

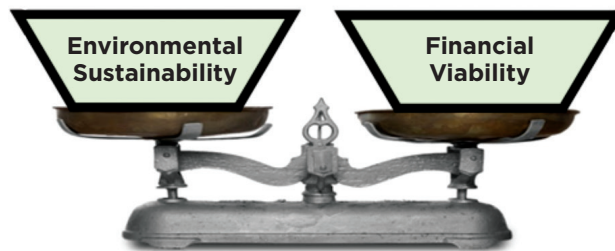
INFLUENCE OF INTENSIFIED ENVIRONMENTAL PRACTICES ON FARM PROFITABILITY



APRIL | 2021



EXPLORING THE IMPACT OF SELECTED PRACTICES ON FARM ECONOMICS



Farmer Balancing Act

There are costs and benefits from implementing farm practices that exceed normal practices in supporting environmental sustainability. Decisions to implement new practices are impacted by the balancing act of Environmental Sustainability and Financial Viability, as shown to the right.

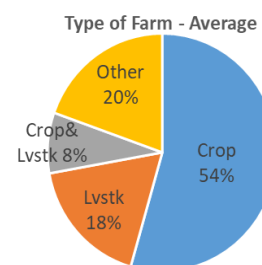
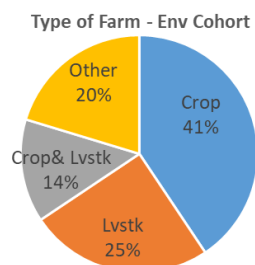
Early Impressions

In 2019, the first year of this report, Water Quality certified farms through the Minnesota Department of Agriculture were identified as the “Environmental Cohort” for comparison to the MN Farm Business Management (FBM) Database. This second year of data continues as a broad overview of selected financial and crop production factors that provide a “window” into longer term comparisons. This report provides “Early Impressions” and is not intended to suggest that a long term trend is represented in this report.

Demographics

The MN FBM state database includes complete financial data from 2,246 producers who participate in the Minnesota State Farm Business Management Education program. The “Environmental Cohort” consists of 64 of those producers in 2020, up from 53 in 2019. The chart below illustrates that Water Quality certified producers represent a similar demographic to that found in the FBM state database, suggesting that the decision to become certified is more likely a management decision than a situational decision. This report focuses more on cost comparisons than earnings comparisons for that reason.

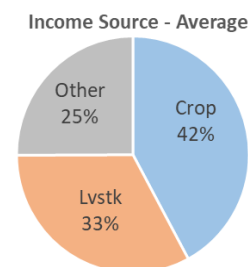
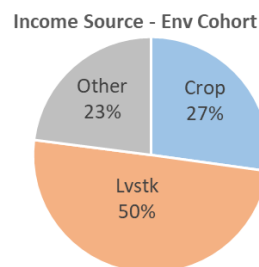
Demographics	2019		2020	
	Environmental Sort	Benchmark Average	Environmental Sort	Benchmark Average
Number of Farms	53	2167	64	2246
Total Crop Acres per Farm	666	775	774	786
Total Crop Acres/Cohort	35,298	1,679,425	49,536	1,765,356
Age of Operator	49.0	47.1	48.1	46.9
Years Farming	24.8	23.0	23.3	22.7
Beginning Farmers	3	405	9	486
Veterans	2	46	2	49



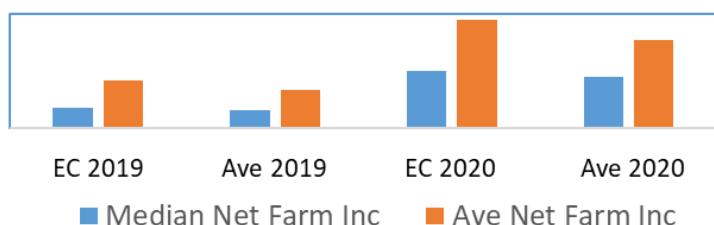
Financials At-A-Glance

A limited number of factors were selected to provide a brief financial overview for this report. Those factors are taken from the Income Statement and the approved Farm Financial Standards Measures, as shown below:

Income Statement	2019		2020	
	Environmental Sort	Benchmark Average	Environmental Sort	Benchmark Average
Gross Cash Farm Income	\$801,282	\$744,078	\$997,573	\$834,622
Total Cash Farm Expense	\$658,545	\$645,752	\$751,565	\$697,094
Net Cash Income	\$142,737	\$98,326	\$246,008	\$137,529
Inv Chg, Deprec, Cap Sales	-\$49,916	-\$24,683	-\$33,116	\$35,158
Average Net Farm Income	\$92,821	\$73,643	\$212,892	\$172,687
Median Net Farm Income	\$40,008	\$33,377	\$111,406	\$100,684



Net Farm Income



The Environmental Cohort generated more revenue and incurred more expenses compared to the Average farm 2019 and 2020. The Net Farm Income for the Environmental Cohort was \$212,892 in 2020, slightly above the \$172,687 for the Average farm. Median Net Farm Income was also slightly higher \$111,406, compared to \$100,684 for the Average.

Farms in the Environmental Cohort had a stronger Term Debt Coverage Ratio for the second year, at 3.22, compared to the overall database, at 2.61. Both ratios were significantly higher than 2019, resulting from increased profitability in each group of producers. Operating Expense Ratio also improved significantly for both groups, with the Environmental

Selected Measures	2019		2020	
	Environmental Sort	Benchmark Average	Environmental Sort	Benchmark Average
Working Capital as % of GFI	25.1%	23.3%	43.3%	31.8%
Farm Debt to Asset Ratio	43.0%	46.0%	37.0%	45.0%
Term Debt Coverage Ratio	1.61	1.37	3.22	2.61
Operating Expense Ratio	75.3%	79.3%	68.5%	71.0%

Cohort at a level of 68.5%, compared to 71.0% for the overall Average. Increased revenue enabled producers to increase Working Capital as demonstrated by the increases in Working Capital as a percent of Gross Farm Income (GFI).

Crop Enterprises At-A-Glance

A quick look at some of the costs potentially impacted by the production practices used by each group illustrates some variations. On a per acre basis in 2019, each group had two costs that were lower. In 2020, the Environmental Cohort had three costs that were lower than the Average.

Selected Costs	2019		2020	
	Environmental Sort (EC)	Benchmark Average (Ave)	Environmental Sort (EC)	Benchmark Average (Ave)
Seed Cost / crop acre	\$74.50	\$73.05	\$72.64	\$79.41
Fertilizer Cost / crop acre	\$70.26	\$73.75	\$69.58	\$81.28
Chemical Cost / crop acre	\$32.64	\$37.87	\$32.45	\$42.73
Fuel and Oil Cost / crop acre	\$33.29	\$32.68	\$30.24	\$29.09

Traditional crop enterprises were again selected from the primary crops raised by producers in each group. Expenses and management factors have been reduced to the items listed below for each crop. The table to the left includes data

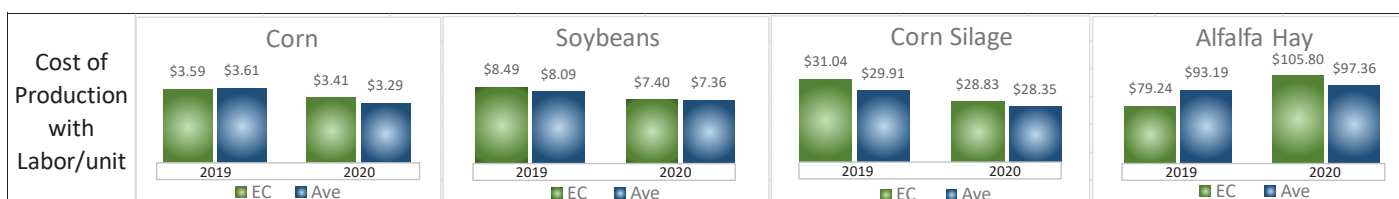
Crop Enterprises Owned & Rented Acres Combined (2020)	Corn		Corn with cover crop		Soybeans		Soybeans with cover crop	
	EC	Ave	EC	Ave	EC	Ave	EC	Ave
Number of Farms	45	1,447	11	20	38	1,313	7	14
Yield per acre	190.9	199.6	162.2	186.0	53.5	52.6	44.9	49.7
Seed Expense/acre	\$99.96	\$104.28	\$98.44	\$97.36	\$54.72	\$53.69	\$48.40	\$49.42
Fertilizer Expense/acre	\$125.10	\$125.76	\$112.26	\$132.87	\$28.29	\$20.53	\$26.56	\$26.63
Chemical Expense/acre	\$37.17	\$35.77	\$38.46	\$33.11	\$45.83	\$43.09	\$40.77	\$41.13
Fuel & Oil Expense/acre	\$17.74	\$21.48	\$15.48	\$16.09	\$10.99	\$13.46	\$12.01	\$11.26
Total Dir & Ovhd Exp/acre	\$695.88	\$697.03	\$660.43	\$711.56	\$454.33	\$430.48	\$437.39	\$452.44
Net Return/acre	\$129.06	\$167.18	\$63.09	\$109.31	\$145.78	\$155.54	\$86.61	\$95.18
Machinery Cost/acre	\$156.59	\$140.19	\$161.95	\$153.71	\$97.99	\$89.39	\$99.44	\$90.26

for traditional production practices and the addition of cover crops with corn and soybeans. 2020 is the first year for sharing this comparison data. This table suggests that more annual data is necessary to provide information that may be used for comparison efforts.

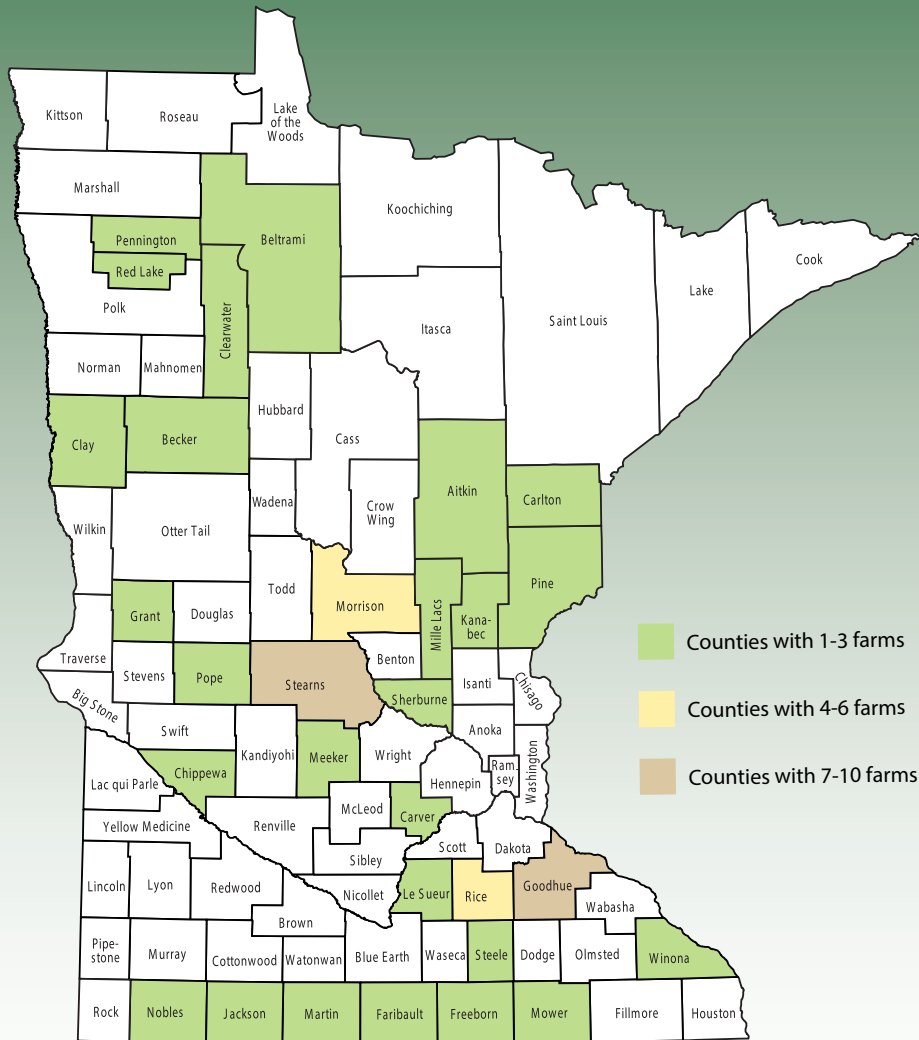
Yields for corn silage and alfalfa hay were similar in 2019 and 2020, with the Average having an edge in alfalfa hay in 2020. Selected production costs varied by group and by year, with the Environmental Cohort showing lesser Total Direct and Overhead expenses per acre each year. Other factors in the table showed variations as well, with the Average having stronger factors in corn silage while the Environmental Cohort factors were stronger in alfalfa hay.

Crop Enterprises Owned & Rented Acres Combined	Corn Silage				Alfalfa Hay			
	2019		2020		2019		2020	
	EC	Ave	EC	Ave	EC	Ave	EC	Ave
Number of Farms	16	354	17	369	16	294	18	331
Yield per acre	20.4	20.5	21.8	22.8	4.7	4.5	4.0	4.4
Seed Expense/acre	\$97.54	\$109.86	\$105.57	\$100.75	NA	NA	NA	NA
Fertilizer Expense/acre	\$76.66	\$96.76	\$85.51	\$92.25	\$42.44	\$51.22	\$53.05	\$50.42
Chemical Expense/acre	\$35.88	\$38.50	\$37.15	\$36.38	\$3.01	\$5.51	\$3.95	\$8.57
Fuel & Oil Expense/acre	\$30.64	\$38.55	\$32.43	\$28.65	\$28.30	\$37.53	\$23.26	\$23.66
Total Dir & Ovhd Exp/acre	\$651.96	\$652.35	\$647.34	\$680.07	\$391.01	\$419.85	\$418.74	\$426.34
Net Return/acre	\$40.57	\$96.29	\$147.65	\$175.48	\$273.26	\$259.23	\$192.97	\$179.62
Machinery Cost/acre	\$198.66	\$204.39	\$231.14	\$211.97	\$158.05	\$166.55	\$174.95	\$167.15
Cost of Prod w Lbr/unit	\$31.04	\$29.91	\$28.83	\$28.35	\$79.24	\$93.19	\$105.80	\$97.36

As an initial trend comparison, below is the 2-year data for Cost of Production with Labor per unit for each of the four primary crops in this report. The Environmental Cohort (EC) and the State Average (Ave) are listed in each chart.



This data demonstrates that a longer term trend is needed to effectively make informed comparisons. Information shared in this report provides foundational data for future efforts as data collection enters into the 3rd and 4th year.



SOURCES OF DATA

The 64 producers who provided data for this report have all earned a Minnesota Water Quality Certification from the MN Department of Agriculture. Those producers are located in 30 of Minnesota's 87 counties. Those counties are highlighted on the map.

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