
2021 Ohio Farm Business Summary

Dairy Enterprise Analysis
with Benchmark Reports



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

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For information on participating in the Ohio Farm Business Analysis program to analyze your farm's performance, visit our web site at: <http://farmprofitability.osu.edu/>

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2021 Ohio Farm Business Summary

Dairy Enterprise Analysis

Table of Contents

| | Pages |
|---|--------------|
| Overview | 3-16 |
| Dairy Summary Introduction | 3-8 |
| 2021 Weather Summary | 9-13 |
| Crop Yields and Prices | 14 |
| Participating Farms Map | 14 |
| Dairy Enterprise Analysis and Benchmark Reports Explanation | 15-16 |
| Dairy Enterprise Analysis..... | 17-28 |
| Average of all Farms and High 20%, Per Cow..... | 17 |
| Benchmark Report, Per Cow | 18 |
| Average of all Farms and High 20%, Per Cwt..... | 19 |
| Benchmark Report, Per Cwt..... | 20 |
| Farms Sorted by Enterprise Size, Per Cow | 21 |
| Farms Sorted by Enterprise Size, Per Cwt | 22 |
| Benchmark Report, Corn Silage on Owned Land | 23 |
| Benchmark Report, Corn Silage on Cash Rented Land | 24 |
| Benchmark Report, Hay, Alfalfa, All Tenures | 25 |
| Benchmark Report, Hay, Mixed, All Tenures | 26 |
| Benchmark Report, Rye Silage, All Tenures | 27 |
| Appendix 1 | 28 |

2021 Ohio Dairy Enterprise Analysis Summary

This document contains summary information for 16 Ohio dairy farms that participated in the 2021 Ohio Farm Business Analysis and Benchmarking Program. These farms provided detailed financial and production information in order to complete a whole farm financial analysis and enterprise analysis for their dairy and crop enterprises. Numerous internal accuracy checks must be met for each farm's data to be included in this summary. These 16 farms met all of these standards.

Data for 7,155 cows and their replacements are included in this year's summary. Herd size ranged from 108 to more than 1,200 cows with six herds milking more than 500 cows. Fifteen of the dairy enterprises are managed conventionally, and one is managed organically. All data in this publication are from 15 conventionally managed herds.

Milk Prices

2021's milk prices were higher than 2020's, and a welcome return to a more stable monthly price following the wild swings due to the Covid-19 Pandemic (Table 1). Most Ohio dairy farmers market their milk in Federal Order 33, although some milk does flow into the eastern and southern Orders. The F.O. 33 Statistical Uniform Price for 2021 was \$16.99 per hundredweight (cwt.), \$1.14 per cwt. higher than 2020, and \$0.22 lower than 2019's \$17.21 per cwt.

Table 1: 2021 monthly and annual average per cwt. milk prices for Federal Order 33 and USDA Dairy Margin Coverage Program announced margins.

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Avg |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Class III | 16.04 | 15.75 | 16.15 | 17.67 | 18.96 | 17.21 | 16.49 | 15.95 | 16.53 | 17.83 | 18.03 | 18.36 | 17.08 |
| PPD | -1.08 | -0.84 | -0.47 | -1.34 | -1.53 | 0.60 | 0.76 | 0.90 | 0.59 | -0.13 | 0.50 | 0.99 | -0.09 |
| SUP | 14.96 | 14.91 | 15.68 | 16.33 | 17.43 | 17.81 | 17.25 | 16.85 | 17.12 | 17.70 | 18.53 | 19.35 | 16.99 |

Class III - Class III milk price for milk with 3.5% butterfat and 2.99% protein

PPD - Producer Price Differential

SUP - Statistical Uniform Price

Find more information about Federal Milk Marketing Order 33 at <http://www.fmmaclev.com/>

The Producer Price Differential averaged a negative \$0.09 per cwt. for the year, the second lowest in 20 years, but looking quite good in comparison to the record negative \$2.31 per cwt received in 2020. The PPD represents the calculated difference in the price received for milk bottled and sold as fluid milk (Class I milk) and the value of non-Class I (Classes II, III, and IV) milk pooled on the federal order. These dollars are shared among all Grade A dairy farmers marketing milk in Federal Order 33 regardless of how their milk is utilized.

The Class III price plus or minus the PPD are summed, resulting in an average Statistical Uniform Price (SUP) of \$16.99 per cwt. in 2021. The SUP represents the base price every dairy farm selling Grade A conventional milk in Federal Order 33 would receive (for milk with 3.5% fat and 2.99% protein), plus or minus component, somatic cell, and/or any quality or quantity adjustments.

The average milk price received by all herds in the 2021 Ohio Summary was \$18.72 per cwt., higher than 2020's \$18.38, as well as 2019's average price received of \$18.62 per cwt.

2021 Analysis Results

Herd Size

The 15 conventional herds averaged 476 cows, with herd size ranging from 108 to 1,290 cows (Table 2). While the average numbers for all herds together are interesting, they have limited value when comparing performance of an individual herd with this broad range of herd sizes. To provide meaningful information for herds of different sizes, enterprise summaries per cow and per cwt. are included in this summary for herds with 100 to 200 cows, 200 to 500 cows, and herds with more than 500 cows.

Table 2: Average performance of 15 Ohio dairy farms, range, and average performance of the high 20% sorted by net return per cow, selected factors, 2021.

| | Average of 15 Farms | Range | Average of High 20% ¹ |
|---|---------------------------|------------------------|-------------------------------------|
| Number of cows | 476 | 108-1,290 | 477 |
| Milk sold per cow | 27,344 | 18,338 – 32,659 | 30,211 |
| Feed cost per cwt of milk² | \$9.95 | \$ 8.31 – \$14.53 | \$9.13 |
| Direct + overhead cost per cwt | \$18.55 | \$ 27.18 – \$15.08 | \$15.30 |
| Total cost per cwt w/rev. adj.³ | \$16.09 | \$ 22.60 – \$12.41 | \$13.23 |
| Net return per cow⁴ | \$776.28 | (\$749.25)– \$2,018.88 | \$1,602.66 |

¹ Farms sorted by net return per cow, 3 farms.

² Includes feed costs for mature cows and raised replacements excluding custom raised heifers if feed is included in the custom raising charge. All raised feed is valued at total direct and overhead cost of production.

³ Total direct and overhead cost per cwt. including revenue adjustments (income from cull cows, bull calf and other animal sales, DMC indemnities, government payments, patronage dividends), before a labor and management charge.

⁴Before a labor and management charge.

Feed Costs

Feed costs are consistently the highest single direct or indirect cost of producing milk. Feed costs represent the total cost of feeding milking cows, dry cows, and the replacement heifer herd. Feed costs include accrual adjusted purchased feed expenses (the cost of all purchased feed fed in 2021 whether it was pre-paid in 2020, paid for in 2021, or not paid for until 2022) as well as the total direct and overhead cost per unit (ton, bu.) of raised feed fed.

If any feed fed in 2020 was paid for in 2021, or feed was paid for in 2021 which was not fed until 2022, these costs *are not* included in the accrual adjusted cost of feed for 2021.

Capturing the cost of shrink: Feed costs also include the cost of shrink, whether it is feed lost in the harvesting process, during storage, or shrink that occurs during the mixing and feeding of diets to the animals. Farms that complete enterprise analysis for their crop

enterprises report total yields. Total costs of producing the crop are divided by those reported yields to obtain the cost per bushel or ton. Then total feed fed for each raised crop is calculated as follows, capturing any storage or feeding losses:

$$\text{Feed Fed} = \text{Beginning Inventory} + \text{Feed Bought} + \text{Feed Grown} - \text{Feed Sold} - \text{Ending Inventory}$$

The only feed cost that might not be included in total feed costs is any feed cost embedded in the cost of custom heifer rearing for a few farms. While this will slightly understate feed costs, it is included in the total per cwt. or per cow cost calculations.

Feeding salable milk to calves: Some farms feed fresh milk to their calves. If any of the milk fed to the calves could have been sold, the quantity and value of that milk is added to the milk sold per cow, and then charged as a feed expense at the average price per cwt received by the farm for milk sold. A charge is not included for milk fed to calves that was not salable such as colostrum, transition milk, or milk from treated cows.

Feed costs vs. Net Return per Cow: Feed costs are the number one expense for dairy farms, averaging \$9.95 per cwt, or 53.6% of total direct and overhead costs for all farms, and \$9.13 per cwt, or 59.7% of total direct and overhead costs for the high 20% of herds. Monitoring and controlling feed cost is clearly an important management function on dairy farms.

Improved Net Returns per Cow

In 2021, net return per cow improved slightly, increasing from \$759 per cow in 2020 to \$776 per cow (Table 3). Average net returns per cow from 2017 through 2021 are shown in Table 2 for all herds and the high 20% herds, those herds that generated the highest net returns in each analysis year.

Net returns represent the return to the owner's labor and management as well as the capital invested in the dairy enterprise. The only non-cash charge in the dairy enterprise's expenses is a share of the annual depreciation charge for machinery and equipment (7%), titled vehicles (15%) and buildings and improvements (5%) for the raised dairy feed and dairy enterprises. This charge represents the annual loss in value (cost basis) due to use, normal wear and tear, and age.

Farms with low or negative net returns may not be able to make all scheduled principal payments and generate sufficient dollars to cover all operating expenses and family living needs. Consecutive years of low and/or negative net returns will cause the farm's working capital and net worth to decline.

Table 3: Comparison of total cost of production (COP) per cwt. and net return per cow, average and high 20% conventional Ohio dairy farms, 2017 – 2021

| | 2017 | 2018 ³ | 2019 ³ | 2020 ³ | 2021 ³ | 5 Year Avg |
|--|---------|-------------------|-------------------|-------------------|-------------------|------------|
| Average of all herds: | | | | | | |
| Direct & overhead COP/cwt | \$18.73 | \$18.45 | \$17.62 | \$19.30 | \$18.55 | \$18.53 |
| Net return per cow¹ | \$424 | (\$155) | \$250 | \$759 | \$776 | \$411 |
| Average of high 20%² | | | | | | |
| Direct & Overhead COP/cwt | \$17.69 | \$15.48 | \$17.24 | \$18.54 | \$15.30 | \$16.85 |
| Net return per cow¹ | \$802 | \$748 | \$897 | \$1,156 | \$1,603 | \$1,041 |

¹ Before labor and management charge.

² Farms sorted by net return per cow.

³ Conventional herds only.

These 15 herds generated an average net return of \$776 per cow. Thirteen herds generated positive net returns per cow, averaging \$974 per cow. Only two herds generated negative net returns, consistent with what was observed in 2020.

We typically see a large range in net return per cow among the farms in the analysis. 2020 was no exception with a difference of more than \$2,700 per cow (Table 2), ranging from a loss of \$749 per cow to a positive net return of more than \$2,000 per cow. This wide range in net return per cow was \$800 more than the 2020 analysis.

A warm and modestly wet year, 2021 is the **5th warmest and 32nd wettest** year on record (1895- 2021; Fig 1). After cold conditions in February, the growing season got off to a mild and dry start, allowing ample opportunity for fieldwork and planting. Rainfall was timely for most during summer, with heavy rainfall scattered across the state. Wet conditions continued into fall for northwest counties but remained seasonal elsewhere, allowing for decent harvest conditions. Figure 2 shows the county-based rankings for temperature and precipitation, indicating Summit and Stark experienced their warmest year on record, with well above average precipitation across northwest Ohio. Below is a seasonal climate summary for 2021. Figure 3 shows the seasonal temperature differences compared to long-term averages (1991-2020), and Figure 4 shows the seasonal total precipitation.

Winter (December – February)

The winter mean temperature for 2021 was average, ranking as the **53rd warmest winter** on record for Ohio. This was the result of

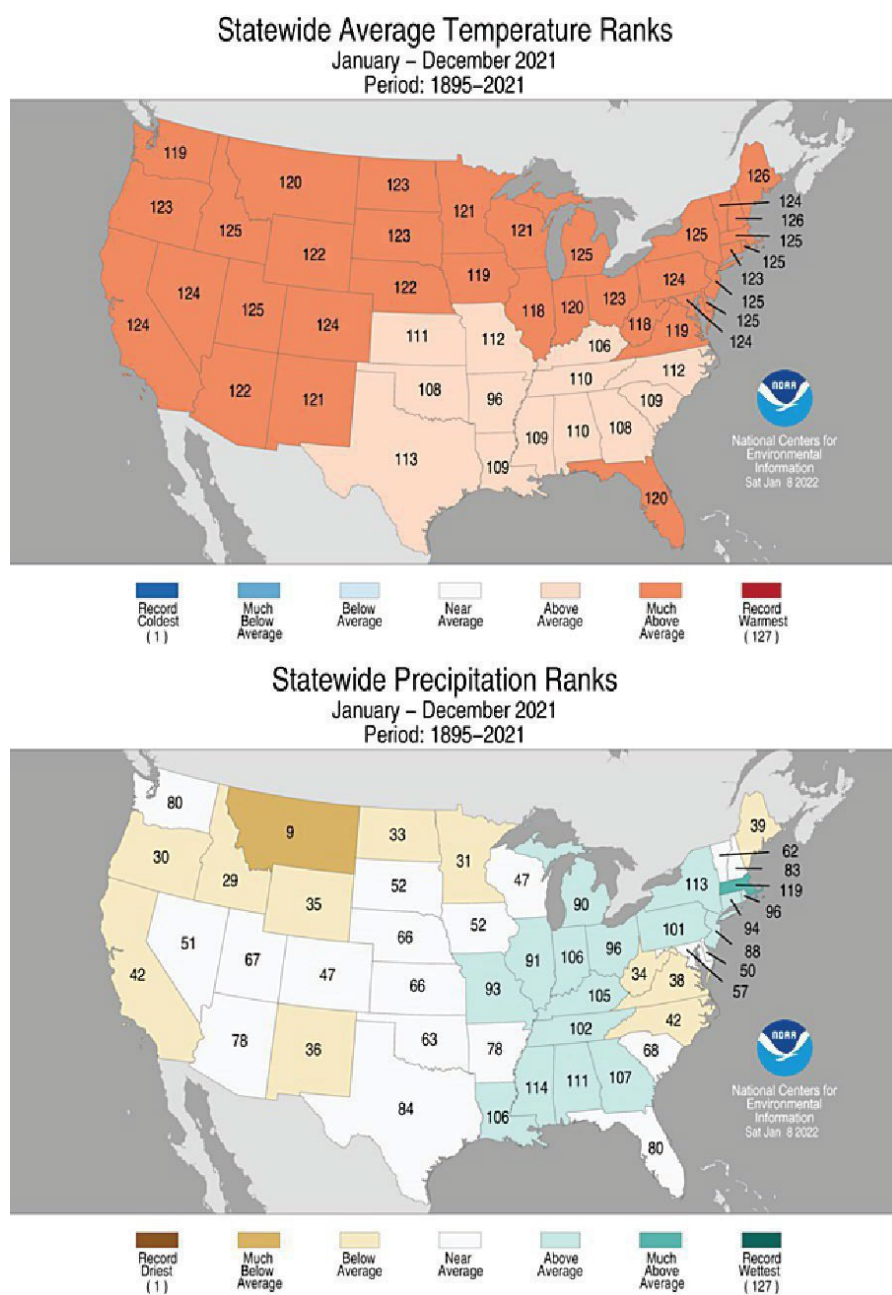


Figure 1: Statewide temperature and precipitation rankings for 2021 based on the period 1895-2021. Figures courtesy of the National Centers for Environmental Prediction.

wild temperature swings however, with one of the warmest Decembers on record to a cold February. Temperatures ended the season about 1-2°F below average across southwest counties. Precipitation was well below average, ranking as the **23rd driest winter** on record. Counties in northwest Ohio picked up less than 5 inches of liquid-equivalent precipitation and below average snowfall. The northwestern half of the state ran 50-75% of normal precipitation for the season.

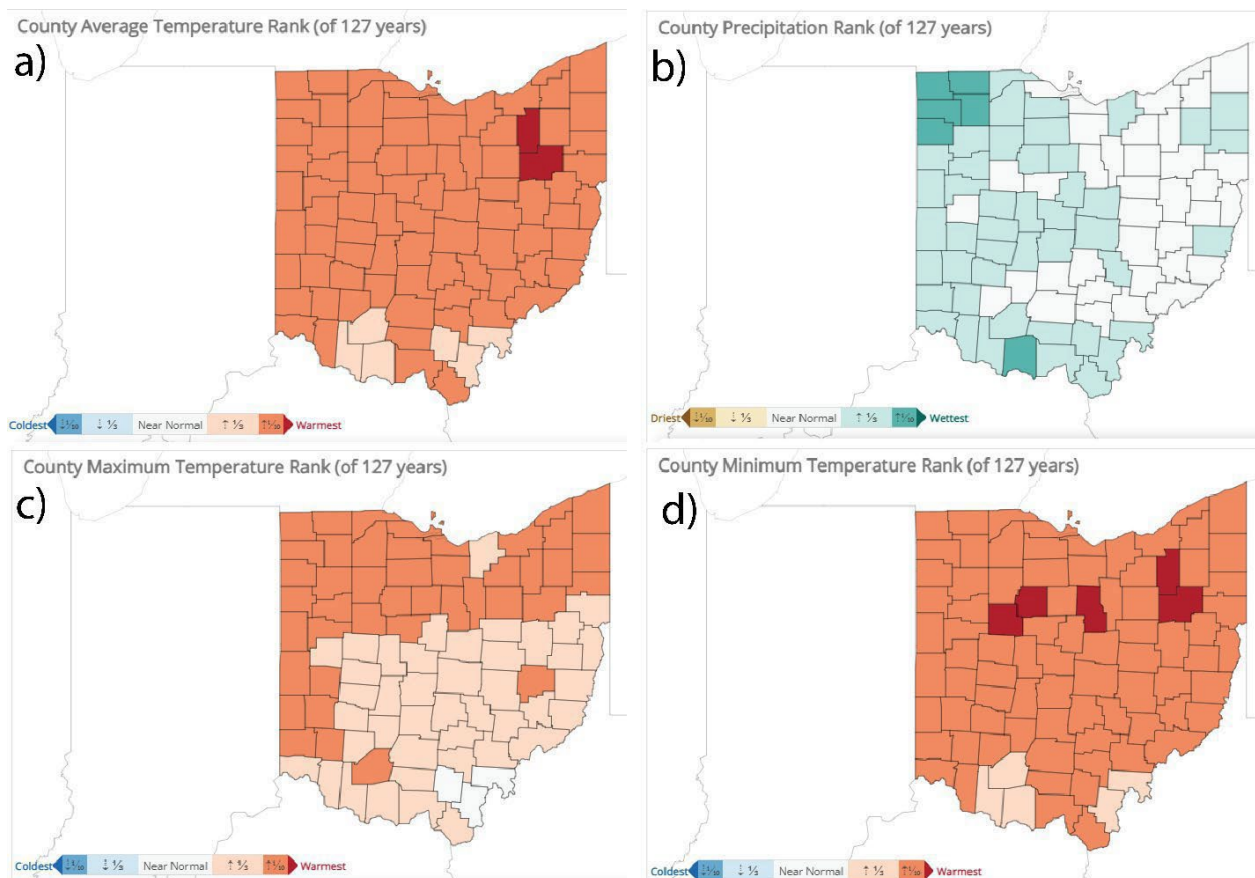


Figure 2: 2021 county rankings for a) average temperature, b) total precipitation, c) average daily maximum temperature, and d) average daily minimum temperature. Figures courtesy of the National Centers for Environmental Prediction.

Spring (March – May)

March-May 2021 ranks as the **25th warmest and 40th driest** for the state. Like 2020, March 2021 was one of the warmest on record (ranks as the **12th warmest March**), with April remaining above average but May running below average. The warm March and April conditions pushed Growing Degree Days well ahead of schedule, advancing seasonal pest infiltration like alfalfa weevil across the area a bit early. Precipitation was on the light side, with 5 to 10 inches falling across the state. It was the driest spring since 2013 for Ohio, but timely rains allowed for strong emergence and a good start to the growing season.

Summer (June-August)

Summer 2021 was a warm and wet season, ranking as the **13th warmest and 15th wettest** summer on record. Temperatures averaged 1-3°F above the long-term mean. Of note, overnight low temperatures were particularly warm (tied with 1995, 2005, and 2010 as the 2nd warmest). July was the 13th wettest July on record with frequent wildfire smoke-filled skies that helped limit incoming solar radiation and lead to a cooler than average month for Ohio. The state picked up between 10-20 inches of rainfall (statewide average of 14.15 inches or 117% of normal), about 40% of this falling in July. Drought coverage was limited to pockets of abnormally dry conditions scattered across the state.

Fall (September – November)

Fall 2021 was one of the warmest on record, ranking as the **6th warmest and 35th wettest** on record. A warmer than average September was followed by the **warmest October on record**. This record warmth was driven strongly by overnight lows, averaging 51.3°F or 8.5°F above normal. This significantly delayed first freeze, with much of the state not experiencing the first 32°F temperature until November. Precipitation varied widely across the state. Defiance, Fulton, Henry, Lucas, Williams, and Wood Counties all experienced their wettest October on record with 7-9 inches of rain across the area, more than double the normal monthly rainfall. Conditions were much drier in November, helping much of the state complete fall harvest and activities.

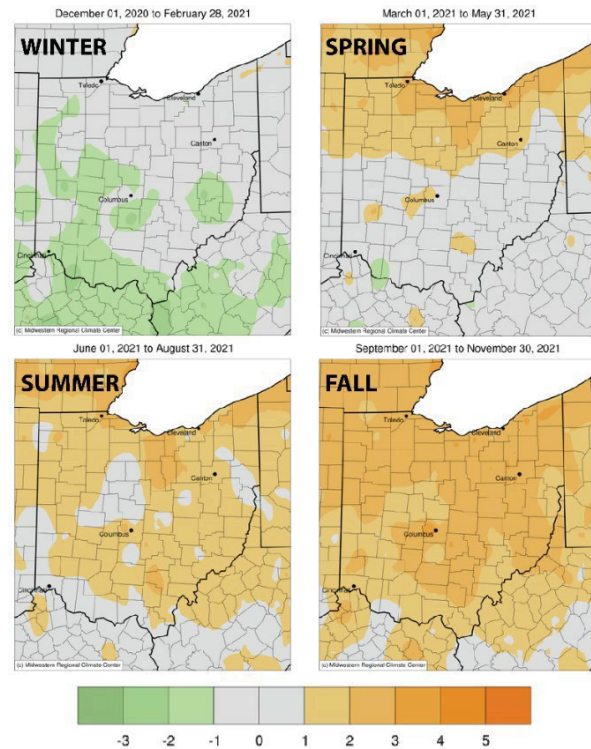


Figure 3: Seasonal temperature departures (°F) from long-term seasonal means (1991-2020). Figure courtesy of the Midwestern Regional Climate Center.

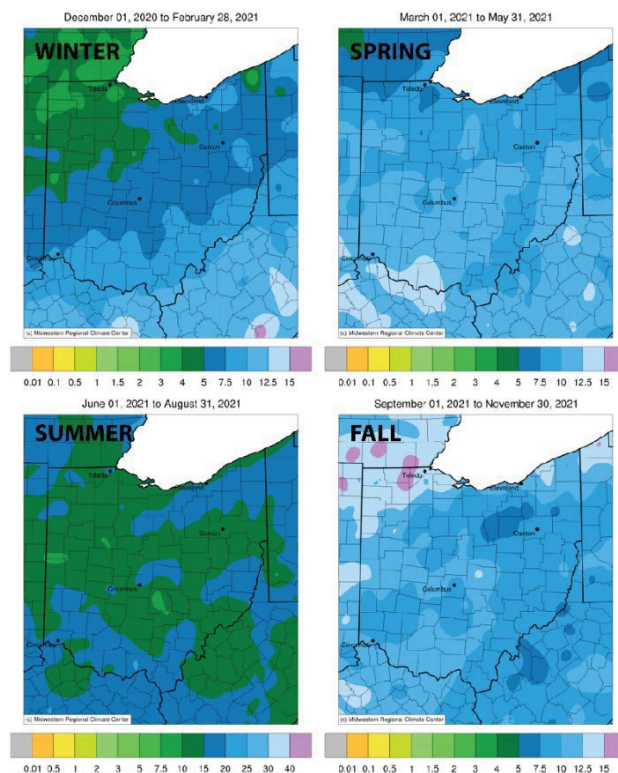
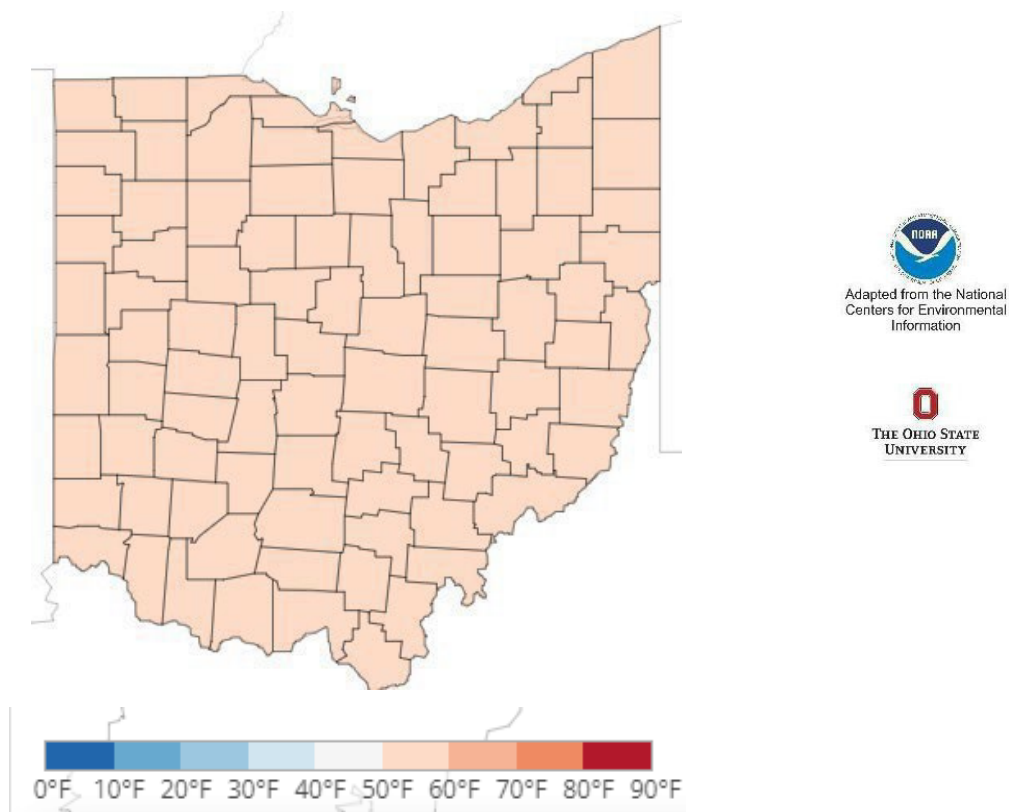


Figure 4: Seasonal precipitation totals (inches) for 2021. Figure courtesy of the Midwestern Regional Climate Center.

Weather Impacts on an Individual Farm's Analysis

Each year, no matter the statewide weather conditions, at least one of the farms participating in the analysis experiences local weather conditions that cause a steep decline in crop yields and/or late or prevented planting. This may cause farms that are otherwise profitable to experience a year of declines in working capital resulting from a decline in crop sales and inventories as well as lower profitability resulting from reduced crop sales. Whether or not a farm typically sells crops, lower crop yields increase the crops' cost of production as total costs are divided by lower yields, resulting in higher feed costs. This situation is then compounded by the need to purchase additional feed to compensate for lower raised feed production.

2021 Ohio County Precipitation and Temperature Rankings



Source: Byrd Polar and Climate Research Center/Polar Meteorology Group

County Temperature Ranks

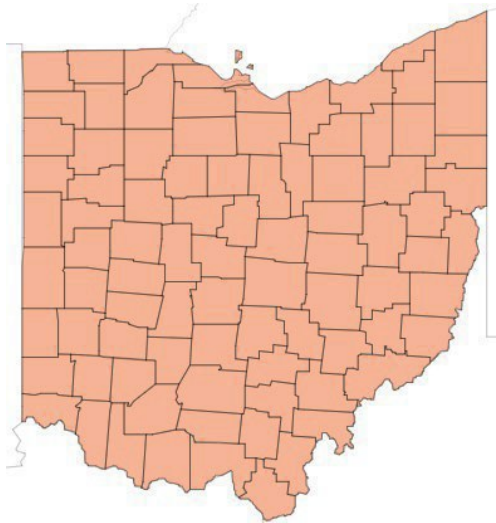
Average Temperature


Adapted from the National
Centers for Environmental
Information


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Maximum Temperature




Minimum Temperature





Record
Coldest


Much
Below
Average


Below
Average


Near
Average


Above
Average


Much
Above
Average


Record
Warmest

Source: Byrd Polar and Climate Research Center/ Polar Meteorology Group

Crop Yields and Prices

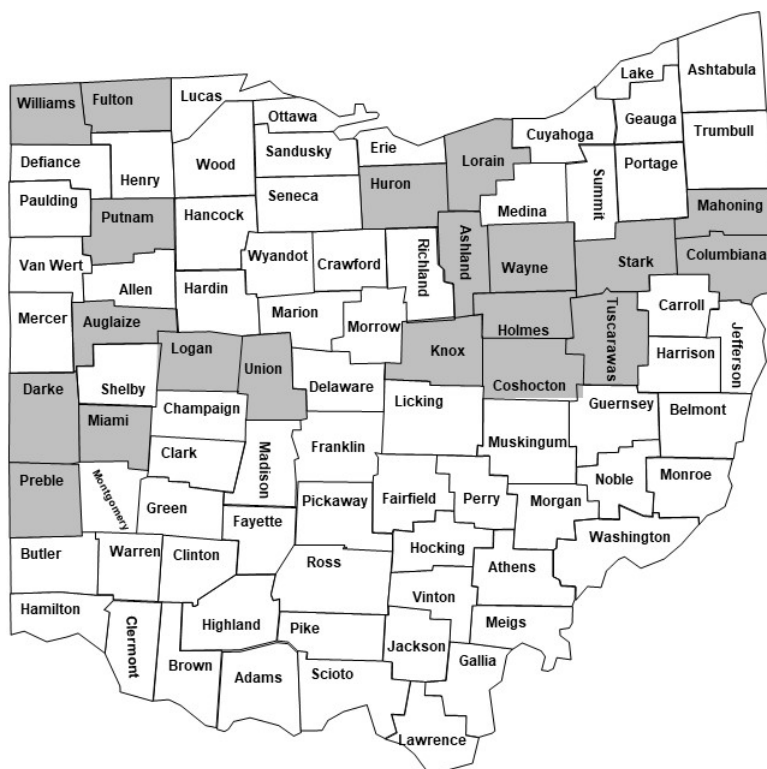
Table 4: Ohio Crop Yields and Marketing Year Prices as reported by the USDA National Agricultural Statistics Service in the Ohio Annual Bulletin (August 2022)

| | Corn Yield bu/acre | Corn Price \$/bu ¹ | Soybean Yield bu/acre | Soybean Price \$/bu ¹ | Wheat Yield bu/acre | Wheat Price \$/bu ¹ | Alfalfa Hay tons/ac | Alfalfa Hay \$/ton ¹ |
|------|-----------------------|----------------------------------|--------------------------|-------------------------------------|------------------------|-----------------------------------|------------------------|------------------------------------|
| 2015 | 153 | 3.80 | 50 | 9.16 | 67 | 4.57 | 2.9 | 158 |
| 2016 | 159 | 3.60 | 54.5 | 9.65 | 80 | 4.20 | 3.4 | 180 |
| 2017 | 177 | 3.61 | 49.5 | 9.62 | 74 | 4.90 | 3.2 | 175 |
| 2018 | 187 | 3.65 | 58 | 8.75 | 75 | 5.08 | 3.1 | 183 |
| 2019 | 164 | 4.20 | 49 | 9.15 | 56 | 5.25 | 2.9 | 208 |
| 2020 | 171 | 4.50 | 54 | 11.60 | 71 | 5.35 | 2.9 | 198 |
| 2021 | 193 | 5.45 | 56.5 | 13.10 | 85 | 6.35 | 3.1 | 173 |

¹Marketing year average price: <https://quickstats.nass.usda.gov/>

Participating Farms

Figure 2: Locations of the 32 Ohio farm businesses included in the 2021 summary.



Dairy Enterprise Analysis Reports

The Dairy Enterprise Analysis reports show the average physical production, gross margin over purchase costs, direct costs, overhead costs, and net returns on a per cow or per hundredweight (cwt) basis. Information is presented for the average of all farms and the “High 25%” sorted by net return per cow.

Gross Margin is the accrual gross value added by the enterprise. It includes income from sale of offspring and livestock products, cull income, non-cash transfers to other enterprises, and the value of production used in the home or for feed. It also includes the value of the livestock inventory change from the beginning to the end of the year. Inventory changes are calculated using the cost-basis balance sheet values, and each farm’s per-head values for their breeding livestock inventories are held constant from the beginning through the end of the year. The cost of livestock purchased and the value of any animals transferred in are deducted from gross returns.

Net Return is the amount contributed by a unit of the enterprise toward operator labor, management, and equity capital. Any wages and benefits paid to the operator are removed from labor costs (and added to *Labor and Management Charge*) so that all farms are on equal footing.

Net Return over Labor and Management is the return remaining after compensating the operator for unpaid labor and management. This is the per-unit return to equity capital.

Labor and Management calculation:

Management is calculated as 5% of the Value of Farm Production (VFP)

Labor is valued at \$13.50 per hour for 3,000 hours annually (one operator)

The Value of Farm Production is the farm’s total income less the cost of purchased feed.

| | | |
|----------|---|-------------------|
| Example: | Management at 5% x \$950,000 VFP = \$47,500 | |
| | Labor of 3,000 hrs x \$13.50 | <u>= \$40,500</u> |
| | | \$88,000 |

Cost of Production shows the average cost per unit in each cost category.

Total direct and overhead expense per unit is the breakeven price needed to cover cash costs and depreciation.

With Other Revenue Adjustments is the breakeven price adjusted for cull sales, other offspring sales, the cost of replacement stock, and any other miscellaneous income. This assumes that some costs can be covered by these other income sources.

With Labor and Management is the final break-even price to provide a labor and management return for the operator(s).

Other Information contains both economic and technical efficiency measures for the enterprise.

Rounding of individual items for the report may cause minor discrepancies with the calculated totals.

How to Use Benchmark Reports

Benchmark reports follow each enterprise summary, both per cow, and per cwt. These reports include information for 39 income, expense, and efficiency measures from the dairy enterprise analyses.

Benchmark reports allow farms to compare their performance against other Ohio farms. Farms that complete an analysis receive benchmark reports personalized for their farm. These reports include their farm's dairy enterprise numbers in a "My Farm" column next to the Group Median column, and the corresponding percentiles are highlighted for each of the 39 items. Managers can quickly see where they are doing well and where they have opportunities for improvement.

The Benchmark reports are generated using the RankEm© software program from the University of Minnesota's Center for Farm Financial Management. Benchmark reports include the median value (half of the data points were higher, half of the data points were lower – which will frequently be at least slightly different from the average) for each of the 39 income, expense and efficiency measures. For each measure, the corresponding data is sorted from lowest to highest. Then the median value of for each 10% grouping of the data set is sorted into the 10%,20%, 30%...100% columns of the table.

Each line is calculated separately. In other words, the 10% column does not represent the bottom 10% of all farms, nor does the 100th percentile group include only the top performing farms. An individual farm may be in the 80th percentile for Gross Return, but in the 30th percentile for feed cost. Typically, a farm's values will be scattered in multiple percentile groups (columns) across the chart. Farms participating in the Ohio Farm Business Analysis program will receive personalized benchmark reports for the financial and enterprise analyses.

Hired Labor: Hired labor is an important expense for Ohio's dairy farms. It is included on the next to last line on the benchmark reports. It includes both direct and overhead labor costs. It is also included in total costs even though it appears below those items in the benchmark reports.

Utilities: Utilities are listed on line 16 of the benchmark reports. Ohio treats utilities as a direct expense to the dairy enterprise; Minnesota treats it as an overhead expense. While it is listed in these benchmark reports after total direct expenses, utilities are included in the direct expense total.

Machinery Leases: Not enough farms had machinery leases to include data on benchmark reports.

**Livestock Enterprise Analysis
(Farms Sorted By Net Return)**

Dairy -- Average Per Cow

| | <u>Avg. Of All Farms</u> | | <u>High 20%</u> | |
|--|------------------------------|-----------|-----------------|-----------|
| Number of farms | 15 | | 3 | |
| | Quantity | Value | Quantity | Value |
| Milk sold (hd) | 27,344.2 | 5,175.20 | 30,211.3 | 5,600.83 |
| Dairy Calves sold (hd) | 0.5 | 78.23 | 0.5 | 60.55 |
| Transferred out (hd) | 0.0 | 6.77 | - | - |
| Cull sales (hd) | 0.4 | 278.79 | 0.4 | 268.01 |
| Insurance income | | 1.61 | | - |
| Government payments | | 178.15 | | 140.13 |
| Other income | | 54.95 | | 110.20 |
| Purchased (hd) | 0.0 | -22.06 | - | - |
| Inventory change (hd) | 0.1 | 97.93 | 0.1 | 44.22 |
| Gross margin | | 5,849.56 | | 6,223.93 |
| Direct Expenses | | | | |
| Protein Vit Minerals (lb.) | - | 1,727.79 | - | 1,808.38 |
| Corn (bu.) | 67.3 | 240.97 | 117.5 | 391.72 |
| Corn Silage (lb.) | 26,061.3 | 467.21 | 20,262.8 | 300.10 |
| Hay, Alfalfa (lb.) | 1,586.3 | 87.78 | 2,005.6 | 108.31 |
| Other feed stuffs (lb) | 7,326.3 | 199.32 | 6,733.6 | 150.90 |
| Breeding fees | | 71.79 | | 71.95 |
| Veterinary | | 93.53 | | 90.14 |
| Supplies | | 136.10 | | 149.99 |
| Contract production exp. | | 115.64 | | 5.77 |
| Fuel & oil | | 80.42 | | 61.54 |
| Repairs | | 167.38 | | 115.72 |
| Custom hire | | 135.96 | | 79.75 |
| Hired labor | | 599.55 | | 493.72 |
| Utilities | | 114.42 | | 95.43 |
| Hauling and trucking | | 162.83 | | 197.95 |
| Marketing | | 91.47 | | 74.04 |
| Miscellaneous | | 130.47 | | 97.70 |
| Total direct expenses | | 4,622.64 | | 4,293.09 |
| Return over direct expense | | 1,226.91 | | 1,930.85 |
| Overhead Expenses | | | | |
| Interest | | 121.24 | | 74.54 |
| Mach & bldg depreciation | | 222.88 | | 167.28 |
| Miscellaneous | | 106.51 | | 86.36 |
| Total overhead expenses | | 450.63 | | 328.19 |
| Total dir & ovhd expenses | | 5,073.27 | | 4,621.27 |
| Net return | | 776.28 | | 1,602.66 |
| Labor & management charge | | 302.63 | | 451.43 |
| Net return over lbr & mgt | | 473.65 | | 1,151.23 |
| Cost of Production Per Cwt. Of Milk | | | | |
| Total direct expense per unit | | 16.90 | | 14.21 |
| Total dir & ovhd expense per unit | | 18.55 | | 15.30 |
| With other revenue adjustments | | 16.09 | | 13.23 |
| With labor and management | | 17.19 | | 14.73 |
| Est. labor hours per unit | | 41.57 | | 36.94 |
| Other Information | | | | |
| Number of cows | | 476.4 | | 476.7 |
| Milk produced per cow | | 27,356 | | 30,211 |
| Lbs of protein & fat per cow | | 394 | | 1,335 |
| Lb. of milk sold per FTE | | 1,841,662 | | 2,289,843 |
| Culling percentage | | 35.2 | | 35.1 |
| Turnover rate | | 40.2 | | 46.9 |
| Cow death loss percent | | 5.0 | | 11.7 |
| Cows per milking unit | | 33 | | 42 |
| Feed cost per cwt. of milk | | 9.95 | | 9.13 |
| Feed cost per cow | | 2,723.07 | | 2,759.41 |
| Hired labor per cow | | 599.55 | | 493.72 |
| Avg. milk price per cwt. | | 18.93 | | 18.54 |
| Milk price / feed margin | | 8.97 | | 9.41 |

Dairy Per Cow; 2021

RankEm

Benchmark Report, 15 Enterprises

| | Group Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|-----------------------------|-----------------|-------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Milk sales | 5,524.07 | 15 | 3,756.99 | 3,822.69 | 4,289.11 | 4,642.76 | 5,142.03 | 5,537.55 | 5,607.82 | 5,745.10 | 6,080.31 | 6,247.65 |
| Gross Margin | 6,113.42 | 15 | 4,638.19 | 4,641.35 | 4,857.13 | 5,142.47 | 5,906.48 | 6,186.08 | 6,389.28 | 6,682.81 | 7,043.65 | 7,326.50 |
| Total feed expense | 2,702.84 | 15 | 3,734.83 | 3,594.96 | 3,576.49 | 2,948.08 | 2,810.54 | 2,634.29 | 2,516.32 | 2,478.73 | 2,459.96 | 2,346.45 |
| Breeding Fees | 57.66 | 15 | 131.51 | 125.66 | 122.83 | 84.68 | 71.44 | 57.65 | 51.08 | 44.19 | 35.83 | 24.57 |
| Veterinary | 100.85 | 15 | 197.13 | 159.28 | 134.47 | 124.09 | 112.25 | 95.05 | 82.37 | 75.33 | 69.23 | 57.78 |
| Livestock supplies | 111.21 | 15 | 259.24 | 236.11 | 210.77 | 174.37 | 160.41 | 109.87 | 104.90 | 84.95 | 73.99 | 48.13 |
| Fuel & Oil | 77.81 | 15 | 134.52 | 122.86 | 107.77 | 93.06 | 81.56 | 75.82 | 68.22 | 60.27 | 54.57 | 53.16 |
| Repairs | 142.35 | 15 | 436.84 | 409.44 | 276.57 | 227.45 | 166.89 | 142.34 | 115.34 | 82.10 | 56.63 | 54.44 |
| Marketing | 71.26 | 15 | 314.74 | 145.56 | 89.86 | 77.46 | 72.79 | 68.02 | 61.81 | 59.78 | 51.91 | 18.98 |
| Operating interest | 10.47 | 11 | 16.12 | 15.48 | 14.60 | 12.18 | 10.90 | 8.51 | 3.99 | 3.42 | 0.79 | 0.17 |
| Total direct expenses | 4,467.87 | 15 | 6,109.00 | 5,369.00 | 5,255.43 | 5,142.98 | 4,665.37 | 4,439.48 | 4,310.67 | 4,185.68 | 3,973.20 | 3,707.08 |
| Return over direct expenses | 1,246.12 | 15 | -180.02 | 401.49 | 568.32 | 662.09 | 844.54 | 1,329.71 | 1,870.78 | 1,981.32 | 2,490.07 | 2,562.23 |
| Machinery leases | 0.00 | 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Real estate taxes | 21.54 | 13 | 123.72 | 50.92 | 49.92 | 47.10 | 39.80 | 19.39 | 13.03 | 11.85 | 11.05 | 9.97 |
| Farm insurance | 50.48 | 14 | 84.23 | 70.84 | 66.34 | 62.08 | 57.88 | 39.55 | 33.65 | 28.20 | 18.51 | 13.58 |
| Utilities | 0.00 | 15 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Interest on interm. Debt | 13.91 | 11 | 66.44 | 24.99 | 18.25 | 15.66 | 14.50 | 10.97 | 7.57 | 7.19 | 7.10 | 2.45 |
| Interest on long term debt | 102.61 | 14 | 345.16 | 168.97 | 129.90 | 122.63 | 113.58 | 89.30 | 63.49 | 43.48 | 39.62 | 0.57 |
| Machinery depreciation | 107.97 | 15 | 542.56 | 528.73 | 217.50 | 209.28 | 149.34 | 105.42 | 71.11 | 59.16 | 52.35 | 13.21 |
| Building depreciation | 91.98 | 15 | 255.66 | 227.57 | 221.23 | 121.15 | 99.59 | 89.92 | 65.39 | 50.61 | 39.81 | 7.39 |
| Total overhead expenses | 473.73 | 15 | 1,172.88 | 1,060.64 | 663.46 | 572.60 | 523.41 | 433.73 | 377.70 | 302.54 | 280.41 | 115.60 |
| Total dir & ovhd expense | 4,879.96 | 15 | 6,502.14 | 5,918.89 | 5,897.07 | 5,715.58 | 5,186.32 | 4,865.31 | 4,785.15 | 4,684.76 | 4,568.84 | 4,253.83 |
| Net return | 670.15 | 15 | -749.25 | -101.99 | 206.06 | 374.11 | 540.97 | 710.00 | 1,158.01 | 1,487.00 | 1,592.12 | 2,018.88 |
| Net return over lbr & mgt | 335.39 | 15 | -1,306.44 | -305.13 | 0.41 | 85.76 | 230.77 | 395.16 | 783.27 | 1,170.57 | 1,341.31 | 1,645.11 |
| Cost of production | 17.60 | 15 | 25.30 | 22.81 | 20.56 | 18.90 | 17.71 | 17.36 | 15.89 | 14.68 | 14.51 | 13.62 |
| Corn Fed (Bu.) | 99.42 | 13 | 163.58 | 159.53 | 138.27 | 128.96 | 107.86 | 98.89 | 75.05 | 58.75 | 36.59 | 33.98 |
| Corn Silage Fed (Ton) | 12.26 | 15 | 17.10 | 16.86 | 15.88 | 14.43 | 13.05 | 12.01 | 11.59 | 9.54 | 8.97 | 8.15 |
| Avg. number of head | 308.0 | 15 | 108.0 | 125.0 | 136.0 | 182.0 | 255.0 | 404.0 | 640.5 | 752.0 | 1,020.0 | 1,290.0 |
| Milk produced per head | 29,630 | 15 | 18,338 | 20,140 | 20,624 | 25,530 | 27,336 | 29,759 | 30,110 | 30,596 | 31,056 | 32,659 |
| Culling percentage | 32.8 | 15 | 12.8 | 14.8 | 21.5 | 27.3 | 31.7 | 33.4 | 38.0 | 41.2 | 42.3 | 48.5 |
| Turnover rate | 35.4 | 15 | 16.2 | 21.5 | 22.2 | 31.7 | 33.5 | 39.7 | 45.3 | 47.1 | 48.4 | 51.4 |
| Cows per milking unit | 31 | 15 | 11 | 12 | 14 | 16 | 22 | 33 | 46 | 64 | 67 | 73 |
| Average SCC | 132,000 | 14 | 79,000 | 103,000 | 114,000 | 121,000 | 124,500 | 139,000 | 173,000 | 212,000 | 215,000 | 227,000 |
| Average DIM | 178 | 13 | 163 | 164 | 169 | 170 | 177 | 179 | 181 | 185 | 187 | 199 |
| Avg age at first calf (mo) | 23.0 | 13 | 21.0 | 22.0 | 22.0 | 23.0 | 23.0 | 23.0 | 23.5 | 24.0 | 24.0 | 25.6 |
| Pregnancy rate | 24.0 | 13 | 17.9 | 19.0 | 22.0 | 22.0 | 24.0 | 26.5 | 30.5 | 32.0 | 35.0 | 54.0 |
| Avg calving interval (mo) | 13.1 | 13 | 12.8 | 12.8 | 12.8 | 12.9 | 13.1 | 13.1 | 13.5 | 13.8 | 14.1 | 16.0 |
| Feed cost per cwt of milk | 9.70 | 15 | 14.53 | 13.57 | 12.64 | 12.08 | 10.42 | 9.66 | 9.25 | 8.98 | 8.64 | 8.31 |
| Feed cost per head | 2,702.84 | 15 | 3,734.83 | 3,594.96 | 3,576.49 | 2,948.08 | 2,810.54 | 2,634.29 | 2,516.32 | 2,478.73 | 2,459.96 | 2,346.45 |
| Hired labor per cow | 536.94 | 14 | 919.64 | 791.29 | 776.28 | 702.02 | 572.83 | 493.29 | 356.16 | 248.70 | 171.21 | 100.42 |
| Avg. milk price per cwt. | 18.73 | 15 | 18.15 | 18.22 | 18.48 | 18.56 | 18.67 | 18.77 | 18.88 | 19.54 | 20.85 | 21.30 |

**Livestock Enterprise Analysis
(Farms Sorted By Net Return)**

Dairy -- Average Per Cwt. Of Milk

| | <u>Avg. Of All Farms</u> | | <u>High 20%</u> | |
|--|------------------------------|-----------|-----------------|-----------|
| Number of farms | 15 | | 3 | |
| | Quantity | Value | Quantity | Value |
| Milk sold (hd) | 99.96 | 18.92 | 100.00 | 18.54 |
| Dairy Calves sold (hd) | 0.00 | 0.29 | 0.00 | 0.20 |
| Transferred out (hd) | 0.00 | 0.02 | - | - |
| Cull sales (hd) | 0.00 | 1.02 | 0.00 | 0.89 |
| Insurance income | | 0.01 | | - |
| Government payments | | 0.65 | | 0.46 |
| Other income | | 0.20 | | 0.36 |
| Purchased (hd) | 0.00 | -0.08 | - | - |
| Inventory change (hd) | 0.00 | 0.36 | 0.00 | 0.15 |
| Gross margin | | 21.38 | | 20.60 |
| Direct Expenses | | | | |
| Protein Vit Minerals (lb.) | - | 6.32 | - | 5.99 |
| Corn (bu.) | 0.25 | 0.88 | 0.39 | 1.30 |
| Corn Silage (lb.) | 95.27 | 1.71 | 67.07 | 0.99 |
| Other feed stuffs (lb) | 32.58 | 1.05 | 28.93 | 0.86 |
| Breeding fees | | 0.26 | | 0.24 |
| Veterinary | | 0.34 | | 0.30 |
| Supplies | | 0.50 | | 0.50 |
| Contract production exp. | | 0.42 | | 0.02 |
| Fuel & oil | | 0.29 | | 0.20 |
| Repairs | | 0.61 | | 0.38 |
| Custom hire | | 0.50 | | 0.26 |
| Hired labor | | 2.19 | | 1.63 |
| Utilities | | 0.42 | | 0.32 |
| Hauling and trucking | | 0.60 | | 0.66 |
| Marketing | | 0.33 | | 0.25 |
| Bedding | | 0.26 | | 0.23 |
| Miscellaneous | | 0.21 | | 0.10 |
| Total direct expenses | | 16.90 | | 14.21 |
| Return over direct expense | | 4.48 | | 6.39 |
| Overhead Expenses | | | | |
| Interest | | 0.44 | | 0.25 |
| Mach & bldg depreciation | | 0.81 | | 0.55 |
| Miscellaneous | | 0.39 | | 0.29 |
| Total overhead expenses | | 1.65 | | 1.09 |
| Total dir & ovhd expenses | | 18.55 | | 15.30 |
| Net return | | 2.84 | | 5.30 |
| Labor & management charge | | 1.11 | | 1.49 |
| Net return over lbr & mgt | | 1.73 | | 3.81 |
| Cost of Production Per Cwt. Of Milk | | | | |
| Total direct expense per unit | | 16.90 | | 14.21 |
| Total dir & ovhd expense per unit | | 18.55 | | 15.30 |
| With other revenue adjustments | | 16.09 | | 13.23 |
| With labor and management | | 17.19 | | 14.73 |
| Est. labor hours per unit | | 0.15 | | 0.12 |
| Other Information | | | | |
| Number of cows | | 476.4 | | 476.7 |
| Milk produced per cow | | 27,356 | | 30,211 |
| Lbs of protein & fat per cow | | 394 | | 1,335 |
| Lb. of milk sold per FTE | | 1,841,662 | | 2,289,843 |
| Culling percentage | | 35.2 | | 35.1 |
| Turnover rate | | 40.2 | | 46.9 |
| Cow death loss percent | | 5.0 | | 11.7 |
| Cows per milking unit | | 33 | | 42 |
| Feed cost per cwt. of milk | | 9.95 | | 9.13 |
| Feed cost per cow | | 2,723.07 | | 2,759.41 |
| Hired labor per cow | | 599.55 | | 493.72 |
| Avg. milk price per cwt. | | 18.93 | | 18.54 |
| Milk price / feed margin | | 8.97 | | 9.41 |

Dairy Per Cwt. Of Milk; 2021

RankEm

Benchmark Report, 15 Enterprises

| Group | | | | | | | | | | | | |
|-----------------------------|----------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| Milk sales | 18.72 | 15 | 18.15 | 18.22 | 18.22 | 18.50 | 18.62 | 18.73 | 18.81 | 19.53 | 20.85 | 21.30 |
| Gross Margin | 21.83 | 15 | 20.06 | 20.17 | 20.22 | 20.68 | 21.63 | 21.99 | 22.34 | 22.86 | 23.55 | 25.31 |
| Total feed expense | 9.70 | 15 | 14.53 | 13.57 | 12.64 | 12.08 | 10.42 | 9.66 | 9.25 | 8.98 | 8.64 | 8.31 |
| Breeding Fees | 0.24 | 15 | 0.42 | 0.42 | 0.41 | 0.34 | 0.29 | 0.22 | 0.20 | 0.16 | 0.14 | 0.08 |
| Veterinary | 0.34 | 15 | 0.77 | 0.67 | 0.67 | 0.51 | 0.38 | 0.33 | 0.30 | 0.25 | 0.23 | 0.22 |
| Livestock supplies | 0.47 | 15 | 1.29 | 1.14 | 0.69 | 0.64 | 0.56 | 0.42 | 0.36 | 0.33 | 0.26 | 0.15 |
| Fuel & Oil | 0.30 | 15 | 0.49 | 0.45 | 0.40 | 0.34 | 0.32 | 0.28 | 0.26 | 0.23 | 0.19 | 0.18 |
| Repairs | 0.57 | 15 | 1.45 | 1.33 | 1.08 | 0.92 | 0.60 | 0.56 | 0.44 | 0.31 | 0.20 | 0.19 |
| Marketing | 0.26 | 15 | 1.56 | 0.48 | 0.33 | 0.29 | 0.26 | 0.24 | 0.22 | 0.20 | 0.20 | 0.09 |
| Operating interest | 0.04 | 11 | 0.08 | 0.07 | 0.06 | 0.04 | 0.04 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 |
| Total direct expenses | 17.44 | 15 | 24.42 | 21.67 | 21.04 | 18.90 | 17.62 | 17.38 | 15.04 | 14.51 | 14.00 | 13.39 |
| Return over direct expenses | 4.14 | 15 | -0.87 | 1.99 | 2.21 | 2.59 | 3.33 | 4.42 | 6.22 | 7.09 | 8.00 | 8.30 |
| Real estate taxes | 0.07 | 13 | 0.60 | 0.17 | 0.17 | 0.16 | 0.13 | 0.07 | 0.07 | 0.04 | 0.04 | 0.03 |
| Farm insurance | 0.16 | 14 | 0.32 | 0.31 | 0.28 | 0.23 | 0.19 | 0.14 | 0.12 | 0.09 | 0.07 | 0.06 |
| Utilities | 0.00 | 15 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Interest on interm. Debt | 0.05 | 11 | 0.33 | 0.14 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.03 | 0.02 | 0.01 |
| Interest on long term debt | 0.36 | 14 | 1.33 | 0.63 | 0.59 | 0.51 | 0.43 | 0.30 | 0.20 | 0.14 | 0.13 | 0.00 |
| Machinery depreciation | 0.37 | 15 | 2.09 | 1.62 | 0.98 | 0.82 | 0.56 | 0.36 | 0.31 | 0.22 | 0.17 | 0.04 |
| Building depreciation | 0.34 | 15 | 0.78 | 0.76 | 0.73 | 0.41 | 0.37 | 0.34 | 0.29 | 0.20 | 0.18 | 0.02 |
| Total overhead expenses | 1.65 | 15 | 4.51 | 3.25 | 2.76 | 2.35 | 1.84 | 1.59 | 1.48 | 1.17 | 0.94 | 0.39 |
| Total dir & ovhd expense | 18.83 | 15 | 27.18 | 23.54 | 23.20 | 20.29 | 19.30 | 18.80 | 18.28 | 16.31 | 15.15 | 15.08 |
| Net return | 2.23 | 15 | -3.63 | -0.51 | 0.82 | 1.57 | 1.97 | 2.36 | 3.93 | 5.00 | 5.33 | 6.54 |
| Net return over lbr & mgt | 1.13 | 15 | -6.33 | -1.52 | 0.00 | 0.37 | 0.76 | 1.32 | 2.76 | 3.96 | 4.14 | 5.33 |
| Cost of production | 17.60 | 15 | 25.30 | 22.81 | 20.56 | 18.90 | 17.71 | 17.36 | 15.89 | 14.68 | 14.51 | 13.62 |
| Corn Fed (Bu.) | 0.35 | 13 | 0.79 | 0.61 | 0.46 | 0.40 | 0.38 | 0.34 | 0.33 | 0.23 | 0.14 | 0.11 |
| Corn Silage Fed (Ton) | 0.05 | 15 | 0.07 | 0.06 | 0.06 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 |
| Avg. number of head | 308.0 | 15 | 108.0 | 125.0 | 136.0 | 182.0 | 255.0 | 404.0 | 640.5 | 752.0 | 1,020.0 | 1,290.0 |
| Milk produced per head | 29,630 | 15 | 18,338 | 20,140 | 20,624 | 25,530 | 27,336 | 29,759 | 30,110 | 30,596 | 31,056 | 32,659 |
| Culling percentage | 32.8 | 15 | 12.8 | 14.8 | 21.5 | 27.3 | 31.7 | 33.4 | 38.0 | 41.2 | 42.3 | 48.5 |
| Turnover rate | 35.4 | 15 | 16.2 | 21.5 | 22.2 | 31.7 | 33.5 | 39.7 | 45.3 | 47.1 | 48.4 | 51.4 |
| Cows per milking unit | 31 | 15 | 11 | 12 | 14 | 16 | 22 | 33 | 46 | 64 | 67 | 73 |
| Average SCC | 132,000 | 14 | 79,000 | 103,000 | 114,000 | 121,000 | 124,500 | 139,000 | 173,000 | 212,000 | 215,000 | 227,000 |
| Average DIM | 178 | 13 | 163 | 164 | 169 | 170 | 177 | 179 | 181 | 185 | 187 | 199 |
| Avg age at first calf (mo) | 23.0 | 13 | 21.0 | 22.0 | 22.0 | 23.0 | 23.0 | 23.0 | 23.5 | 24.0 | 24.0 | 25.6 |
| Pregnancy rate | 24.0 | 13 | 17.9 | 19.0 | 22.0 | 22.0 | 24.0 | 26.5 | 30.5 | 32.0 | 35.0 | 54.0 |
| Avg calving interval (mo) | 13.1 | 13 | 12.8 | 12.8 | 12.8 | 12.9 | 13.1 | 13.1 | 13.5 | 13.8 | 14.1 | 16.0 |
| Feed cost per cwt of milk | 9.70 | 15 | 14.53 | 13.57 | 12.64 | 12.08 | 10.42 | 9.66 | 9.25 | 8.98 | 8.64 | 8.31 |
| Feed cost per head | 2,702.84 | 15 | 3,734.83 | 3,594.96 | 3,576.49 | 2,948.08 | 2,810.54 | 2,634.29 | 2,516.32 | 2,478.73 | 2,459.96 | 2,346.45 |
| Hired labor per cow | 536.94 | 14 | 919.64 | 791.29 | 776.28 | 702.02 | 572.83 | 493.29 | 356.16 | 248.70 | 171.21 | 100.42 |
| Avg. milk price per cwt. | 18.73 | 15 | 18.15 | 18.22 | 18.48 | 18.56 | 18.67 | 18.77 | 18.88 | 19.54 | 20.85 | 21.30 |

Livestock Enterprise Analysis
(Farms Sorted By Enterprise Size)

Dairy -- Average Per Cow

| | 100 200 | | 200 500 | | Over 500 | |
|--|--------------------|-----------|--------------------|-----------|---------------------|-----------|
| Number of farms | 5 | | 4 | | 6 | |
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Milk sold (hd) | 26,171.1 | 5,009.29 | 29,200.7 | 5,437.92 | 27,032.7 | 5,131.10 |
| Dairy Calves sold (hd) | 0.4 | 56.22 | 0.5 | 76.81 | 0.5 | 81.76 |
| Transferred out (hd) | 0.0 | 66.00 | - | - | 0.1 | - |
| Cull sales (hd) | 0.3 | 237.35 | 0.3 | 247.49 | 0.4 | 292.85 |
| Insurance income | | - | | 8.70 | | - |
| Government payments | | 506.97 | | 262.61 | | 109.00 |
| Other income | | 75.59 | | 124.47 | | 34.00 |
| Purchased (hd) | - | - | - | - | 0.0 | -30.95 |
| Inventory change (hd) | 0.0 | -84.09 | 0.0 | 146.93 | 0.1 | 111.44 |
| Gross margin | | 5,867.33 | | 6,304.93 | | 5,729.20 |
| Direct Expenses | | | | | | |
| Protein Vit Minerals (lb.) | - | 1,998.04 | - | 1,649.66 | - | 1,709.12 |
| Corn (bu.) | 92.9 | 307.79 | 116.3 | 436.95 | 51.0 | 180.66 |
| Corn Silage (lb.) | 22,638.5 | 360.27 | 26,192.7 | 463.53 | 26,519.7 | 483.55 |
| Hay, Alfalfa (lb.) | 4,401.1 | 167.45 | 2,972.7 | 135.65 | 822.8 | 63.94 |
| Other feed stuffs (lb) | 8,243.3 | 221.00 | 4,849.5 | 91.95 | 7,835.1 | 223.97 |
| Breeding fees | | 56.85 | | 99.01 | | 66.90 |
| Veterinary | | 131.15 | | 107.42 | | 84.52 |
| Supplies | | 128.90 | | 133.95 | | 137.69 |
| Contract production exp. | | 69.53 | | 45.30 | | 140.48 |
| Fuel & oil | | 75.07 | | 86.33 | | 79.66 |
| Repairs | | 192.32 | | 188.88 | | 158.23 |
| Custom hire | | 119.68 | | 123.87 | | 141.44 |
| Hired labor | | 303.32 | | 511.82 | | 664.86 |
| Utilities | | 101.03 | | 136.86 | | 110.54 |
| Hauling and trucking | | 227.95 | | 214.62 | | 140.07 |
| Marketing | | 59.76 | | 89.54 | | 96.53 |
| Miscellaneous | | 146.01 | | 106.93 | | 134.33 |
| Total direct expenses | | 4,666.13 | | 4,622.26 | | 4,616.49 |
| Return over direct expense | | 1,201.19 | | 1,682.67 | | 1,112.71 |
| Overhead Expenses | | | | | | |
| Interest | | 60.71 | | 140.00 | | 125.10 |
| Mach & bldg depreciation | | 270.34 | | 331.15 | | 188.04 |
| Miscellaneous | | 140.42 | | 128.98 | | 95.82 |
| Total overhead expenses | | 471.48 | | 600.13 | | 408.96 |
| Total dir & ovhd expenses | | 5,137.61 | | 5,222.38 | | 5,025.45 |
| Net return | | 729.72 | | 1,082.54 | | 703.76 |
| Labor & management charge | | 296.01 | | 419.96 | | 273.23 |
| Net return over lbr & mgt | | 433.70 | | 662.58 | | 430.53 |
| Cost of Production Per Cwt. Of Milk | | | | | | |
| Total direct expense per unit | | 17.75 | | 15.83 | | 17.08 |
| Total dir & ovhd expense per unit | | 19.54 | | 17.88 | | 18.59 |
| With other revenue adjustments | | 16.36 | | 14.92 | | 16.38 |
| With labor and management | | 17.49 | | 16.35 | | 17.39 |
| Est. labor hours per unit | | 46.58 | | 31.95 | | 43.34 |
| Other Information | | | | | | |
| Number of cows | | 146.6 | | 329.5 | | 849.2 |
| Milk produced per cow | | 26,291 | | 29,201 | | 27,033 |
| Lbs of protein & fat per cow | | 916 | | 375 | | 324 |
| Lb. of milk sold per FTE | | 1,573,077 | | 2,559,138 | | 1,746,379 |
| Culling percentage | | 29.5 | | 30.3 | | 37.3 |
| Turnover rate | | 33.3 | | 34.1 | | 42.8 |
| Cow death loss percent | | 3.8 | | 3.8 | | 5.5 |
| Cows per milking unit | | 16 | | 22 | | 45 |
| Feed cost per cwt. of milk | | 11.62 | | 9.51 | | 9.84 |
| Feed cost per cow | | 3,054.55 | | 2,777.74 | | 2,661.25 |
| Hired labor per cow | | 303.32 | | 511.82 | | 664.86 |
| Avg. milk price per cwt. | | 19.14 | | 18.62 | | 18.98 |
| Milk price / feed margin | | 7.52 | | 9.11 | | 9.14 |

Livestock Enterprise Analysis
(Farms Sorted By Enterprise Size)

Dairy -- Average Per Cwt. Of Milk

| | <u>100 200</u> | | <u>200 500</u> | | <u>Over 500</u> | |
|--|--------------------|-----------|--------------------|-----------|---------------------|-----------|
| Number of farms | 5 | | 4 | | 6 | |
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Milk sold (hd) | 99.55 | 19.05 | 100.00 | 18.62 | 100.00 | 18.98 |
| Dairy Calves sold (hd) | 0.00 | 0.21 | 0.00 | 0.26 | 0.00 | 0.30 |
| Transferred out (hd) | 0.00 | 0.25 | - | - | 0.00 | - |
| Cull sales (hd) | 0.00 | 0.90 | 0.00 | 0.85 | 0.00 | 1.08 |
| Insurance income | | - | | 0.03 | | - |
| Government payments | | 1.93 | | 0.90 | | 0.40 |
| Other income | | 0.29 | | 0.43 | | 0.13 |
| Purchased (hd) | - | - | - | - | 0.00 | -0.11 |
| Inventory change (hd) | 0.00 | -0.32 | 0.00 | 0.50 | 0.00 | 0.41 |
| Gross margin | | 22.32 | | 21.59 | | 21.19 |
| Direct Expenses | | | | | | |
| Protein Vit Minerals (lb.) | - | 7.60 | - | 5.65 | - | 6.32 |
| Corn (bu.) | 0.35 | 1.17 | 0.40 | 1.50 | 0.19 | 0.67 |
| Corn Silage (lb.) | 86.11 | 1.37 | 89.70 | 1.59 | 98.10 | 1.79 |
| Hay, Alfalfa (lb.) | 16.74 | 0.64 | 10.18 | 0.46 | 3.04 | 0.24 |
| Other feed stuffs (lb) | 31.35 | 0.84 | 16.61 | 0.31 | 28.98 | 0.83 |
| Breeding fees | | 0.22 | | 0.34 | | 0.25 |
| Veterinary | | 0.50 | | 0.37 | | 0.31 |
| Supplies | | 0.49 | | 0.46 | | 0.51 |
| Contract production exp. | | 0.26 | | 0.16 | | 0.52 |
| Repairs | | 0.73 | | 0.65 | | 0.59 |
| Custom hire | | 0.46 | | 0.42 | | 0.52 |
| Hired labor | | 1.15 | | 1.75 | | 2.46 |
| Utilities | | 0.38 | | 0.47 | | 0.41 |
| Hauling and trucking | | 0.87 | | 0.73 | | 0.52 |
| Marketing | | 0.23 | | 0.31 | | 0.36 |
| Miscellaneous | | 0.84 | | 0.66 | | 0.79 |
| Total direct expenses | | 17.75 | | 15.83 | | 17.08 |
| Return over direct expense | | 4.57 | | 5.76 | | 4.12 |
| Overhead Expenses | | | | | | |
| Interest | | 0.23 | | 0.48 | | 0.46 |
| Mach & bldg depreciation | | 1.03 | | 1.13 | | 0.70 |
| Miscellaneous | | 0.53 | | 0.44 | | 0.35 |
| Total overhead expenses | | 1.79 | | 2.06 | | 1.51 |
| Total dir & ovhd expenses | | 19.54 | | 17.88 | | 18.59 |
| Net return | | 2.78 | | 3.71 | | 2.60 |
| Labor & management charge | | 1.13 | | 1.44 | | 1.01 |
| Net return over lbr & mgt | | 1.65 | | 2.27 | | 1.59 |
| Cost of Production Per Cwt. Of Milk | | | | | | |
| Total direct expense per unit | | 17.75 | | 15.83 | | 17.08 |
| Total dir & ovhd expense per unit | | 19.54 | | 17.88 | | 18.59 |
| With other revenue adjustments | | 16.36 | | 14.92 | | 16.38 |
| With labor and management | | 17.49 | | 16.35 | | 17.39 |
| Est. labor hours per unit | | 0.18 | | 0.11 | | 0.16 |
| Other Information | | | | | | |
| Number of cows | | 146.6 | | 329.5 | | 849.2 |
| Milk produced per cow | | 26,291 | | 29,201 | | 27,033 |
| Lbs of protein & fat per cow | | 916 | | 375 | | 324 |
| Lb. of milk sold per FTE | | 1,573,077 | | 2,559,138 | | 1,746,379 |
| Culling percentage | | 29.5 | | 30.3 | | 37.3 |
| Turnover rate | | 33.3 | | 34.1 | | 42.8 |
| Cow death loss percent | | 3.8 | | 3.8 | | 5.5 |
| Cows per milking unit | | 16 | | 22 | | 45 |
| Feed cost per cwt. of milk | | 11.62 | | 9.51 | | 9.84 |
| Feed cost per cow | | 3,054.55 | | 2,777.74 | | 2,661.25 |
| Hired labor per cow | | 303.32 | | 511.82 | | 664.86 |
| Avg. milk price per cwt. | | 19.14 | | 18.62 | | 18.98 |
| Milk price / feed margin | | 7.52 | | 9.11 | | 9.14 |

Corn Silage 2021; Owned Land

RankEm

Benchmark Report, 14 Enterprises

| | Group Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|------------------------------|-----------------|-------|----------|----------|---------|---------|----------|----------|----------|----------|----------|----------|
| Yield per acre (ton) | 22.25 | 14 | 15.16 | 20.21 | 20.60 | 20.81 | 22.00 | 22.56 | 23.00 | 24.50 | 25.00 | 29.00 |
| Value per unit | 50.00 | 14 | 38.00 | 40.00 | 40.00 | 47.50 | 50.00 | 50.00 | 55.00 | 55.00 | 57.00 | 60.00 |
| Total product value | 1,066.01 | 14 | 758.20 | 874.00 | 904.62 | 963.50 | 1,021.36 | 1,125.00 | 1,181.96 | 1,237.50 | 1,396.50 | 1,740.00 |
| Gross return | 1,066.01 | 14 | 758.20 | 874.00 | 904.62 | 965.51 | 1,021.36 | 1,125.00 | 1,181.96 | 1,267.82 | 1,405.98 | 1,740.00 |
| Seed and plants | 101.64 | 14 | 225.68 | 148.20 | 126.40 | 112.73 | 103.92 | 93.34 | 84.20 | 83.07 | 73.08 | 67.95 |
| Fertilizer | 125.21 | 14 | 247.43 | 218.95 | 209.85 | 168.08 | 136.12 | 120.94 | 104.65 | 92.67 | 74.73 | 28.56 |
| Crop chemicals | 54.99 | 14 | 115.58 | 114.66 | 96.06 | 71.84 | 55.68 | 53.41 | 46.38 | 40.68 | 37.25 | 34.15 |
| Crop insurance | 14.45 | 12 | 28.07 | 24.99 | 18.07 | 16.40 | 14.81 | 12.74 | 9.67 | 4.41 | 2.65 | 1.25 |
| Packaging and supplies | 7.94 | 10 | 20.00 | 16.85 | 16.52 | 14.34 | 8.92 | 6.96 | 5.19 | 4.22 | 4.02 | 1.67 |
| Fuel & oil | 37.92 | 14 | 66.44 | 64.81 | 53.74 | 41.02 | 38.01 | 36.51 | 21.96 | 14.50 | 13.41 | 9.26 |
| Repairs | 60.36 | 14 | 128.45 | 112.11 | 107.70 | 102.60 | 68.14 | 58.76 | 48.68 | 27.02 | 26.19 | 12.16 |
| Custom hire | 122.41 | 13 | 343.83 | 241.73 | 224.80 | 223.03 | 171.62 | 103.61 | 47.42 | 31.62 | 12.93 | 9.96 |
| Operating interest | 2.52 | 11 | 18.25 | 9.46 | 7.31 | 6.87 | 3.33 | 2.05 | 1.45 | 0.46 | 0.30 | 0.25 |
| Total direct expenses | 613.48 | 14 | 927.83 | 778.78 | 726.58 | 674.03 | 642.83 | 572.36 | 531.82 | 421.68 | 396.92 | 374.60 |
| Return over direct expenses | 482.17 | 14 | -0.83 | 238.00 | 254.73 | 324.00 | 444.57 | 523.83 | 612.12 | 629.41 | 821.11 | 1,318.32 |
| Hired labor | 0.00 | 11 | 172.17 | 38.51 | 33.31 | 24.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Real estate taxes | 20.81 | 14 | 60.96 | 48.89 | 31.21 | 27.14 | 22.88 | 19.45 | 18.00 | 15.79 | 15.32 | 13.43 |
| Farm insurance | 11.16 | 14 | 31.94 | 22.13 | 20.14 | 16.43 | 12.90 | 10.15 | 6.04 | 3.42 | 2.34 | 1.87 |
| Utilities | 0.00 | 14 | 15.92 | 12.88 | 11.67 | 3.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Dues & professional fees | 5.55 | 12 | 10.21 | 9.13 | 8.71 | 8.48 | 6.98 | 4.99 | 4.52 | 3.84 | 1.94 | 0.93 |
| Interest on long term debt | 70.51 | 14 | 294.39 | 191.50 | 149.28 | 117.10 | 86.18 | 64.67 | 53.62 | 39.24 | 28.82 | 19.98 |
| Machinery depreciation | 56.39 | 14 | 84.73 | 81.64 | 63.83 | 62.50 | 57.20 | 55.76 | 32.96 | 16.27 | 14.07 | 13.80 |
| Building depreciation | 8.72 | 14 | 15.87 | 15.65 | 10.71 | 10.46 | 9.38 | 7.32 | 5.04 | 3.03 | 3.01 | 1.66 |
| Miscellaneous | 8.30 | 13 | 27.15 | 11.73 | 10.70 | 10.59 | 9.17 | 7.86 | 6.45 | 5.53 | 5.05 | 3.79 |
| Total overhead expenses | 204.50 | 14 | 457.92 | 422.32 | 298.13 | 272.63 | 225.75 | 201.05 | 165.21 | 139.74 | 132.16 | 123.83 |
| Total dir & ovhd expenses | 849.11 | 14 | 1,128.55 | 1,107.80 | 996.31 | 948.29 | 873.60 | 844.48 | 752.18 | 666.99 | 536.66 | 498.43 |
| Net return | 276.31 | 14 | -203.19 | -201.55 | 20.76 | 63.46 | 226.81 | 319.33 | 476.17 | 505.58 | 577.22 | 896.01 |
| Government payments | 1.45 | 14 | 0.00 | 0.00 | 0.00 | 0.53 | 1.21 | 1.82 | 10.75 | 18.16 | 22.07 | 27.21 |
| Net return with govt pymts | 280.29 | 14 | -202.03 | -199.55 | 20.76 | 77.89 | 231.29 | 319.96 | 482.98 | 527.65 | 595.38 | 896.01 |
| Labor & management charge | 84.53 | 14 | 447.96 | 325.39 | 158.78 | 116.42 | 88.50 | 83.45 | 36.80 | 31.42 | 28.74 | 25.42 |
| Net return over lbr & mgt | 149.56 | 14 | -319.29 | -291.54 | -262.46 | -100.20 | 90.92 | 182.79 | 424.75 | 502.23 | 512.51 | 856.41 |
| Direct cost of prod per unit | 28.36 | 14 | 45.04 | 35.40 | 34.31 | 33.06 | 28.96 | 26.94 | 24.11 | 19.64 | 14.98 | 14.54 |
| Dir & ovhd cost of prod/unit | 38.87 | 14 | 54.78 | 48.98 | 48.27 | 43.87 | 41.08 | 36.92 | 33.01 | 29.10 | 26.55 | 19.94 |
| COP less govt & other income | 38.61 | 14 | 54.69 | 48.93 | 46.95 | 43.63 | 40.35 | 36.92 | 32.13 | 29.10 | 26.55 | 18.89 |
| Cost of prod with lbr & mgt | 43.09 | 14 | 63.75 | 62.72 | 59.15 | 50.65 | 45.26 | 40.05 | 35.85 | 30.47 | 28.10 | 19.91 |
| Machinery cost per acre | 264.73 | 14 | 578.92 | 476.74 | 429.93 | 314.77 | 268.91 | 259.66 | 220.31 | 199.55 | 182.15 | 142.80 |
| Est. labor hours per acre | 3.56 | 14 | 8.63 | 8.45 | 7.79 | 6.96 | 4.79 | 2.63 | 2.30 | 1.53 | 0.82 | 0.69 |

Corn Silage 2021; Cash Rent

RankEm

Benchmark Report, 14 Enterprises

| | Group Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|------------------------------|-----------------|-------|----------|---------|--------|----------|----------|----------|----------|----------|----------|----------|
| Yield per acre (ton) | 22.56 | 14 | 15.16 | 20.21 | 20.60 | 20.81 | 22.25 | 22.81 | 24.25 | 25.00 | 28.62 | 29.00 |
| Value per unit | 50.00 | 14 | 40.00 | 40.00 | 40.00 | 47.50 | 50.00 | 50.00 | 55.00 | 55.00 | 57.00 | 60.00 |
| Total product value | 1,122.41 | 14 | 758.20 | 904.62 | 927.00 | 1,005.34 | 1,066.01 | 1,147.41 | 1,195.71 | 1,320.00 | 1,396.50 | 1,740.00 |
| Gross return | 1,122.41 | 14 | 758.20 | 904.62 | 927.00 | 1,007.35 | 1,066.01 | 1,147.41 | 1,210.87 | 1,320.00 | 1,405.98 | 1,740.00 |
| Seed and plants | 101.64 | 14 | 225.68 | 120.64 | 105.33 | 104.69 | 103.92 | 93.34 | 84.20 | 83.07 | 73.08 | 67.95 |
| Fertilizer | 121.30 | 14 | 224.71 | 218.95 | 209.85 | 161.02 | 125.34 | 120.94 | 104.65 | 92.67 | 74.73 | 28.56 |
| Crop chemicals | 51.59 | 14 | 115.58 | 114.66 | 96.06 | 64.78 | 53.90 | 46.38 | 41.06 | 37.25 | 35.39 | 34.15 |
| Crop insurance | 14.45 | 12 | 28.07 | 24.99 | 18.07 | 16.40 | 14.81 | 12.74 | 9.67 | 7.81 | 4.41 | 2.65 |
| Packaging and supplies | 6.08 | 10 | 20.00 | 16.52 | 14.34 | 8.92 | 6.96 | 5.19 | 4.22 | 4.02 | 2.42 | 1.67 |
| Fuel & oil | 36.51 | 14 | 66.44 | 64.81 | 53.14 | 40.10 | 37.92 | 30.13 | 17.07 | 14.50 | 13.41 | 9.26 |
| Repairs | 58.76 | 14 | 128.45 | 112.11 | 107.70 | 90.33 | 60.36 | 57.77 | 36.22 | 26.19 | 21.87 | 12.16 |
| Custom hire | 135.00 | 13 | 347.60 | 343.83 | 224.80 | 223.03 | 172.90 | 128.70 | 66.99 | 45.68 | 12.93 | 9.96 |
| Land rent | 96.90 | 14 | 139.16 | 132.62 | 126.60 | 117.01 | 99.29 | 92.59 | 84.17 | 82.34 | 71.58 | 50.16 |
| Operating interest | 1.58 | 11 | 18.25 | 9.46 | 7.31 | 6.87 | 2.52 | 1.51 | 0.46 | 0.30 | 0.25 | 0.05 |
| Total direct expenses | 706.63 | 14 | 1,060.46 | 853.18 | 837.34 | 787.96 | 731.83 | 682.65 | 629.45 | 521.64 | 486.92 | 459.60 |
| Return over direct expenses | 424.74 | 14 | -133.46 | 154.66 | 156.11 | 263.89 | 375.23 | 466.70 | 534.09 | 621.90 | 738.77 | 1,218.36 |
| Hired labor | 0.00 | 12 | 172.17 | 38.51 | 33.31 | 13.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Farm insurance | 11.13 | 13 | 22.13 | 20.14 | 16.97 | 15.90 | 12.90 | 9.62 | 3.93 | 3.42 | 2.34 | 1.87 |
| Utilities | 0.00 | 14 | 12.88 | 11.67 | 4.05 | 1.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Dues & professional fees | 4.99 | 12 | 10.21 | 9.13 | 8.71 | 8.48 | 5.55 | 4.74 | 3.84 | 3.27 | 1.94 | 0.93 |
| Machinery depreciation | 48.97 | 14 | 63.83 | 63.43 | 61.56 | 57.20 | 55.76 | 32.96 | 15.17 | 13.80 | 11.92 | 10.60 |
| Building depreciation | 6.44 | 14 | 15.87 | 15.65 | 10.71 | 10.11 | 7.83 | 5.04 | 3.02 | 1.66 | 1.60 | 0.31 |
| Miscellaneous | 7.30 | 14 | 11.73 | 10.70 | 10.59 | 9.17 | 7.86 | 7.14 | 5.66 | 5.05 | 3.79 | 1.10 |
| Total overhead expenses | 84.52 | 14 | 280.48 | 152.36 | 133.06 | 129.19 | 93.03 | 80.61 | 36.98 | 30.92 | 30.58 | 21.36 |
| Total dir & ovhd expenses | 821.66 | 14 | 1,160.70 | 970.39 | 931.17 | 898.68 | 843.97 | 771.65 | 712.81 | 634.45 | 570.15 | 490.18 |
| Net return | 322.72 | 14 | -233.70 | 23.78 | 61.63 | 153.60 | 303.45 | 374.69 | 477.19 | 600.54 | 699.81 | 937.89 |
| Government payments | 1.82 | 14 | 0.00 | 0.00 | 0.07 | 1.07 | 1.45 | 2.10 | 15.60 | 18.16 | 22.07 | 27.21 |
| Net return with govt pymts | 323.35 | 14 | -231.71 | 24.94 | 88.84 | 154.92 | 304.55 | 382.09 | 488.25 | 618.20 | 717.97 | 937.89 |
| Labor & management charge | 84.53 | 14 | 325.39 | 164.45 | 158.78 | 116.42 | 88.50 | 83.45 | 36.80 | 31.42 | 25.42 | 23.22 |
| Net return over lbr & mgt | 235.16 | 14 | -323.69 | -236.55 | -92.31 | 95.90 | 186.18 | 309.17 | 431.47 | 510.48 | 635.10 | 898.29 |
| Direct cost of prod per unit | 31.17 | 14 | 51.48 | 40.57 | 39.80 | 36.33 | 32.17 | 30.09 | 27.80 | 24.09 | 18.38 | 17.99 |
| Dir & ovhd cost of prod/unit | 35.95 | 14 | 56.34 | 47.01 | 41.84 | 41.52 | 37.76 | 32.65 | 29.20 | 28.21 | 27.66 | 19.61 |
| COP less govt & other income | 35.63 | 14 | 56.25 | 45.70 | 41.73 | 40.80 | 37.74 | 32.09 | 28.72 | 27.70 | 27.66 | 18.56 |
| Cost of prod with lbr & mgt | 40.17 | 14 | 61.46 | 60.71 | 47.04 | 44.76 | 42.79 | 37.41 | 30.70 | 29.76 | 29.02 | 19.58 |
| Machinery cost per acre | 264.73 | 14 | 578.92 | 429.93 | 410.10 | 314.77 | 268.91 | 260.80 | 245.29 | 205.15 | 182.15 | 142.80 |
| Est. labor hours per acre | 4.40 | 14 | 8.63 | 8.45 | 7.79 | 5.78 | 4.47 | 3.55 | 2.53 | 2.11 | 0.82 | 0.69 |

Hay, Alfalfa 2021; All Tenures

RankEm

Benchmark Report, 10 Enterprises

| | Group Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|------------------------------|-----------------|-------|---------|---------|---------|--------|--------|--------|--------|----------|----------|----------|
| Yield per acre (ton) | 6.00 | 10 | 2.04 | 3.78 | 5.13 | 5.50 | 6.00 | 6.00 | 6.84 | 7.00 | 7.44 | 7.44 |
| Value per unit | 150.00 | 10 | 80.00 | 125.00 | 135.00 | 135.00 | 150.00 | 150.00 | 150.00 | 150.00 | 153.93 | 155.00 |
| Total product value | 877.63 | 10 | 302.60 | 314.17 | 769.74 | 852.50 | 855.26 | 900.00 | 900.00 | 1,004.27 | 1,004.27 | 1,050.00 |
| Gross return | 877.63 | 10 | 311.24 | 314.17 | 769.74 | 852.50 | 855.26 | 900.00 | 900.00 | 1,050.00 | 1,056.01 | 1,056.01 |
| Fertilizer | 82.76 | 10 | 125.00 | 101.49 | 89.29 | 89.29 | 82.76 | 82.76 | 74.24 | 71.55 | 66.10 | 44.27 |
| Fuel & oil | 27.13 | 10 | 71.22 | 53.74 | 49.83 | 34.75 | 28.99 | 25.27 | 25.27 | 16.83 | 16.83 | 1.42 |
| Repairs | 63.34 | 10 | 160.51 | 109.81 | 99.64 | 80.77 | 63.34 | 63.34 | 26.86 | 26.86 | 24.77 | 21.51 |
| Total direct expenses | 512.05 | 10 | 826.85 | 693.88 | 587.88 | 568.35 | 514.26 | 509.84 | 462.31 | 375.10 | 350.11 | 203.76 |
| Return over direct expenses | 387.96 | 10 | -273.71 | -57.11 | 107.48 | 362.13 | 385.74 | 390.19 | 487.67 | 505.15 | 524.90 | 540.16 |
| Machinery depreciation | 33.74 | 10 | 81.64 | 76.68 | 48.76 | 42.42 | 33.74 | 33.74 | 19.39 | 19.39 | 11.68 | 5.78 |
| Building depreciation | 4.15 | 10 | 37.38 | 10.23 | 8.02 | 6.69 | 4.15 | 4.15 | 1.13 | 0.99 | 0.99 | 0.17 |
| Miscellaneous | 5.92 | 10 | 27.15 | 13.75 | 7.10 | 7.10 | 6.22 | 5.62 | 3.92 | 3.32 | 3.32 | 0.38 |
| Total overhead expenses | 95.97 | 10 | 244.91 | 222.13 | 183.63 | 181.47 | 112.11 | 79.84 | 75.18 | 65.60 | 20.33 | 11.65 |
| Total dir & ovhd expenses | 652.22 | 10 | 902.03 | 759.48 | 749.81 | 700.00 | 684.44 | 620.01 | 594.10 | 533.74 | 521.49 | 224.09 |
| Net return | 288.26 | 10 | -385.82 | -132.30 | 87.15 | 168.06 | 279.99 | 296.53 | 305.90 | 306.20 | 321.52 | 528.51 |
| Government payments | 0.00 | 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 17.66 | 23.60 |
| Net return with govt pymts | 288.26 | 10 | -385.82 | -132.30 | 110.75 | 168.06 | 279.99 | 296.53 | 305.90 | 306.20 | 321.52 | 546.17 |
| Labor & management charge | 125.51 | 10 | 447.96 | 215.58 | 195.23 | 195.23 | 161.32 | 89.70 | 68.99 | 34.00 | 34.00 | 12.98 |
| Net return over lbr & mgt | 91.26 | 10 | -601.41 | -201.29 | -126.44 | 6.75 | 84.75 | 97.77 | 110.67 | 262.53 | 272.20 | 456.47 |
| Direct cost of prod per unit | 80.23 | 10 | 288.03 | 161.13 | 93.28 | 85.71 | 84.06 | 76.40 | 72.83 | 62.52 | 53.87 | 51.17 |
| Dir & ovhd cost of prod/unit | 101.44 | 10 | 342.96 | 175.78 | 124.44 | 103.34 | 102.09 | 100.79 | 99.02 | 78.01 | 74.50 | 59.24 |
| COP less govt & other income | 97.08 | 10 | 342.96 | 175.78 | 124.44 | 103.34 | 99.02 | 95.14 | 93.84 | 78.01 | 71.98 | 50.72 |
| Cost of prod with lbr & mgt | 133.71 | 10 | 448.59 | 189.22 | 153.77 | 143.48 | 135.87 | 131.56 | 99.71 | 98.41 | 84.79 | 54.15 |
| Machinery cost per acre | 251.59 | 10 | 471.44 | 366.88 | 366.88 | 308.41 | 259.79 | 243.39 | 234.49 | 234.49 | 219.24 | 43.31 |
| Est. labor hours per acre | 3.96 | 10 | 10.98 | 7.55 | 5.84 | 4.09 | 4.09 | 3.83 | 3.83 | 3.61 | 2.40 | 0.59 |

Hay, Mixed 2021; All Tenures

RankEm

Benchmark Report, 11 Enterprises

| | Group Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|------------------------------|-----------------|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Yield per acre (ton) | 5.10 | 11 | 2.87 | 3.97 | 4.12 | 5.05 | 5.10 | 5.18 | 5.26 | 5.50 | 8.73 | 8.73 |
| Value per unit | 141.00 | 11 | 100.00 | 100.00 | 125.00 | 125.00 | 125.00 | 141.00 | 150.00 | 150.00 | 150.00 | 150.00 |
| Total product value | 687.50 | 11 | 430.00 | 596.09 | 617.97 | 657.89 | 657.89 | 703.17 | 718.85 | 757.21 | 872.73 | 872.73 |
| Gross return | 691.51 | 11 | 430.00 | 596.09 | 617.97 | 657.89 | 657.89 | 705.18 | 718.85 | 757.21 | 872.73 | 872.73 |
| Fuel & oil | 26.83 | 11 | 43.21 | 43.21 | 34.53 | 27.59 | 27.59 | 24.82 | 20.49 | 10.95 | 10.95 | 10.24 |
| Repairs | 50.06 | 11 | 93.42 | 93.42 | 55.86 | 54.05 | 50.06 | 41.95 | 33.84 | 29.17 | 22.76 | 14.58 |
| Custom hire | 34.86 | 10 | 172.11 | 66.88 | 66.88 | 35.95 | 35.95 | 33.78 | 13.85 | 9.96 | 9.96 | 2.78 |
| Total direct expenses | 232.70 | 11 | 458.24 | 391.27 | 317.61 | 292.65 | 263.87 | 232.09 | 214.79 | 173.87 | 147.48 | 97.68 |
| Return over direct expenses | 481.45 | 11 | -28.24 | 278.48 | 394.03 | 403.18 | 458.82 | 482.74 | 487.37 | 571.37 | 580.08 | 659.53 |
| Hired labor | 18.55 | 11 | 114.78 | 114.78 | 78.51 | 28.00 | 28.00 | 16.17 | 9.27 | 0.00 | 0.00 | 0.00 |
| Farm insurance | 7.42 | 11 | 18.25 | 14.77 | 10.64 | 10.64 | 7.42 | 6.32 | 3.75 | 2.61 | 1.37 | 1.37 |
| Utilities | 2.94 | 11 | 9.10 | 8.75 | 7.78 | 7.78 | 2.94 | 2.02 | 0.55 | 0.00 | 0.00 | 0.00 |
| Machinery depreciation | 40.21 | 11 | 48.42 | 42.55 | 42.55 | 40.70 | 40.21 | 38.61 | 37.00 | 32.54 | 15.89 | 7.95 |
| Building depreciation | 4.68 | 11 | 28.58 | 12.87 | 6.35 | 6.35 | 4.69 | 4.68 | 2.14 | 2.13 | 2.13 | 1.07 |
| Miscellaneous | 4.84 | 10 | 7.57 | 5.39 | 5.39 | 5.13 | 5.13 | 4.54 | 3.37 | 3.37 | 1.46 | 0.73 |
| Total overhead expenses | 154.40 | 11 | 421.83 | 328.82 | 221.21 | 186.98 | 183.57 | 129.73 | 96.24 | 48.55 | 46.67 | 23.33 |
| Total dir & ovhd expenses | 398.36 | 11 | 714.48 | 504.90 | 487.51 | 476.30 | 418.46 | 392.73 | 340.94 | 318.89 | 312.42 | 278.92 |
| Net return | 300.39 | 11 | -74.90 | 158.24 | 219.61 | 242.55 | 255.15 | 302.40 | 345.48 | 378.97 | 385.22 | 438.33 |
| Government payments | 0.00 | 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.16 | 1.16 | 22.07 |
| Net return with govt pymts | 300.39 | 11 | -74.90 | 159.40 | 219.61 | 242.55 | 255.15 | 313.43 | 345.48 | 378.97 | 386.38 | 438.33 |
| Labor & management charge | 26.40 | 11 | 85.28 | 85.28 | 81.82 | 50.84 | 30.95 | 26.40 | 18.33 | 18.33 | 16.42 | 15.48 |
| Net return over lbr & mgt | 273.99 | 11 | -105.85 | 74.13 | 137.78 | 216.15 | 239.67 | 274.81 | 301.10 | 327.15 | 360.64 | 421.90 |
| Direct cost of prod per unit | 44.83 | 11 | 159.85 | 79.92 | 52.14 | 50.13 | 45.40 | 43.57 | 33.53 | 33.03 | 28.93 | 19.35 |
| Dir & ovhd cost of prod/unit | 81.87 | 11 | 176.13 | 96.69 | 93.42 | 85.79 | 82.08 | 76.12 | 63.17 | 59.36 | 55.86 | 53.00 |
| COP less govt & other income | 81.73 | 11 | 176.13 | 96.69 | 93.42 | 85.79 | 82.08 | 73.69 | 63.17 | 59.36 | 55.73 | 53.00 |
| Cost of prod with lbr & mgt | 87.26 | 11 | 186.93 | 116.56 | 98.60 | 91.51 | 89.69 | 81.07 | 66.42 | 65.50 | 62.84 | 56.48 |
| Machinery cost per acre | 134.68 | 11 | 239.98 | 228.10 | 228.10 | 146.94 | 146.94 | 134.10 | 133.51 | 129.82 | 95.96 | 67.71 |
| Est. labor hours per acre | 5.63 | 11 | 10.74 | 6.27 | 6.27 | 6.05 | 5.63 | 4.33 | 3.02 | 3.02 | 1.39 | 0.87 |

Rye Silage 2021; All Tenures

RankEm

Benchmark Report, 13 Enterprises

| | Group Median | Count | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|------------------------------|-----------------|-------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| Yield per acre (ton) | 4.29 | 13 | 3.13 | 4.00 | 4.00 | 4.00 | 4.14 | 5.00 | 5.86 | 6.00 | 8.00 | 8.00 |
| Value per unit | 110.00 | 13 | 40.00 | 40.00 | 100.00 | 100.00 | 100.00 | 110.00 | 110.00 | 110.00 | 120.00 | 120.00 |
| Total product value | 480.00 | 13 | 171.43 | 171.43 | 343.75 | 400.00 | 440.00 | 525.71 | 615.71 | 660.00 | 880.00 | 880.00 |
| Gross return | 480.00 | 13 | 171.43 | 171.43 | 343.75 | 400.00 | 440.00 | 525.71 | 615.71 | 660.00 | 880.00 | 880.00 |
| Seed and plants | 42.10 | 13 | 70.00 | 70.00 | 70.00 | 70.00 | 52.13 | 42.10 | 40.00 | 35.81 | 35.81 | 17.64 |
| Packaging and supplies | 6.34 | 12 | 14.34 | 14.34 | 8.92 | 8.92 | 6.96 | 5.71 | 5.19 | 5.19 | 4.22 | 4.22 |
| Fuel & oil | 17.56 | 13 | 32.64 | 32.64 | 22.15 | 22.15 | 18.95 | 17.56 | 8.38 | 7.25 | 7.25 | 6.26 |
| Repairs | 30.60 | 13 | 56.05 | 56.05 | 51.02 | 51.02 | 35.90 | 30.60 | 19.26 | 19.18 | 4.05 | 4.05 |
| Utilities | 4.84 | 11 | 11.52 | 11.52 | 5.69 | 5.69 | 4.84 | 4.62 | 4.40 | 4.30 | 4.30 | 2.63 |
| Operating interest | 1.24 | 13 | 9.12 | 9.12 | 3.43 | 3.43 | 2.20 | 1.04 | 0.68 | 0.53 | 0.13 | 0.13 |
| Total direct expenses | 271.42 | 13 | 456.39 | 386.26 | 384.81 | 353.76 | 343.25 | 262.53 | 218.90 | 179.29 | 179.29 | 137.98 |
| Return over direct expenses | 300.71 | 13 | -163.30 | -41.21 | 48.24 | 174.84 | 195.47 | 300.71 | 312.02 | 388.58 | 423.61 | 495.19 |
| Hired labor | 0.00 | 11 | 28.55 | 28.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Farm insurance | 3.73 | 13 | 13.62 | 13.62 | 11.07 | 11.07 | 8.48 | 3.73 | 2.71 | 0.98 | 0.98 | 0.78 |
| Utilities | 0.00 | 13 | 11.04 | 11.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Dues & professional fees | 3.04 | 13 | 5.11 | 5.11 | 4.35 | 4.35 | 3.88 | 3.04 | 2.83 | 1.67 | 0.55 | 0.55 |
| Machinery depreciation | 18.85 | 13 | 52.77 | 52.77 | 28.92 | 28.92 | 20.00 | 16.54 | 14.01 | 13.80 | 11.63 | 11.63 |
| Building depreciation | 4.61 | 13 | 13.42 | 13.42 | 5.35 | 5.35 | 5.29 | 4.61 | 3.56 | 1.52 | 1.52 | 1.22 |
| Miscellaneous | 4.77 | 13 | 5.87 | 5.87 | 5.29 | 5.29 | 4.97 | 4.77 | 3.57 | 2.93 | 2.77 | 2.77 |
| Total overhead expenses | 48.59 | 13 | 230.12 | 223.45 | 133.88 | 130.59 | 63.02 | 43.79 | 36.21 | 28.61 | 27.74 | 25.23 |
| Total dir & ovhd expenses | 390.75 | 13 | 519.41 | 494.87 | 465.32 | 447.83 | 431.22 | 389.14 | 321.57 | 227.88 | 207.90 | 165.72 |
| Net return | 178.03 | 13 | -293.90 | -271.33 | 9.25 | 135.85 | 158.44 | 180.97 | 262.11 | 281.01 | 360.59 | 432.17 |
| Government payments | 0.00 | 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.36 | 0.99 | 0.99 |
| Net return with govt pymts | 178.03 | 13 | -292.91 | -270.34 | 9.61 | 136.21 | 158.44 | 180.97 | 262.11 | 281.01 | 360.59 | 432.17 |
| Labor & management charge | 41.43 | 13 | 79.39 | 79.39 | 72.03 | 72.03 | 57.79 | 41.43 | 30.66 | 28.34 | 28.34 | 10.47 |
| Net return over lbr & mgt | 153.25 | 13 | -364.93 | -342.36 | -69.78 | 56.82 | 122.39 | 160.40 | 231.67 | 243.76 | 302.80 | 374.38 |
| Direct cost of prod per unit | 49.62 | 13 | 87.94 | 78.10 | 67.60 | 58.96 | 56.67 | 48.86 | 45.03 | 44.82 | 44.39 | 44.15 |
| Dir & ovhd cost of prod/unit | 66.04 | 13 | 108.58 | 103.31 | 97.69 | 82.48 | 70.63 | 65.48 | 60.07 | 55.98 | 53.03 | 51.98 |
| COP less govt & other income | 65.95 | 13 | 108.34 | 103.08 | 97.60 | 82.48 | 70.63 | 65.44 | 60.07 | 55.98 | 53.03 | 51.98 |
| Cost of prod with lbr & mgt | 73.18 | 13 | 125.15 | 119.88 | 117.45 | 89.38 | 82.30 | 72.67 | 67.06 | 63.20 | 59.06 | 56.38 |
| Machinery cost per acre | 126.19 | 13 | 241.16 | 241.16 | 212.29 | 212.29 | 159.02 | 126.19 | 90.95 | 78.36 | 78.36 | 72.01 |
| Est. labor hours per acre | 2.11 | 13 | 2.60 | 2.60 | 2.21 | 2.21 | 2.14 | 2.11 | 1.50 | 1.28 | 0.90 | 0.90 |

Appendix I

Dairy Enterprise Analysis Procedures and Measures

The Dairy Enterprise Analysis shows the profitability of each dairy enterprise including two or more farms.

Gross Margin includes product and livestock sales, cull sales, the value of offspring transferred out of the enterprise, the value of inventory change from beginning to end of year, and any other income assigned to the enterprise. Livestock purchases and the value of animals transferred in from other enterprises are subtracted.

Direct Expenses include expenses that are directly related to the specific livestock enterprise. Feed and most other direct expenses are directly assigned based on farm records. Some, such as Fuel and Oil and Repairs, which are difficult to assign directly to enterprises, are determined by allocating the total annual expense across all enterprises using allocation factors entered for each farm.

Overhead Expenses are also determined by allocating the total annual expense across all enterprises using allocation factors entered for each farm.

Net Return is the Gross Return minus Total Direct and Overhead Expenses.

Net Return over Labor and Management is calculated by allocating the farmer's charge for unpaid labor and management across all enterprises and subtracting it from Net Return. See page 15 for details on calculation of the value of labor and management.

Estimated Labor Hours is calculated by allocating the farmer's estimate of total operator and hired labor hours for the year across all enterprises. This includes both paid and unpaid labor.

Cost of Production is calculated by dividing the total expense for each category by Total Production. Cull sales, other offspring sales, and any other miscellaneous income are subtracted and replacement purchases and transfers into the enterprise are added to arrive at the cost *with Other Revenue Adjustments*.

Cost of Production with Labor and Management is the cost with other revenue adjustments plus the producer's charge for operators' labor and management. This is the break even price for the primary product to provide a return for operator labor and management.

The last section of each analysis contains both economic and technical efficiency measures.

Rounding of individual items for the report may have caused minor discrepancies with the calculated totals.