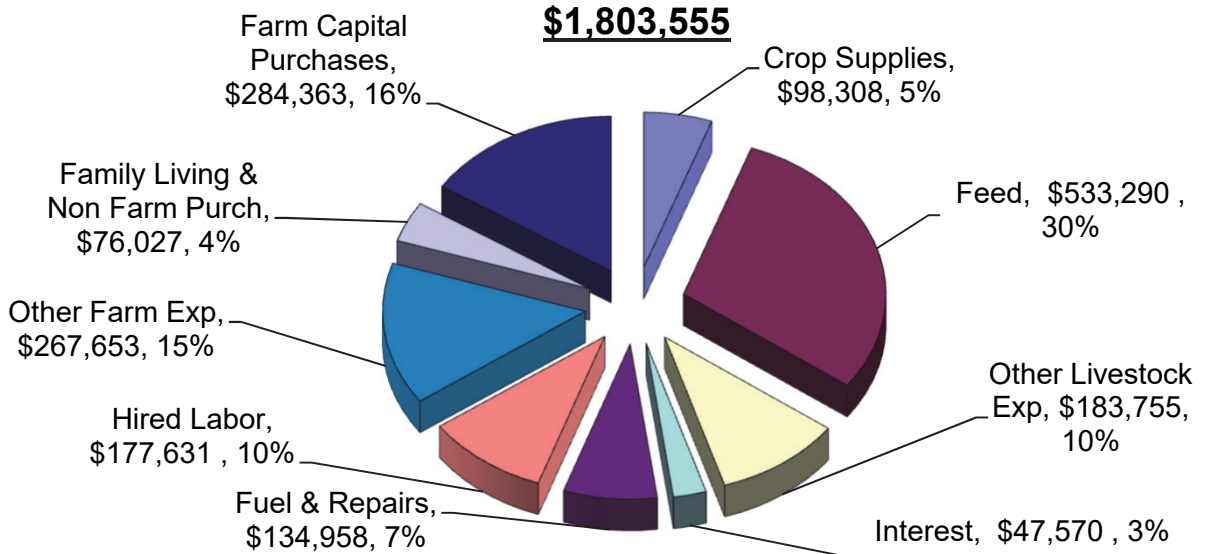
Dairy Farm Sort - 2021

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

April, 2022

Average Dollars Spent by a Minnesota Dairy Farm totals

\$1,803,555



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 2021

This 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 \$72,142,200. Based on that same graphic, the farms in this report spent \$508,602,510 in their greater communities in 2021. The majority of the money is spent locally, including businesses and cooperatives; demonstrating the vital importance of farming on the economy of Minnesota.

General Summary:

While milk prices slowly gained strength throughout the year, the average price received by dairy farms was lower than in both 2019 and 2020. At the same time, feed prices increased to their highest level since 2014. This led to lower margins and triggered Government support from the Dairy Margin Coverage (DMC) Program through the Farm Service Agency. Overall, average dairy farm profits decreased from 2020 to levels that were slightly above break-even. Some regions of the State were also significantly impacted by drought in 2021. The influence of this, along with increasing fuel, feed, and other operating costs will be a major factor in 2022.

- The median dairy farm earned \$114,261, down from \$178,994 in 2020
- The average price received for milk decreased by 4% from \$19.11 in 2020 to \$18.58 in 2021
- Total direct & overhead expenses were \$17.19 per hundred pounds of milk, up from \$16.74 in 2020
- Dairy producers showed a profit of \$0.18 per hundred pounds of milk, or about \$46 per cow.
- The average dairy farm milked 269 cows, which is up from an average of 232 cows in 2020.

Term Debt Coverage Trends					
Year	2017	2018	2019	2020	2021
Term Debt Coverage	1.20	0.61	1.52	3.01	1.88

This report 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. Page 5 provides a look at different management practices, while pages 6 and 7 provide selected trend data.

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+%	25+%	33+%

General Financial Summary

Farm Business Management Program Database
(Dairy Farms Sorted by Gross Farm Income, includes Organic and Organic Transition)

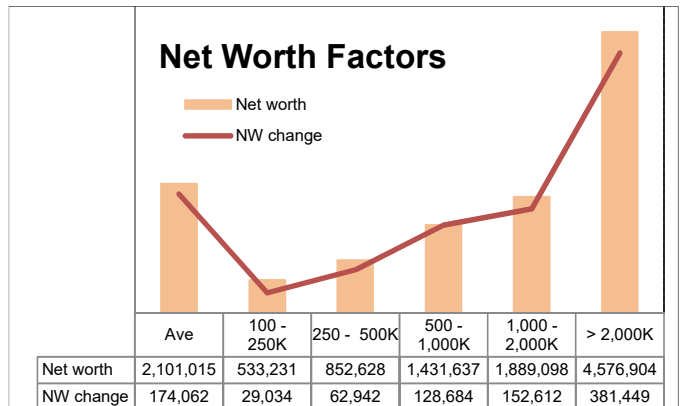
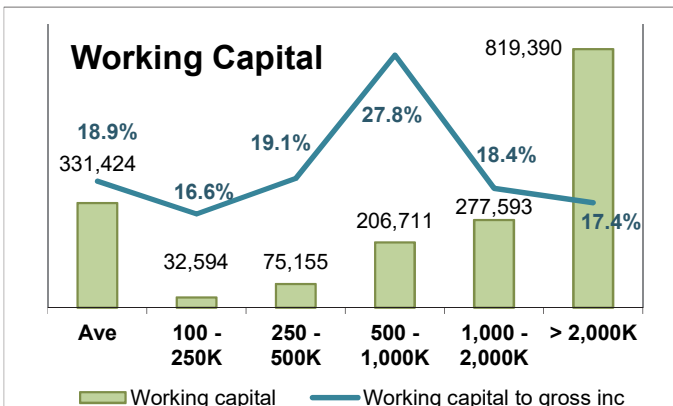
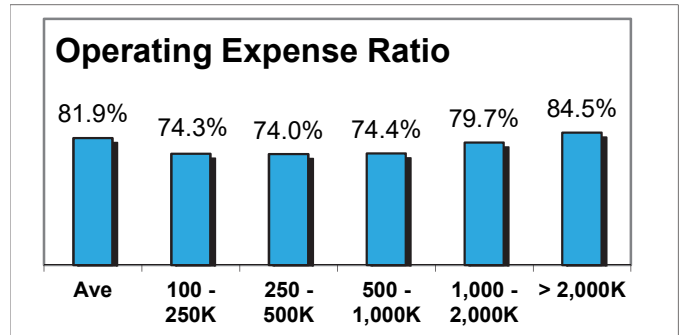
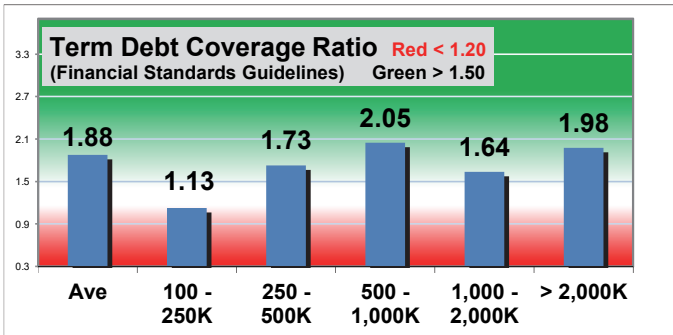
	Avg. Of <u>All Farms</u>	100,001 - <u>250,000</u>	250,001 - <u>500,000</u>	500,001 - <u>1,000,000</u>	<u>1,000,001 -</u> <u>2,000,000</u>	Over <u>2,000,000</u>
Number of farms	282	23	41	83	60	68
<u>Income Statement</u>						
Gross cash farm income	1,663,583	194,663	381,253	708,392	1,439,739	4,463,253
Total cash farm expense	1,443,164	156,070	309,061	579,139	1,242,843	3,937,248
Net cash farm income	220,419	38,593	72,191	129,253	196,896	526,004
Average net farm income	189,303	19,491	59,187	116,533	169,725	449,898
Median net farm income	114,261	31,307	51,650	104,455	167,582	335,634
<u>Solvency (end of year at market)</u>						
Total assets	3,677,970	929,631	1,504,187	2,369,611	3,503,488	8,005,605
Total liabilities	1,576,956	396,400	651,559	937,974	1,614,391	3,428,701
Net worth	2,101,015	533,231	852,628	1,431,637	1,889,098	4,576,904
Total net worth change	174,062	29,034	62,942	128,684	152,612	381,449

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	282	23	41	83	60	68
Liquidity						
Current ratio	2.24	1.65	2.08	3.06	2.32	2.10
Working capital	331,424	32,594	75,155	206,711	277,593	819,390
Working capital to gross inc	18.9%	16.6%	19.1%	27.8%	18.4%	17.4%
Solvency (market)						
Farm debt to asset ratio	44%	45%	46%	42%	47%	44%
Farm equity to asset ratio	43%	43%	43%	40%	46%	43%
Change in total net worth %	9%	6%	8%	10%	9%	9%
Profitability (cost)						
Rate of return on farm assets	5.7%	0.7%	4.8%	5.5%	5.4%	6.1%
Rate of return on farm equity	7.1%	-1.7%	6.0%	6.8%	7.0%	7.6%
Operating profit margin	13.3%	2.9%	15.3%	17.2%	14.5%	12.3%
Net farm income (avg)	189,303	19,491	59,187	116,533	169,725	449,898
EBIDTA	317,526	50,398	102,057	190,839	307,034	732,849
Repayment Capacity						
Capital debt repayment capacity	266,037	41,452	92,115	155,334	255,077	617,205
Capital debt repayment margin	124,411	4,608	38,992	79,409	99,847	305,306
Term debt coverage ratio	1.88	1.13	1.73	2.05	1.64	1.98
Replacement coverage ratio	1.55	1.02	1.48	1.59	1.38	1.65
Term debt to EBITDA	3.05	4.15	3.88	3.33	3.77	2.60
Efficiency						
Asset turnover rate (cost)	42.7%	25.9%	31.0%	32.0%	37.5%	49.7%
Operating expense ratio	81.9%	74.3%	74.0%	74.4%	79.7%	84.5%
Depreciation expense ratio	4.7%	10.0%	6.4%	6.2%	5.7%	4.0%
Interest expense ratio	2.7%	4.6%	4.7%	3.8%	3.4%	2.2%
Net farm income ratio	10.7%	11.1%	14.9%	15.6%	11.2%	9.3%

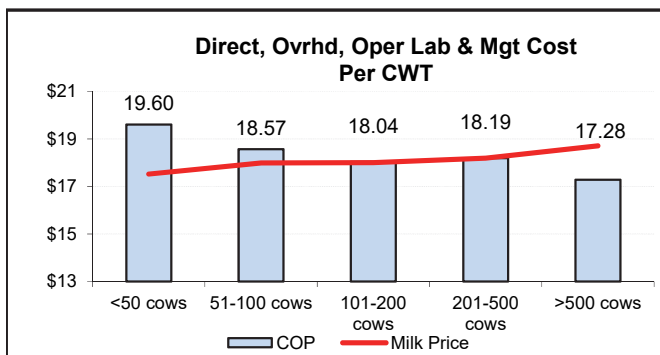
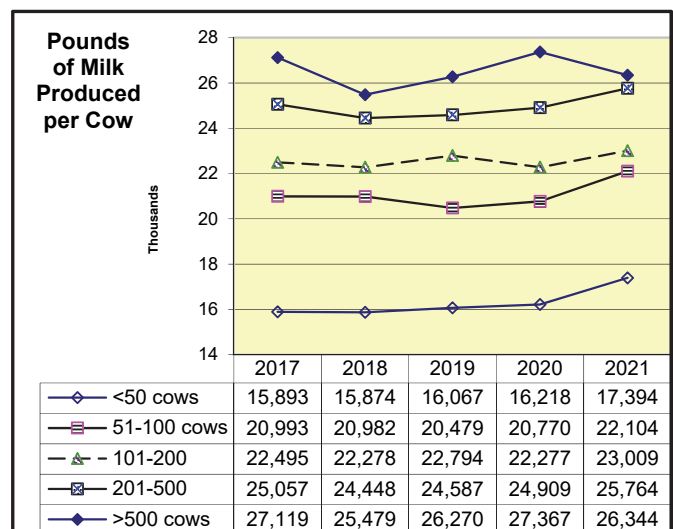
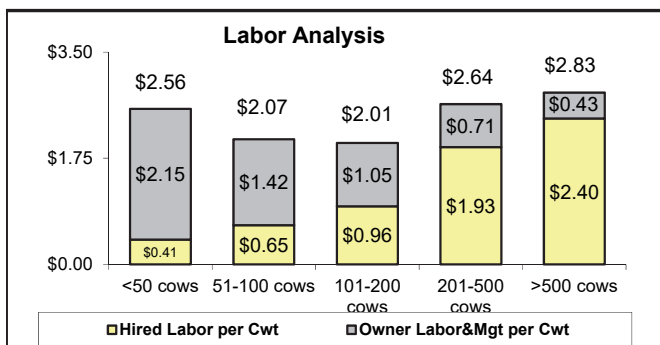
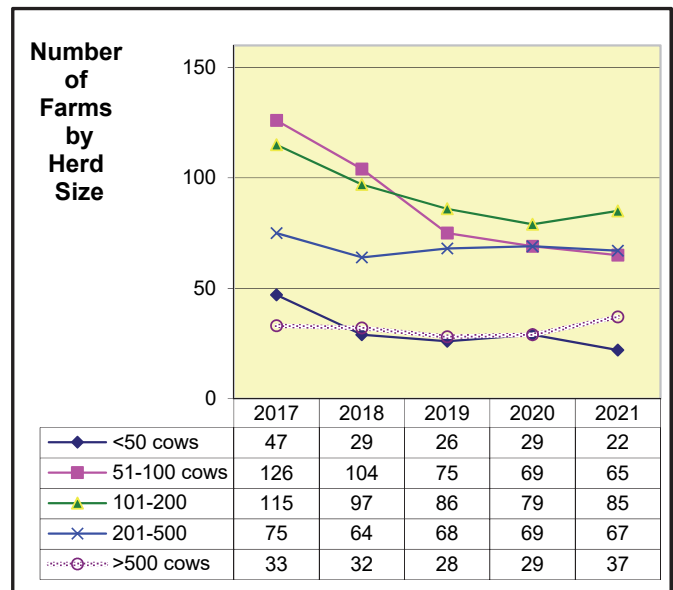
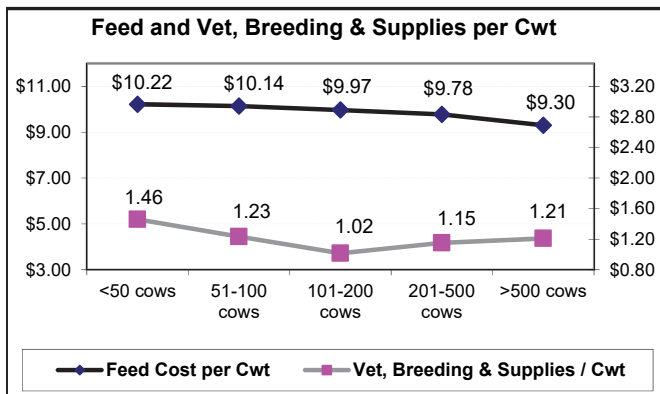


State Database Dairy Cow Enterprise <i>(Excludes Organic and Organic Transition)</i>	Sorted by Average Number of Dairy Cows					
	Average	Up to 50 Cows	51 to 100 Cows	101 to 200 Cows	201 To 500 Cows	Over 500 Cows
	***** Per Cow *****					
Number Of Farms	276	22	65	85	67	37
Milk sold (hd)	4,632.36	3,028.62	3,953.48	4,115.63	4,660.11	4,907.90
Dairy Calves sold (hd)	46.39	18.08	27.24	30.50	48.83	53.30
Transferred out (hd)	36.08	60.99	80.42	64.72	46.17	14.90
Cull sales (hd)	230.36	190.66	229.53	261.82	215.90	229.27
Other income (includes gov. payments)	314.73	492.28	525.13	480.91	429.98	165.91
Purchased (hd)	-63.98	-11.09	-30.95	-24.51	-7.57	-113.38
Transferred in (hd)	-49.45	-85.19	-118.03	-47.29	-65.02	-31.63
Inventory change (hd)	56.57	4.20	32.54	-16.73	29.25	99.50
Dairy repl net cost	-679.44	-607.42	-628.79	-676.46	-642.39	-709.19
Gross margin	4,523.63	3,091.14	4,070.57	4,188.60	4,715.24	4,616.58
Direct Expenses						
Protein Vit Minerals (lb.)	841.36	605.79	771.02	690.64	778.70	938.82
Complete Ration (lb.)	435.23	67.12	288.68	428.94	598.83	374.31
Corn (bu.)	298.39	279.58	326.83	293.91	334.46	276.52
Corn Silage (lb.)	422.27	338.24	354.45	395.43	391.63	458.66
Hay, Alfalfa (lb.)	200.34	179.63	284.83	271.52	230.58	150.05
Haylage, Alfalfa (lb.)	71.92	124.91	82.59	83.35	59.26	72.68
Other feed stuffs (lb)	154.37	183.13	133.36	131.26	125.12	180.11
Breeding fees	54.36	60.11	47.61	36.05	48.06	64.48
Veterinary	111.71	82.37	95.55	80.52	105.43	127.97
Supplies	129.57	111.29	129.38	117.19	143.15	126.45
Fuel & oil	75.59	70.43	79.4	79.23	77.49	72.99
Repairs	174.57	151.54	197.5	186.94	188.74	160.22
Custom hire	59.05	11.09	27.68	37.09	52.13	75.13
Hired labor	314.92	24.82	38.29	97.78	256.5	459.88
Hauling, & Trucking	84.39	66.73	87.19	70.84	80.72	90.78
Marketing	45.21	36.94	46.32	44.46	48.56	43.62
Bedding	67.54	23.57	65.65	81.16	79.13	57.98
Total direct expenses	3,634.69	2,533.41	3,150.54	3,225.06	3,700.84	3,817.78
Return over direct expense	888.94	557.73	920.03	963.54	1,014.40	798.80
Overhead Expenses						
Hired labor	178.04	46.40	104.39	122.27	241.58	173.44
Building & Machinery leases	58.84	16.83	10.64	17.48	87.81	63.40
Utilities	64.63	79.69	96.78	82.72	59.68	56.98
Interest	86.45	104.47	83.57	112.09	105.85	67.48
Mach & bldg depreciation	182.68	122.50	212.51	217.44	204.08	157.07
Miscellaneous	110.33	131.44	132.64	132.49	104.09	103.26
Total overhead expenses	680.98	501.34	640.53	684.50	803.08	621.63
Total dir & ovhd expenses	4,315.66	3,034.74	3,791.06	3,909.55	4,503.93	4,439.41
Net return	207.96	56.39	279.51	279.05	211.32	177.17
Labor & management charge	168.14	374.82	313.27	240.62	183.08	112.85
Net return over lbr & mgt	39.82	-318.42	-33.76	38.42	28.23	64.32
Cost of Production per CWT						
Total direct expense per cwt.	14.38	14.56	14.25	14.02	14.36	14.49
Total dir & ovhd expense per cwt.	17.07	17.45	17.15	16.99	17.48	16.85
With other revenue adjustments	17.56	17.18	16.71	16.77	17.34	18.01
With labor and management	18.23	19.34	18.13	17.82	18.05	18.43
Est. labor hours per unit	35.67	40.47	33.89	32.07	37.26	36.08
Other Information						
Avg. number of Cows	282.6	38.4	78.5	144.9	317.5	1039.4
Milk produced per Cow	25,285	17,394	22,104	23,009	25,764	26,344
Lbs of protein & fat per Cow	1,806	1,205	1,614	1,642	1,827	1,886
Turnover rate	36.2	35.3	38.2	38.1	34.3	36.4
Cows milking per unit	22	9	11	14	22	35
Feed cost per head per day	6.64	4.87	6.14	6.29	6.90	6.72
Feed cost per cwt of milk	9.59	10.22	10.14	9.97	9.78	9.3
Feed cost per Cow	2,423.89	1,778.41	2,241.76	2,295.07	2,518.58	2,451.14
Avg. milk price per cwt.	18.41	17.52	17.99	18.00	18.19	18.71
Milk price / feed margin	8.83	7.29	7.85	8.03	8.41	9.40

Selected Dairy Enterprise Factors from the Farm Business Management Program Database

(excludes Organic and Organic Transition)

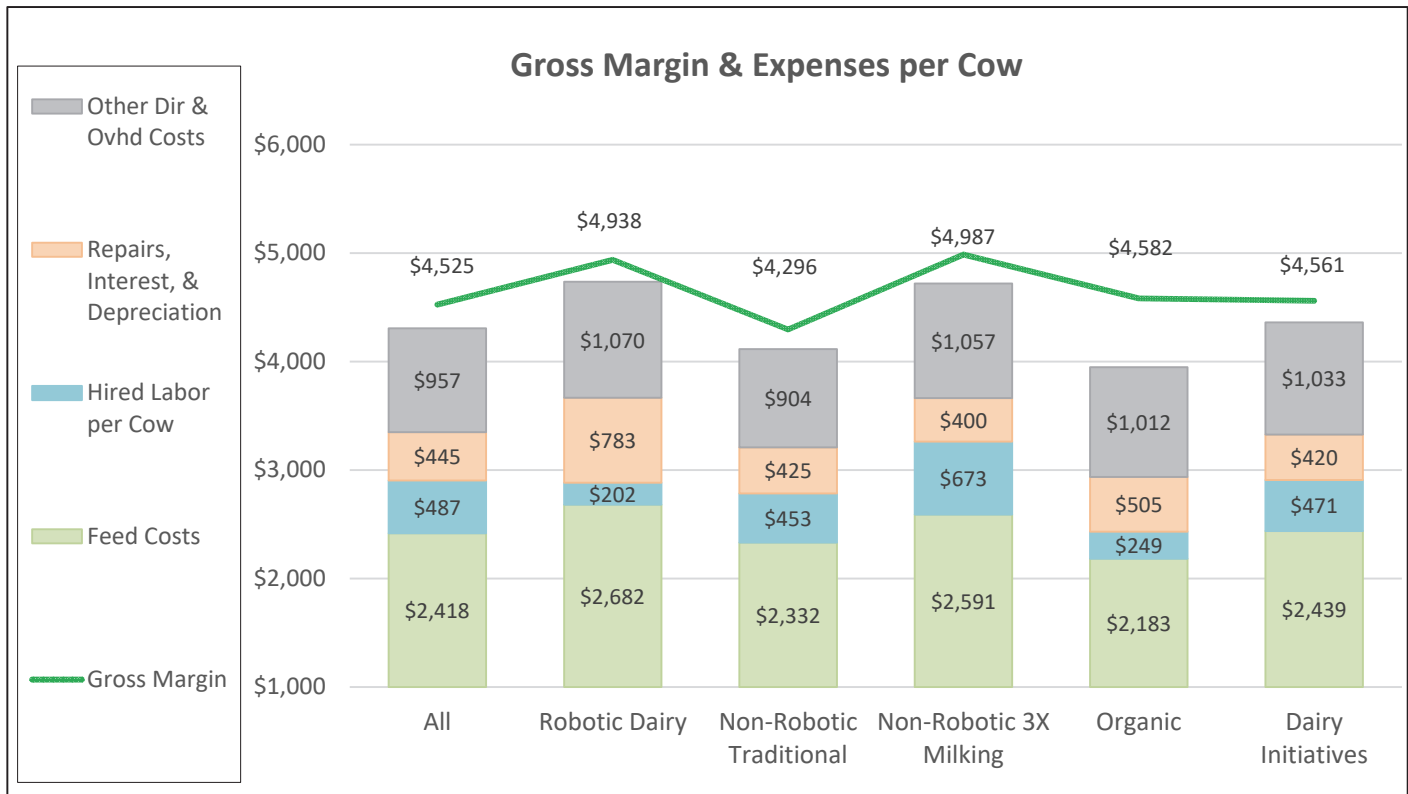
Herd Size	State Ave.	up to 50 cows	51-100 cows	101-200 cows	201-500 cows	over 500 cows
Number of Farms	276	22	65	85	67	37
Ave # of Cows	282.6	38.4	78.5	144.9	317.5	1039.4
Milk Prod. Per Cow	25,285	17,394	22,104	23,009	25,764	26,344
Feed Cost per Cwt	\$9.59	\$10.22	\$10.14	\$9.97	\$9.78	\$9.30
Interest per Cwt	\$0.34	\$0.60	\$0.38	\$0.49	\$0.41	\$0.26
Vet, Breeding & Supplies / Cwt	\$1.17	\$1.46	\$1.23	\$1.02	\$1.15	\$1.21
Hired Labor per Cwt	\$1.95	\$0.41	\$0.65	\$0.96	\$1.93	\$2.40
Deprec/Lease per Cwt	\$0.96	\$0.80	\$1.01	\$1.02	\$1.13	\$0.84
Milk Price per Cwt	\$18.41	\$17.52	\$17.99	\$18.00	\$18.19	\$18.71
Dir & Ovhd Cost per Cwt	\$17.07	\$17.45	\$17.15	\$16.99	\$17.48	\$16.85
Return over Dir & Ovhd per Cow	\$208	\$56	\$280	\$279	\$211	\$177
Herd Profit over Dir&Ovhd	\$58,769	\$2,165	\$21,942	\$40,434	\$67,094	\$184,150
Owner Labor&Mgt per Cwt	\$0.66	\$2.15	\$1.42	\$1.05	\$0.71	\$0.43
Net per Cow after Labor&Mgt	\$40	-\$318	-\$34	\$38	\$28	\$64
Herd Profit over Labor&Mgt	\$11,253	-\$12,228	-\$2,650	\$5,569	\$8,966	\$66,854



Additional Selected Sorts within the Dairy Enterprise

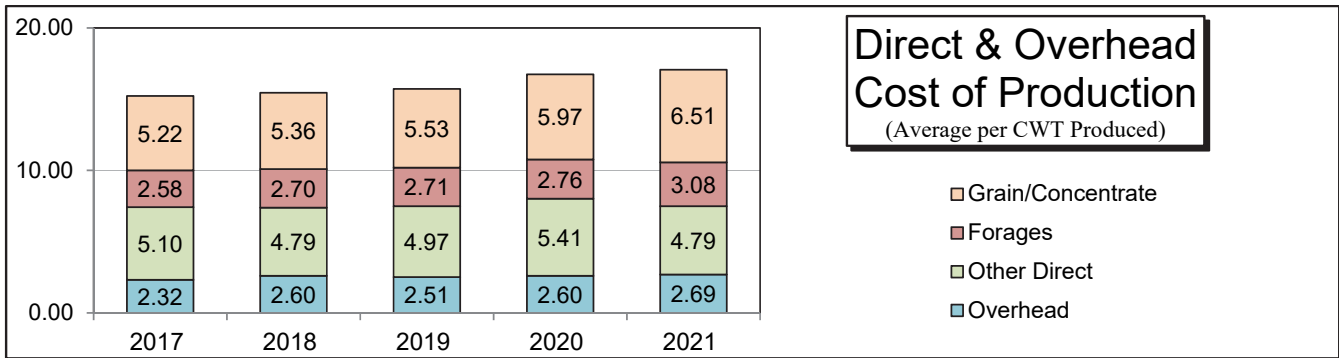
The State Database provides the opportunity to dig deeper into the data using special markers on farms with different practices. Using the FINPACK & RankEM Central software from the Center for Farm Financial Management, specific production practices can be included or excluded from a given sort. This 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	298	30	212	33	22	76
Number of Cows	269	197	242	631	94	223
Milk Produced per Cow	25,049	26,631	24,319	27,293	16,131	24,359
Milk Sold	\$4,630.06	\$4,861.19	\$4,427.99	\$5,088.10	\$4,542.85	\$4,554.45
Gross Margin	\$4,525.14	\$4,938.15	\$4,295.95	\$4,986.99	\$4,582.34	\$4,561.25
Feed Cost per Cow	\$2,417.70	\$2,681.82	\$2,331.62	\$2,590.52	\$2,183.20	\$2,438.73
Breeding Fees	\$53.66	\$49.89	\$54.41	\$55.69	\$27.25	\$51.58
Veterinary	\$109.98	\$110.60	\$108.21	\$120.72	\$44.33	\$105.79
Repairs	\$175.15	\$244.95	\$168.87	\$169.48	\$197.41	\$167.80
Hired Labor per Cow	\$486.69	\$201.59	\$453.40	\$672.74	\$249.18	\$470.56
Interest	\$86.78	\$190.38	\$84.35	\$65.30	\$99.59	\$88.44
Depreciation	\$183.32	\$347.29	\$171.87	\$165.07	\$207.52	\$163.34
Total Dir & Ovhd Cost	\$4,306.22	\$4,735.79	\$4,114.18	\$4,720.40	\$3,948.44	\$4,361.78
Net Return	\$218.92	\$202.36	\$181.77	\$266.59	\$633.90	\$199.47
Cost of Prod - O&D	\$17.19	\$17.78	\$16.92	\$17.30	\$24.48	\$17.91
Turnover Rate	36.1	36.8	36.9	34.4	31.5	35.6
Lbs of Protein&Fat/Cow	1,789	1,835	1,734	1,977	1,147	1,757
Lb. of Milk Sold/FTE	1,951,742	2,583,031	2,001,594	1,788,106	1,147,939	1,884,821
Feed Cost per CWT	\$9.65	\$10.07	\$9.59	\$9.49	\$13.53	\$10.01
Average Milk Price	\$18.58	\$18.44	\$18.26	\$18.79	\$28.59	\$18.85

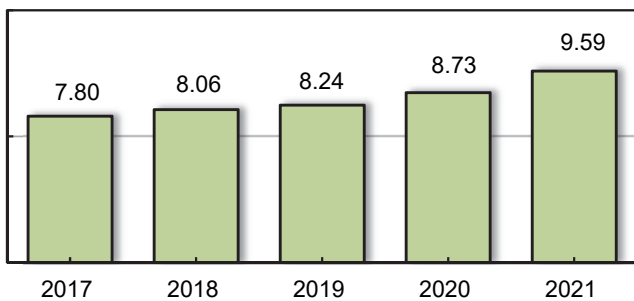


Summary of Selected Dairy Enterprise Factors - Average Farm Data

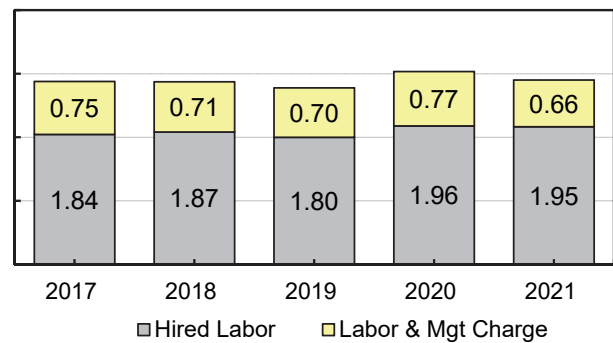
(excludes Organic and Organic Transition)



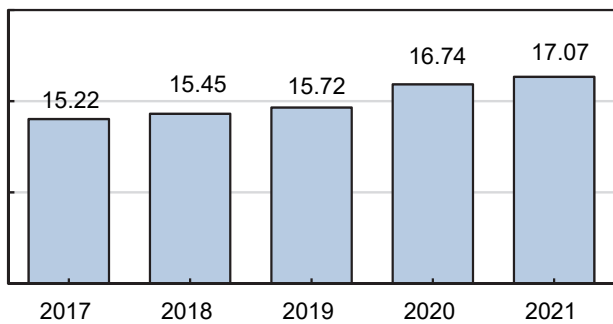
Feed Cost per CWT



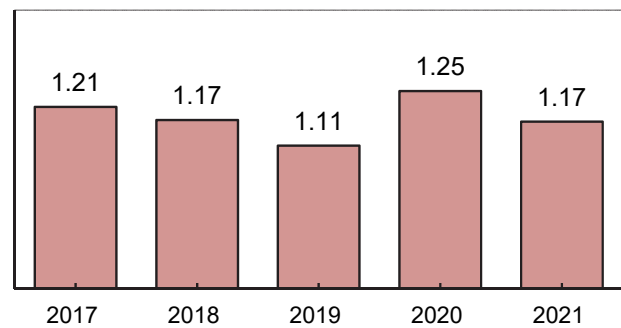
Labor per CWT



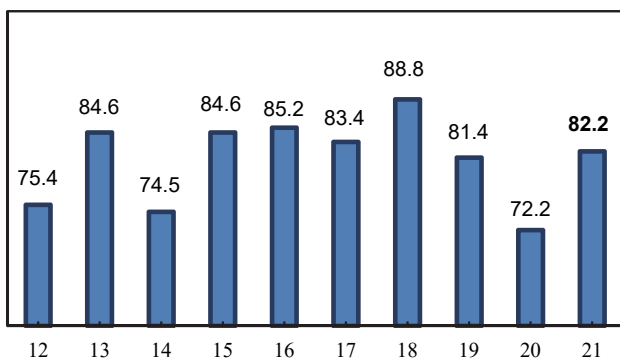
Dir & Ovhd Exp per CWT



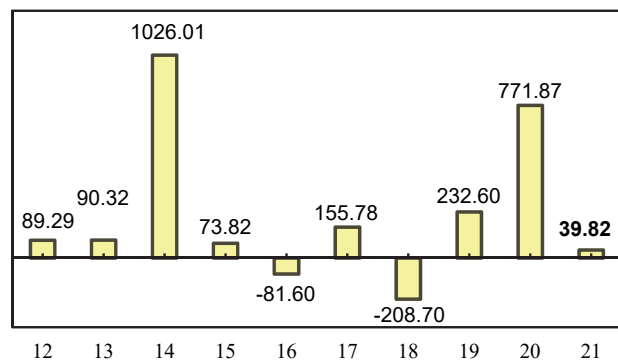
Vet, Breeding & Supplies



Operating Expense Ratio



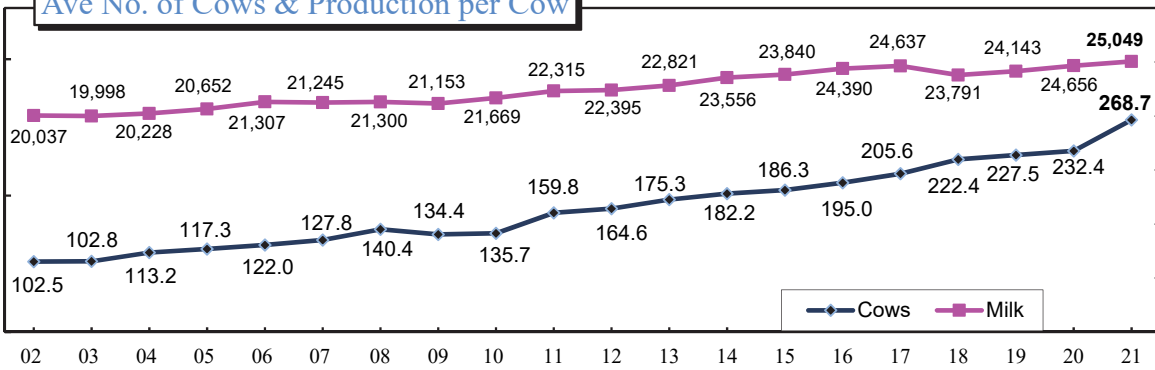
Net Return after Dir, Ovhd, & Labor



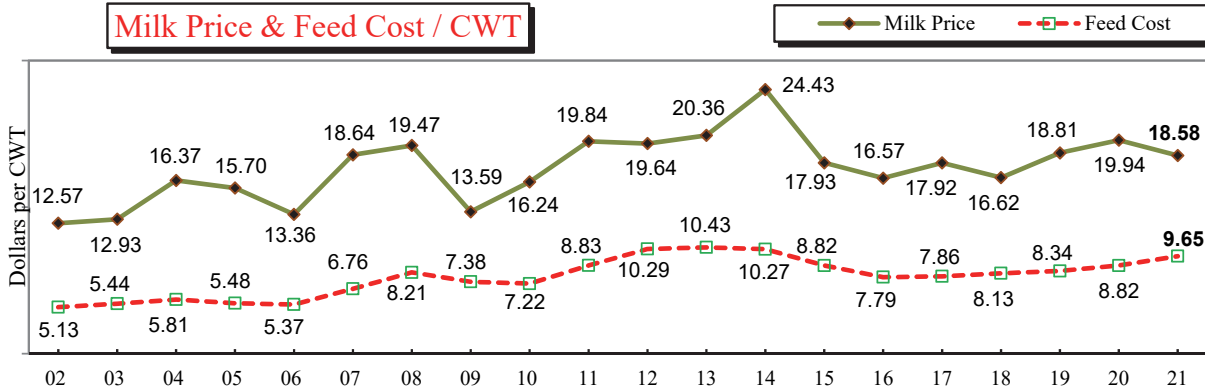
A Long Term History of Selected Dairy Information

(Includes Organic and Organic Transition)

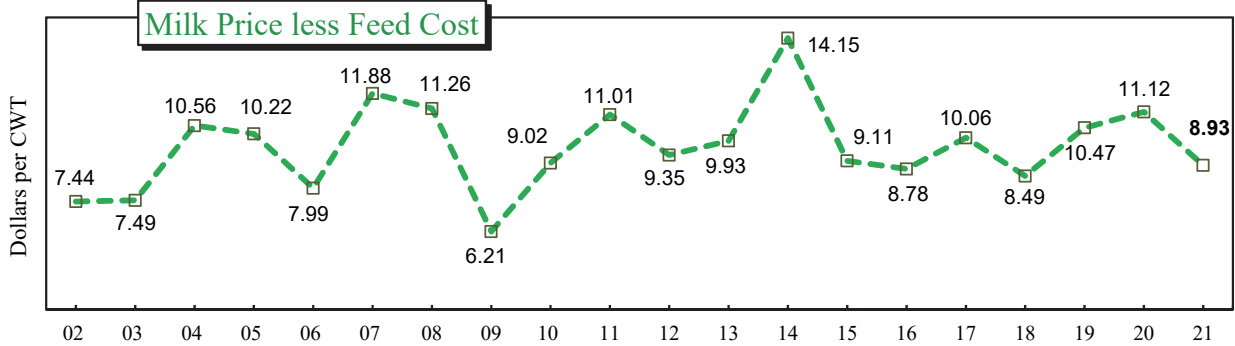
Ave No. of Cows & Production per Cow



Milk Price & Feed Cost / CWT



Milk Price less Feed Cost



Ave Milk Price Recv'd vs. Total Direct, Ovhd, & Labor

