



MINNESOTA STATE

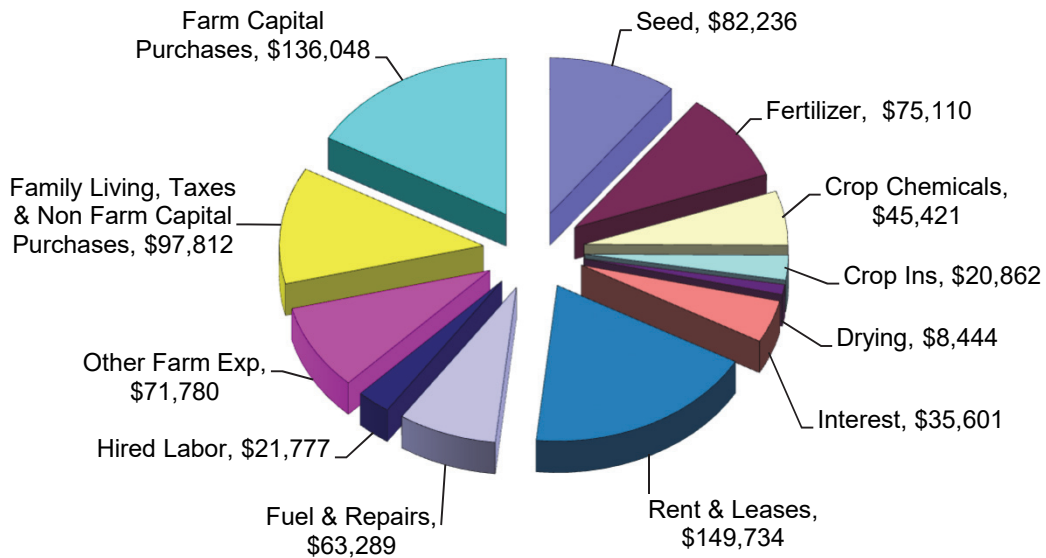
# Farm Business Management Program Database

## Crop Farm Sort - 2017

*Financial Summary by Gross Farm Income & Crop Acres  
Corn & Soybean Enterprise Data  
Selected Precision Technology and Tillage Data*

*April, 2018*

### Average Dollars Spent by a Crop Farm totals \$808,114 in 2017



In cooperation with the Center for Farm Financial Management University of Minnesota  
Compiled by Aaron Brudelic & DelRay Lecy

Contact: Keith Olander @ [kolander@clcmn.edu](mailto:kolander@clcmn.edu) or Brad Schoesser @ [brad.schoesser@southcentral.edu](mailto:brad.schoesser@southcentral.edu)  
Farm Business Management Website: [agcentric.org](http://agcentric.org) or [centerofagriculture.org](http://centerofagriculture.org)

**Financial Summary  
Statewide Special Sort for Crops  
Farm Business Management Database  
Brief Overview**

Despite a third consecutive year of strong crop yields, incomes for Minnesota farmers fell back to levels near 2015. A fourth consecutive year of declining prices kept income levels below break-even for many producers. Crop farm incomes decreased in 2017 and the median crop producer did not earn enough to meet family living.

The strong crops yields across the state weighed on prices yet again. For producers participating in the Minnesota State Farm Business Management program, the average corn yield averaged 203 bushels per acre, up from last years average of 199 bushels but the average price received for corn declined by over 10 cents. The yields for soybeans statewide were not near the record levels of 2016.

The median crop farm earned \$21,920 compared to \$43,705 last year. Including off-farm earnings, the average crop farm family made a modest improvement in their net worth.

The median net farm income for crop producers for the last five years was: \$21,920 (2017), \$43,705 (2016), \$24,294 (2015); \$13,908 (2014); \$44,124 (2013).

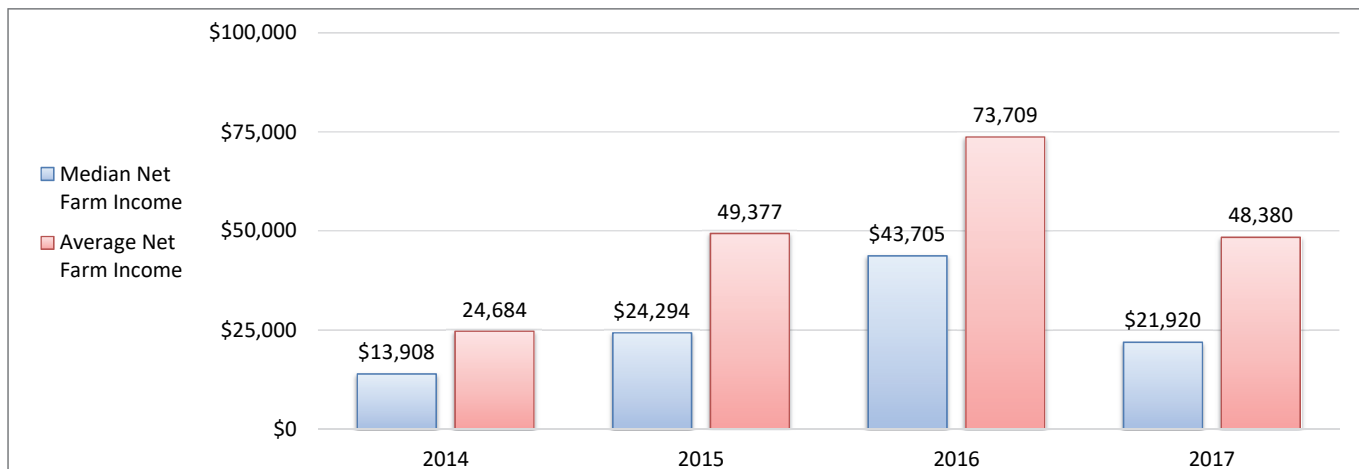
With the strong yields across the state, the downward spiral in prices that began in 2014 continued.

- The average price received for corn sold by participating producers declined to \$3.20 per bushel in 2017, down from \$3.31 the year before.
- Soybean yields averaged just over 47 bushels per acre compared to the record level of 56 bushels per acre in 2016. The average producer sold soybeans for \$9.19 per bushel compared to \$9.35 the previous year.
- Wheat yielded 73 bushels per acre up from 67 bushels per acre in 2017. Wheat sold for \$5.94 per bushel compared to \$4.79 per bushel in 2016.

Like any business, every farm has a different cost structure and some farms are doing better than others. The average farm's balance sheet is still strong, but there are obvious signs of financial stress. Farmer/lender mediation requests are up yet again. Many farms have already restructured debt to lengthen terms and free up cash flow. Some farms will have to make major adjustments in the coming year in order to continue farming.

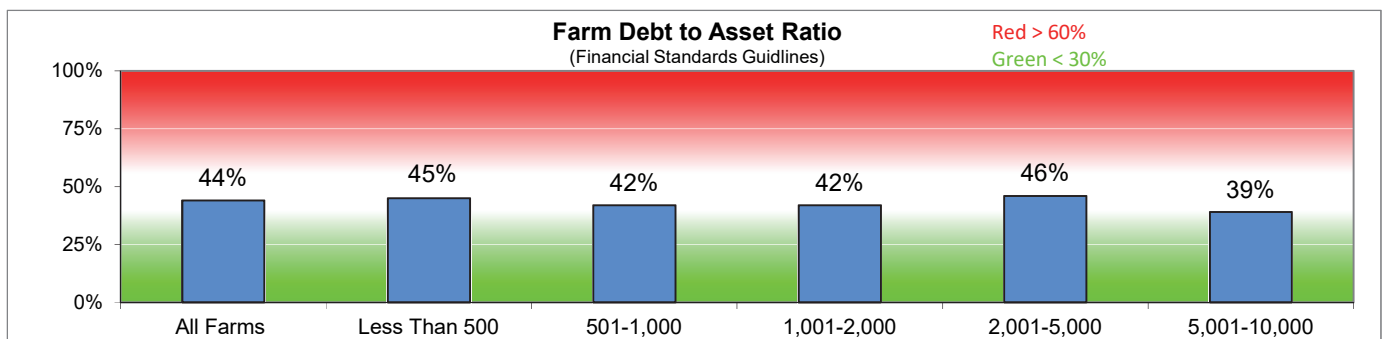
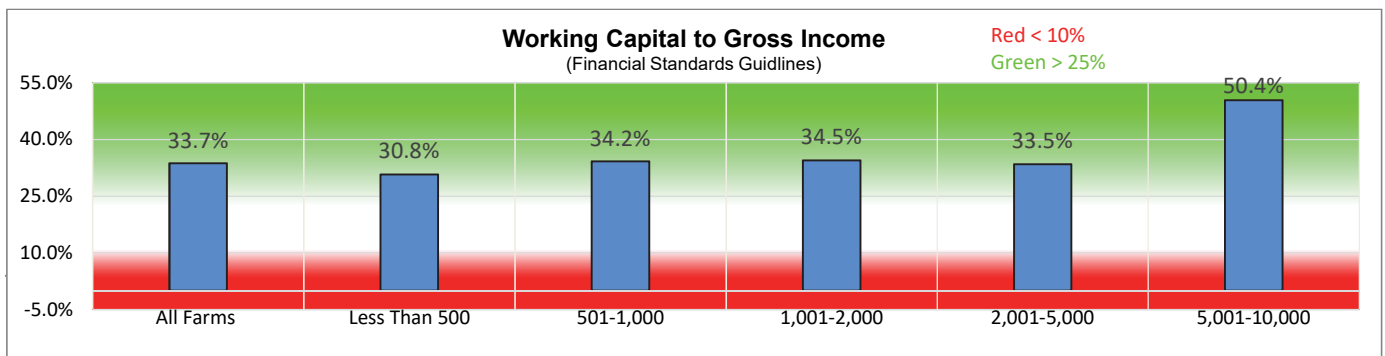
Looking forward, there are some areas of optimism. Costs have decreased as land rental rates and other inputs have adjusted to lower price conditions. Lower fertilizer costs in particular will help.

This special sort report for crops provides summary financial information from 1089 crop producers in the Minnesota State Farm Business Management (FBM) Database, which is about half of the 2164 total producers in the state FBM database. Selected data is also include from 1245 corn enterprises and 1210 soybean enterprises on rented land.



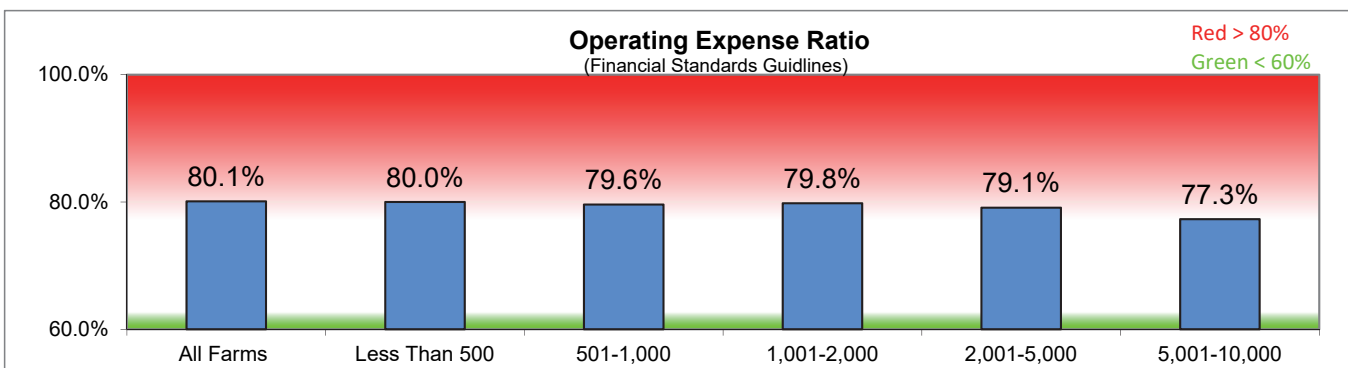
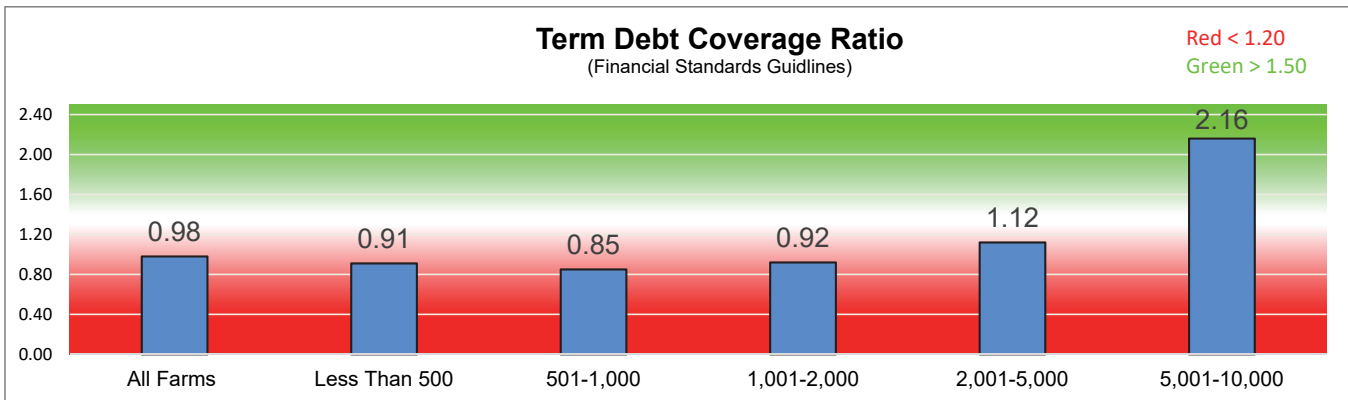
**Financial Summary**  
**Statewide Special Sort for Crops**  
**Farm Business Management Database**  
**(Farms Sorted By Total Crop Acres)**

	Avg. Of All Farms	Less Than 500	501 - 1,000	1,001 - 2,000	2,001 - 5,000	5,001 - 10,000
Number of farms	1089	379	307	237	152	11
<b>Income Statement</b>						
Gross cash farm income	670,614	170,190	460,037	843,450	1,702,404	3,858,943
Total cash farm expense	574,254	150,549	389,241	704,268	1,455,911	3,279,024
Net cash farm income	96,360	19,641	70,795	139,182	246,493	579,919
Average net farm income	48,380	7,477	28,162	56,644	160,207	567,041
Median net farm income	21,920	6,467	26,424	60,513	128,650	617,100
<b>Profitability (cost)</b>						
Rate of return on assets	1.5%	0.0%	0.7%	1.3%	2.6%	5.4%
Rate of return on equity	-0.3%	-4.0%	-1.8%	-0.5%	1.6%	6.7%
Operating profit margin	4.9%	0.2%	2.6%	4.4%	7.6%	13.2%
Asset turnover rate	31.3%	24.4%	28.5%	29.9%	34.3%	41.0%
<b>Liquidity &amp; Repayment (end of year)</b>						
Current ratio	1.57	1.52	1.57	1.59	1.55	2.24
Working capital	230,333	52,870	159,941	292,434	591,298	2,002,436
Working capital to gross income	33.7%	30.8%	34.2%	34.5%	33.5%	50.4%
Term debt coverage ratio	0.98	0.91	0.85	0.92	1.12	2.16
Replacement coverage ratio	0.68	0.65	0.57	0.62	0.81	1.33
Term debt to EBITDA	4.03	6.88	4.42	3.91	3.28	2.38
<b>Solvency (end of year at market)</b>						
Total assets	3,357,306	1,304,692	2,759,885	4,261,653	7,161,183	14,218,575
Total liabilities	1,372,715	522,675	1,048,777	1,695,342	3,148,841	5,413,915
Net worth	1,984,591	782,017	1,711,108	2,566,312	4,012,342	8,804,660
Farm debt to asset ratio	44%	45%	42%	42%	46%	39%
<b>Nonfarm Information</b>						
Net nonfarm income	39,351	49,442	40,389	37,110	18,810	5,030
Farms reporting living expenses	230	76	83	54	17	-
Total family living expense	63,866	50,456	61,783	78,303	88,123	-
Total living, invest, cap. purch	95,505	55,696	95,574	138,926	135,210	-



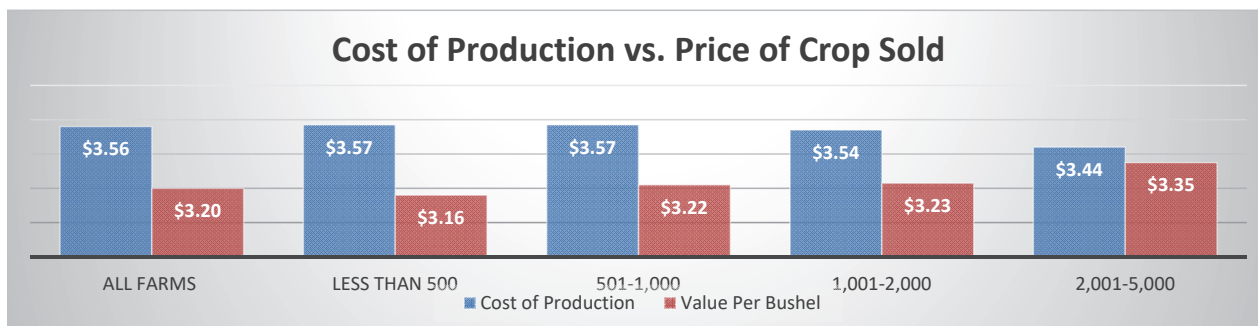
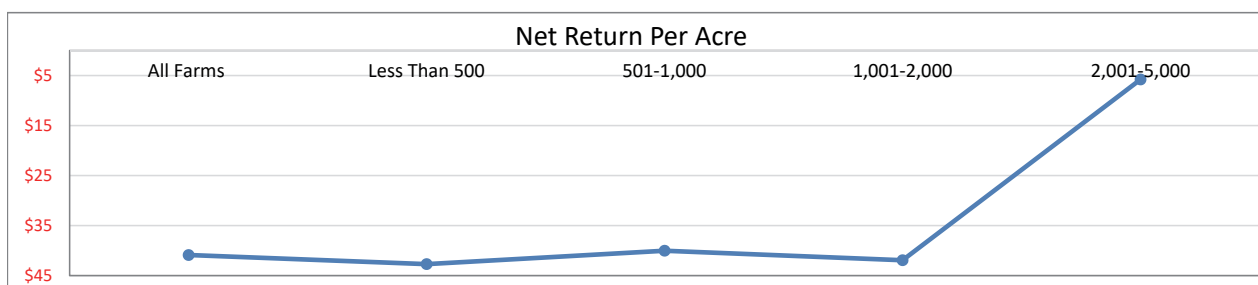
**Financial Standards Measures  
Statewide Special Sort for Crops  
Farm Business Management Database  
(Farms Sorted By Total Crop Acres)**

	Avg. Of All Farms	Less Than 500	501 - 1,000	1001 2,000	2001 - 5,000	5001 - 10,000
Number of farms	1089	379	307	237	152	11
<b>Liquidity</b>						
Current ratio	1.57	1.52	1.57	1.59	1.55	2.24
Working capital	230,333	52,870	159,941	292,434	591,298	2,002,436
Working capital to gross inc	33.7%	30.8%	34.2%	34.5%	33.5%	50.4%
<b>Solvency (market)</b>						
Farm debt to asset ratio	44%	45%	42%	42%	46%	39%
Farm equity to asset ratio	56%	55%	58%	58%	54%	61%
Farm debt to equity ratio	0.77	0.82	0.71	0.73	0.84	0.63
<b>Profitability (cost)</b>						
Rate of return on farm assets	1.5%	0.0%	0.7%	1.3%	2.6%	5.4%
Rate of return on farm equity	-0.3%	-4.0%	-1.8%	-0.5%	1.6%	6.7%
Operating profit margin	4.9%	0.2%	2.6%	4.4%	7.6%	13.2%
Net farm income	48,380	7,477	28,162	56,644	160,207	567,041
EBITDA	135,754	34,424	95,162	171,160	369,684	900,995
<b>Repayment Capacity</b>						
Capital debt repayment	84,051	26,639	54,720	101,417	231,730	649,985
Capital debt repayment	-1,619	-2,728	-9,943	-9,351	24,646	349,682
Replacement margin	-38,691	-14,214	-40,576	-61,073	-52,935	161,613
Term debt coverage ratio	0.98	0.91	0.85	0.92	1.12	2.16
Replacement coverage ratio	0.68	0.65	0.57	0.62	0.81	1.33
<b>Efficiency</b>						
Asset turnover rate (cost)	31.3%	24.4%	28.5%	29.9%	34.3%	41.0%
Operating expense ratio	80.1%	80.0%	79.6%	79.8%	79.1%	77.3%
Depreciation expense ratio	7.6%	7.8%	8.7%	8.4%	7.3%	4.9%
Interest expense ratio	5.4%	8.3%	6.0%	5.4%	4.9%	3.2%
Net farm income ratio	7.1%	4.3%	6.0%	6.7%	9.1%	14.3%



**Crop Enterprise Analysis for Corn on Rented Acres  
Statewide Special Sort for Crops  
Farm Business Management Database  
(Farms Sorted By Total Crop Enterprise Acres)**

	Avg. Of All Farms	Less Than 500	501 1,000	1,001 2,000	2,001 5,000
Number of farms	1245	1020	161	55	8
Yield per acre (bu.)	203.37	198.21	208.70	201.84	226.36
Value Per Bushel	3.20	3.16	3.22	3.23	3.35
Gross return per acre	667.84	641.83	683.92	675.91	781.05
<b>Direct Expenses</b>					
Seed	111.09	111.69	113.10	108.84	106.66
Fertilizer	114.02	109.81	117.68	118.22	112.14
Crop chemicals	35.66	36.10	36.56	33.51	37.00
Crop insurance	19.91	19.21	21.38	19.33	22.34
Drying expense	19.87	19.73	21.29	17.72	20.81
Storage	2.29	2.12	2.29	1.85	5.69
Fuel & oil	24.13	24.37	23.99	24.20	23.50
Repairs	41.83	44.02	42.65	37.18	42.21
Custom hire	10.81	13.00	8.44	7.04	15.42
Hired labor	4.69	2.53	5.16	6.40	11.58
Land rent	196.73	179.29	197.04	212.03	261.63
Machinery leases	4.57	3.20	2.89	10.93	2.45
Utilities	1.50	1.35	1.32	1.73	3.16
Hauling and trucking	2.28	2.18	2.18	2.90	2.05
Marketing	2.06	1.65	2.40	2.53	2.45
Operating interest	13.40	13.01	14.16	12.60	12.86
Miscellaneous	2.39	2.40	2.05	3.57	2.16
Total direct expenses per acre	607.64	585.89	614.88	621.02	684.10
Return over direct exp per acre	60.21	55.94	69.05	54.90	96.95
Total overhead expenses per acre	101.09	98.65	109.07	96.83	102.73
Total dir&ovhd expenses per acre	708.73	684.54	723.95	717.85	786.83
Net return per acre	(40.89)	(42.71)	(40.03)	(41.93)	(5.78)
<b>Cost of Production</b>					
Total direct expense per bu.	2.99	2.96	3.12	3.08	3.02
Total dir & ovhd exp per bu.	3.48	3.45	3.47	3.56	3.48
Less govt & other income	3.33	3.30	3.34	3.35	3.27
With labor & management	3.56	3.57	3.57	3.54	3.44
Net value per unit	3.22	3.17	3.23	3.25	3.44
Machinery cost per acre	134.69	137.82	135.21	127.09	140.14



**Crop Enterprise Analysis for Soybeans on Rented Acres**  
**Statewide Special Sort for Crops**  
**Farm Business Management Database**  
**(Farms Sorted By Total Crop Enterprise Acres)**

	Avg. Of All Farms	Less Than 500	501 1,000	1,001 2,000	2,001 5,000
Number of farms	1210	963	171	65	11
Yield per acre (bu.)	47.12	49.79	47.62	45.18	35.47
Value Per Bushel	9.19	9.18	9.20	9.24	9.16
Gross return per acre	451.57	473.97	455.61	432.23	363.42

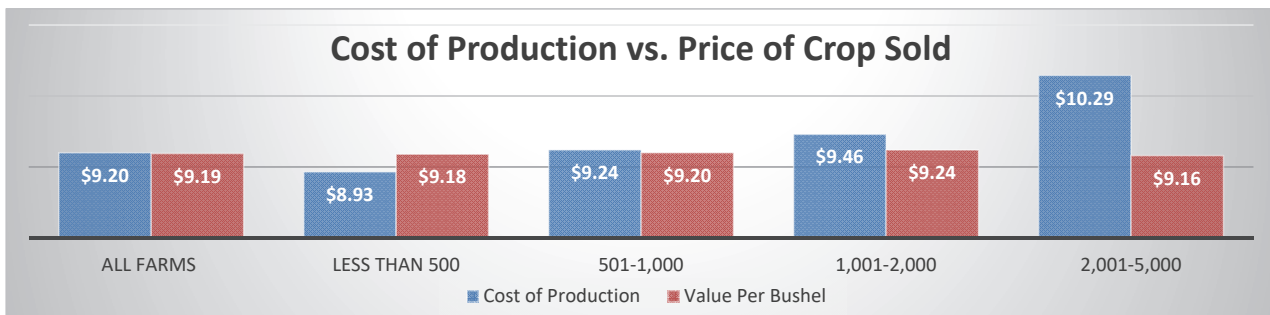
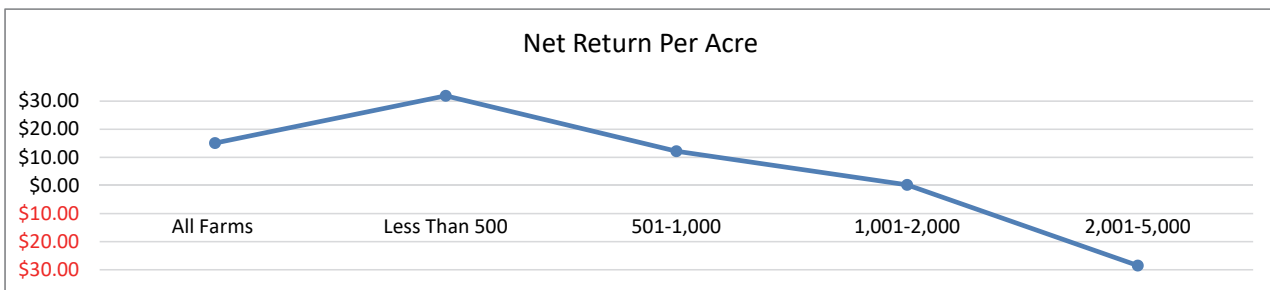
**Direct Expenses**

Seed	58.21	58.15	59.12	58.22	55.24
Fertilizer	19.48	19.56	21.12	17.08	19.79
Crop chemicals	40.62	43.33	40.45	37.91	33.43
Crop insurance	19.38	19.33	19.35	20.39	16.96
Storage	0.60	0.74	0.54	0.61	-
Fuel & oil	14.32	14.30	14.87	14.46	12.01
Repairs	25.19	26.51	25.91	23.33	20.26
Custom hire	7.19	9.18	7.46	3.36	5.63
Hired labor	3.47	2.26	3.85	6.04	1.76
Land rent	170.48	172.78	172.86	169.86	150.44
Machinery leases	3.20	3.05	3.16	4.51	0.50
Utilities	0.83	0.82	1.10	0.72	0.22
Hauling and trucking	0.87	1.18	1.01	-	0.01
Marketing	1.18	1.29	0.99	1.43	0.57
Operating interest	7.96	7.29	7.97	8.96	8.88
Miscellaneous	2.29	2.10	2.57	2.03	4.09
Total direct expenses per acre	375.26	381.86	382.32	368.91	329.79
Return over direct exp per acre	76.31	92.11	73.29	63.32	33.63

Total overhead expenses per acre	61.22	60.21	61.10	63.10	62.14
Total dir & ovhd expenses per acre	436.48	442.07	443.42	432.02	391.92
Total dir&ovhd expenses per acre	15.09	31.90	12.19	0.21	(28.50)

**Cost of Production**

Total direct expense per bu.	7.96	7.67	8.03	8.17	9.30
Total dir & ovhd exp per bu.	9.26	8.88	9.31	9.56	11.05
Less govt & other income	8.57	8.26	8.63	8.86	9.78
With labor & management	9.20	8.93	9.24	9.46	10.29
Net value per unit	9.21	9.19	9.21	9.26	9.22
Machinery cost per acre	82.35	85.41	83.44	79.10	70.04

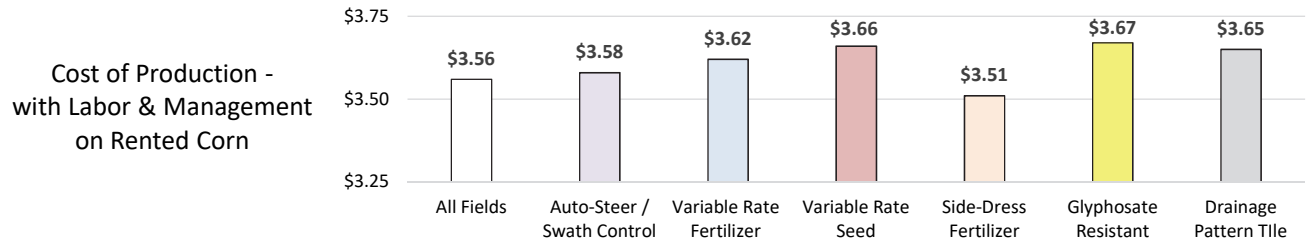


**Financial Standards Measures  
Statewide Special Sort for Crops  
Farm Business Management Database  
Precision Agriculture Technology**

The State Database includes data from over 1,200 farms that produce corn and soybeans, and 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 FBM Corn and Soybean Data.

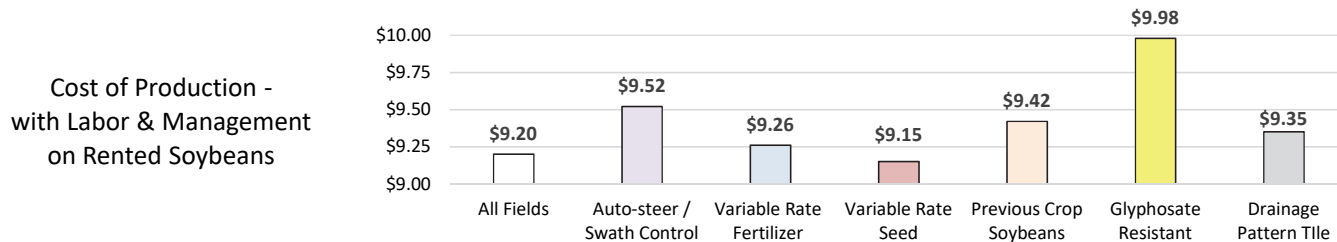
**Corn Enterprise**

Sort	All Fields	Swath Control	Rate Fertilizer	Variable Rate Seed	Side-Dress Fertilizer	Glyphosate Resistant	Drainage Pattern Tile
Number of Farms	1245	312	141	96	17	78	104
Yield	203.37	207.83	211.89	207.64	214.43	202.10	219.31
Seed	\$111.09	\$113.03	\$114.40	\$113.78	\$118.57	\$111.39	\$118.89
Fertilizer	\$114.02	\$114.85	\$119.24	\$118.67	\$111.36	\$113.20	\$123.55
Chemical	\$35.66	\$35.69	\$37.02	\$36.80	\$35.96	\$34.55	\$40.08
Fuel & Oil	\$24.13	\$25.06	\$26.64	\$26.03	\$25.31	\$26.64	\$24.09
Repairs	\$41.83	\$43.62	\$47.43	\$43.26	\$38.12	\$49.11	\$44.79
Rent	\$196.73	\$202.56	\$208.24	\$198.58	\$227.68	\$196.24	\$223.05
Interest	\$19.89	\$20.97	\$21.42	\$21.37	\$10.61	\$17.19	\$19.45
Mach and Bldg Depreciation	\$49.93	\$58.07	\$58.82	\$59.41	\$45.86	\$59.21	\$58.45
Net Return	-\$40.89	-\$43.87	-\$52.91	-\$69.59	-\$33.55	-\$62.25	-\$53.00
Cost of Prod - w/ Labor & Mgt	\$3.56	\$3.58	\$3.62	\$3.66	\$3.51	\$3.67	\$3.65
Mach Cost/Ac	\$134.69	\$144.25	\$146.83	\$141.99	\$124.55	\$142.69	\$144.45



**Soybean Enterprise**

Sort	All Fields	Swath Control	Rate Fertilizer	Variable Rate Seed	Crop Soybeans	Glyphosate Resistant	Drainage Pattern Tile
Number of Farms	1210	290	84	52	96	107	100
Yield	47.12	47.92	52.81	52.48	42.23	46.53	53.67
Seed	\$58.21	\$60.22	\$57.01	\$59.41	\$56.98	\$58.57	\$55.95
Fertilizer	\$19.48	\$21.28	\$20.60	\$22.08	\$22.44	\$21.60	\$21.13
Chemical	\$40.62	\$42.78	\$43.19	\$42.61	\$32.56	\$46.72	\$47.75
Fuel & Oil	\$14.32	\$14.30	\$15.59	\$16.64	\$13.85	\$14.53	\$14.77
Repairs	\$25.19	\$24.98	\$28.92	\$26.75	\$24.07	\$27.24	\$28.59
Rent	\$170.48	\$181.79	\$206.63	\$182.69	\$150.58	\$185.65	\$211.57
Interest	\$11.65	\$11.59	\$12.25	\$13.06	\$10.36	\$10.98	\$12.32
Mach and Bldg Depreciation	\$29.74	\$32.70	\$35.24	\$33.42	\$30.97	\$30.44	\$37.02
Net Return	\$15.09	-\$1.30	\$13.50	\$14.06	\$4.01	-\$17.97	\$9.55
Cost of Prod - w/ Labor & Mgt	\$9.20	\$9.52	\$9.26	\$9.15	\$9.42	\$9.98	\$9.35
Mach Cost/Ac	\$82.35	\$84.61	\$93.21	\$91.87	\$77.72	\$85.61	\$98.45



**Crop Enterprise Analysis for Corn on Rented Acres  
Statewide Special Sort for Crops  
Farm Business Management Database  
Tillage Alternatives**

	Avg. of All Farms	Chisel / Reduced Till	No Till	Strip Till	Ridge Till	All Tillage Row Width 19- 25"
Number of farms	1245	821	14	20	8	137
Yield per acre (bu.)	203.37	206.89	195.59	184.97	217.25	189.70
Value per bu.	3.20	3.21	3.23	3.08	3.27	3.11
Gross return per acre	667.84	679.73	638.74	597.18	725.41	625.24
<b>Direct Expenses</b>						
Seed	111.09	112.87	103.93	103.59	117.74	101.69
Fertilizer	114.02	114.03	116.08	113.98	123.41	105.22
Crop chemicals	35.66	35.91	29.65	30.70	31.18	31.36
Crop insurance	19.91	20.33	16.68	16.88	17.24	20.76
Drying expense	19.87	20.01	32.35	16.55	21.22	17.39
Storage	2.29	2.54	1.03	0.09	5.72	0.91
Fuel & oil	24.13	24.18	16.21	22.47	20.45	24.44
Repairs	41.83	42.17	26.11	40.81	44.04	41.33
Custom hire	10.81	10.61	4.34	8.14	12.08	5.06
Hired labor	4.69	5.03	21.25	3.52	5.58	8.18
Land rent	196.73	203.44	158.07	148.28	199.59	174.13
Machinery leases	4.57	3.88	25.27	0.17	7.71	4.61
Utilities	1.50	1.75	2.79	1.67	4.65	0.54
Hauling and trucking	2.28	1.98	6.23	0.15	2.11	1.33
Marketing	2.06	2.15	1.88	1.25	4.77	1.01
Operating interest	13.40	14.37	9.46	8.43	7.22	14.13
Miscellaneous	2.39	2.49	3.23	3.16	3.84	3.79
Total direct expenses per acre	607.64	617.91	574.55	519.99	628.65	555.88
Return over direct exp per acre	60.21	61.82	64.19	77.18	96.77	69.36
Total overhead expenses per acre	101.49	102.97	78.08	102.39	104.42	115.20
Total dir & ovhd expenses per acre	708.73	720.88	652.64	622.38	733.07	671.07
Net return per acre	(40.89)	(41.15)	(13.90)	(25.21)	(7.66)	(45.84)
<b>Cost of Production</b>						
Total direct expense per bu.	2.99	2.99	2.94	2.81	2.89	2.93
Total dir & ovhd exp per bu.	3.48	3.48	3.34	3.36	3.37	3.54
Less govt & other income	3.33	3.33	3.17	3.12	3.26	3.31
With labor & management	3.56	3.56	3.41	3.42	3.55	3.56
Net value per unit	3.22	3.22	3.26	3.16	3.27	3.13
Machinery cost per acre	134.69	134.88	117.50	123.01	148.55	133.00

