



managed grazing for dairy profits

Grazing Dairies: Production, Income & Expenses

Written by Jane Jewett, Minnesota Institute for Sustainable Agriculture

Grazing Dairies: What happens to milk production, income, and expenses?

These charts show data collected from seven grazing dairy farms in the study, “Testing Reduction of Dairy Financial Risk through Grazing and Insurance,” compared to benchmark data on all dairy farms in the AgFA database collected from 2015 and 2017.

Both the seven grazing dairies and the 2015-17 AgFA benchmark data sets feature AgFA analysis of farmer financial data from Schedule F tax forms.

CWT-EQ = farm income from all sources, divided by the average per-hundredweight milk price during the timeframe specified. Thus, CWT-EQ represents the farm’s total production of income-generating products, translated into the equivalent of CWT of milk.

For the expenses charts and graphics, Lines of the Schedule F were grouped together into eight categories of expenses. Expenses were calculated as \$/hundredweight-equivalent of milk (\$/CWT-EQ).

| | 7-farm grazing dairy average | 2015-17 AgFA benchmark data (731 farms) | Chart comparison: | | | | | | |
|-------------------------------|-------------------------------------|--|---|----------|-------------------------------|-------------------|---------|----------------|---------|
| Average total income per farm | \$540,695 | \$593,185 | <p>Average Total Income per Farm</p> <table border="1"> <tr> <th>Category</th> <th>Average Total Income per Farm</th> </tr> <tr> <td>7 grazing dairies</td> <td>540,695</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>593,185</td> </tr> </table> | Category | Average Total Income per Farm | 7 grazing dairies | 540,695 | AgFA 2015-2017 | 593,185 |
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| | 7-farm grazing dairy average | 2015-17 AgFA benchmark data (731 farms) | Chart comparison: | | | | | | |
|----------------------------------|-------------------------------------|--|---|----------|----------------------------------|-------------------|---------|----------------|---------|
| Average allocated costs per farm | \$491,709 | \$592,764 | <p>Average Allocated Costs per Farm</p> <table border="1"> <tr> <th>Category</th> <th>Average Allocated Costs per Farm</th> </tr> <tr> <td>7 grazing dairies</td> <td>491,709</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>592,764</td> </tr> </table> | Category | Average Allocated Costs per Farm | 7 grazing dairies | 491,709 | AgFA 2015-2017 | 592,764 |
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| | 7-farm grazing dairy average | 2015-17 AgFA benchmark data (731 farms) | Chart comparison: | | | | | | |
|--------------------------------|-------------------------------------|--|---|----------|---------------------------------|-------------------|-----|----------------|-----|
| Average number of cows in herd | 151 | 119 | <p>Average number of cows per farm</p> <table border="1"> <tr> <th>Category</th> <th>Average number of cows per farm</th> </tr> <tr> <td>7 grazing dairies</td> <td>151</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>119</td> </tr> </table> | Category | Average number of cows per farm | 7 grazing dairies | 151 | AgFA 2015-2017 | 119 |
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| | 7-farm grazing dairy average | 2015-17 AgFA benchmark data (731 farms) | Chart comparison: | | | | | | |
|--|------------------------------|---|---|----------|-------------------|-------------------|--------|----------------|--------|
| Actual milk production per cow | 15,058 | 23,364 | <p>Actual Milk Production Per Cow (lbs.)</p> <table border="1"> <tr> <th>Category</th> <th>Production (lbs.)</th> </tr> <tr> <td>7 grazing dairies</td> <td>15,058</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>23,364</td> </tr> </table> | Category | Production (lbs.) | 7 grazing dairies | 15,058 | AgFA 2015-2017 | 23,364 |
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| 7 grazing dairies | 15,058 | | | | | | | | |
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| CWT EQ production [calculated as CWT EQ x 100] | 27,365 | 36,128 | <p>CWT EQ calculated production per cow (lbs.)</p> <table border="1"> <tr> <th>Category</th> <th>Production (lbs.)</th> </tr> <tr> <td>7 grazing dairies</td> <td>27,365</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>36,128</td> </tr> </table> | Category | Production (lbs.) | 7 grazing dairies | 27,365 | AgFA 2015-2017 | 36,128 |
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| | 7-farm grazing dairy average | 2015-17 AgFA benchmark data (731 farms) | Chart comparison: | | | | | | |
|--|------------------------------|---|--|----------|-------------------------|-------------------|----------|----------------|----------|
| Net Farm Income (Total Farm Income – Total Allocated Costs) | \$80,485 | \$42,371 | <p>Average Net Farm Income: Total Farm Income - Total Allocated Costs</p> <table border="1"> <tr> <th>Category</th> <th>Net Farm Income</th> </tr> <tr> <td>7 grazing dairies</td> <td>\$80,485</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>\$42,371</td> </tr> </table> | Category | Net Farm Income | 7 grazing dairies | \$80,485 | AgFA 2015-2017 | \$42,371 |
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| 7 grazing dairies | \$80,485 | | | | | | | | |
| AgFA 2015-2017 | \$42,371 | | | | | | | | |
| Net farm income per cow | \$533 | \$356 | <p>Net farm income per cow</p> <table border="1"> <tr> <th>Category</th> <th>Net Farm Income per Cow</th> </tr> <tr> <td>7 grazing dairies</td> <td>\$533</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>\$356</td> </tr> </table> | Category | Net Farm Income per Cow | 7 grazing dairies | \$533 | AgFA 2015-2017 | \$356 |
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| | 7-farm grazing dairy average | 2015-17 AgFA benchmark data (731 farms) | Chart comparison: | | | | | | |
|---|-------------------------------------|--|--|----------|-------|-------------------|--------|----------------|--------|
| Net farm income per actual CWT (Net farm income/ (actual CWT/cow x 151 cows)) | \$3.54 | \$1.52 | <p>Net farm income per actual CWT</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>7 grazing dairies</td> <td>\$3.54</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>\$1.52</td> </tr> </tbody> </table> | Category | Value | 7 grazing dairies | \$3.54 | AgFA 2015-2017 | \$1.52 |
| Category | Value | | | | | | | | |
| 7 grazing dairies | \$3.54 | | | | | | | | |
| AgFA 2015-2017 | \$1.52 | | | | | | | | |
| Net farm income per CWT EQ (Net farm income / CWT EQ) | \$1.95 | \$0.99 | <p>Net farm income per CWT EQ</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>7 grazing dairies</td> <td>\$1.95</td> </tr> <tr> <td>AgFA 2015-2017</td> <td>\$0.99</td> </tr> </tbody> </table> | Category | Value | 7 grazing dairies | \$1.95 | AgFA 2015-2017 | \$0.99 |
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| Table 1. Clustering of Schedule F expense lines into eight (8) categories | |
|---|---|
| Expense Category | Schedule F line |
| Crops | 13 – chemicals |
| | 19 – fertilizers & lime |
| | 28 – seeds & plants purchased |
| Energy | 21 – gasoline, fuel, oil |
| | 32 – utilities |
| Equipment | 12 – car & truck expenses |
| | (16 – 16a) – non-livestock depreciation |
| | 26a – rent or lease equipment |
| | 27 – repairs & maintenance |
| Feed | 18 – feed purchased |
| Labor | 15 – custom hire |
| | 17 – employee benefit programs |
| | 20 – freight & trucking |
| | 24 – labor hired |
| | 25 – pension & profit sharing |
| Cow Health | 16a – livestock depreciation |
| | 33 – veterinary/breeding/medicine |
| Miscellaneous | 14 – conservation expenses |
| | 26b – rent or lease other |
| | 29 – storage & warehousing |
| | 30 – supplies |
| | 34 – other expenses |
| Overhead | 22 – insurance (other than health) |
| | 23a – mortgage interest |
| | 23b – other interest |
| | 31 – taxes |

Table 2. Expense cluster totals for 7 grazing dairy farms in 2017, and all dairy farms in the AgFA database, 2015-2017.

| Expense Cluster | 7 grazing dairy farms, 2017 | All AgFA dairy farms, 2015-2017 |
|-----------------|-----------------------------|---------------------------------|
| | ----- \$/cwt-eq ----- | |
| Crops | 0.80 | 1.57 |
| Energy | 1.09 | 0.88 |
| Equipment | 2.89 | 3.11 |
| Feed | 5.00 | 3.86 |
| Labor | 4.00 | 2.59 |
| Cow Health | 0.39 | 0.88 |
| Miscellaneous | 1.99 | 2.25 |
| Overhead | 1.81 | 1.14 |
| TOTAL | \$17.96 | \$16.41 |

\$/cwt-eq = Dollars of expense divided by hundredweight-equivalents (cwt-eq) of farm products sold. CWT-EQ is a calculation of farm income from all sources, converted into CWT of milk at the average milk sale price per CWT for the specified time period.

Figure 1: Radar diagram showing expense pattern for the seven grazing dairy farms (2017 data) overlaid with expense pattern for all dairy farms in AgFA database (2015-2017 data).

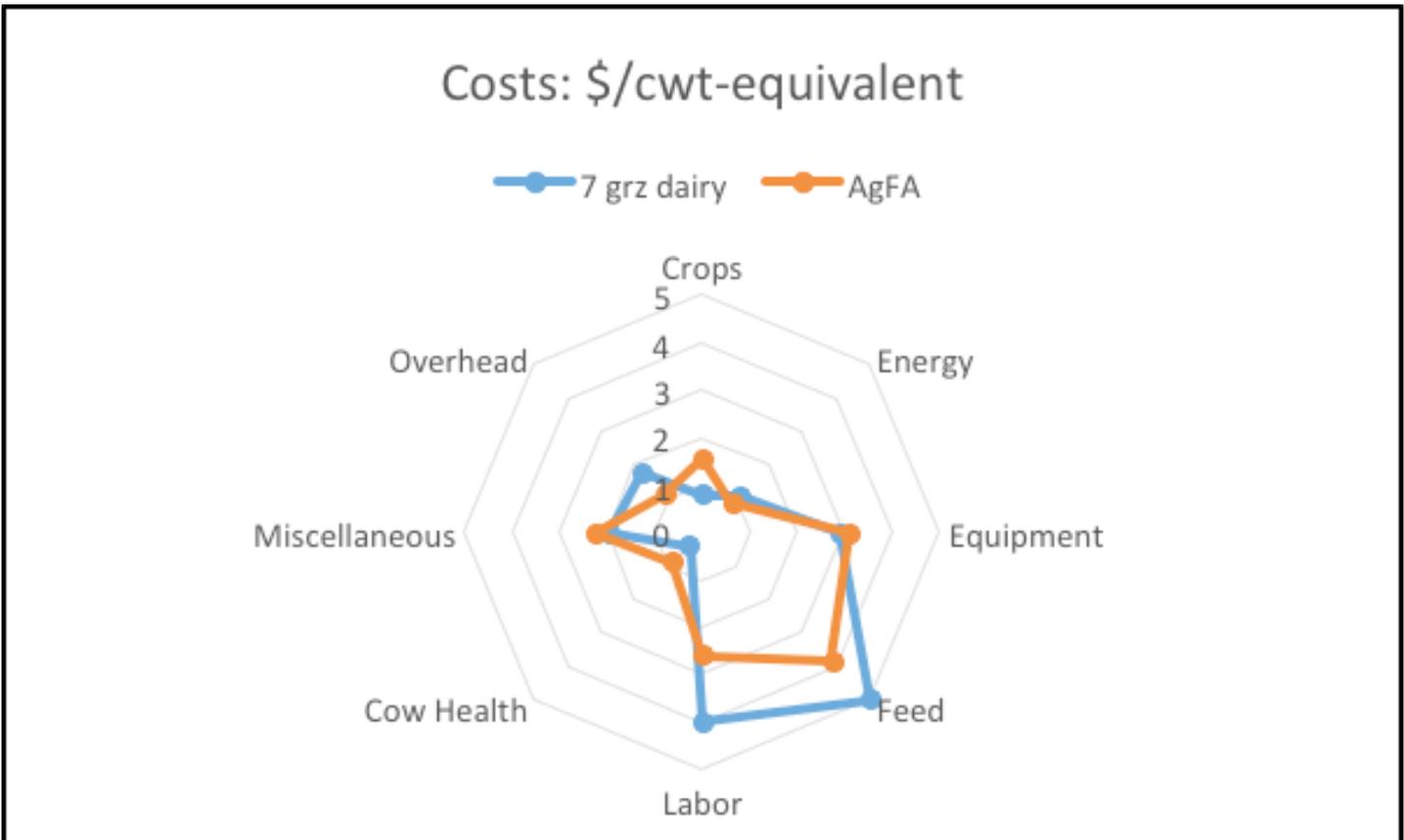


Figure 2: Flower diagram of expense clusters on seven dairy grazing farms (2017 data). The full length of a radial line out from the center = \$5.00/cwt-eq. Numeric data for this diagram is shown in Table 2.

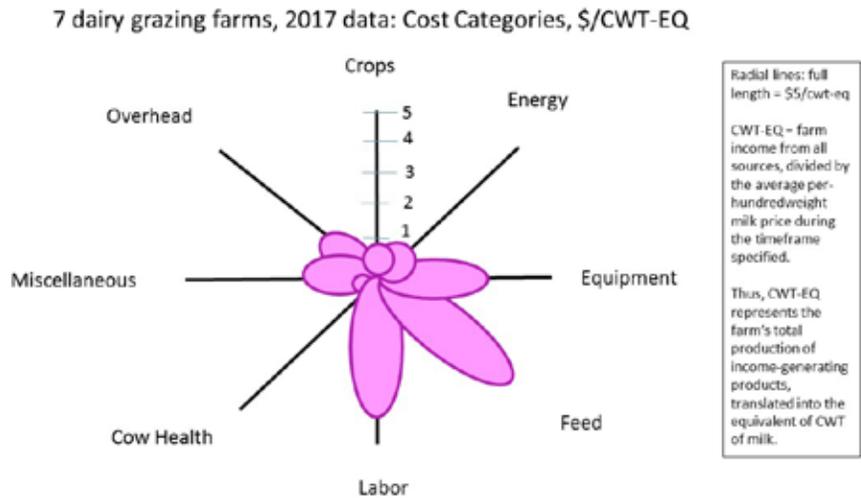
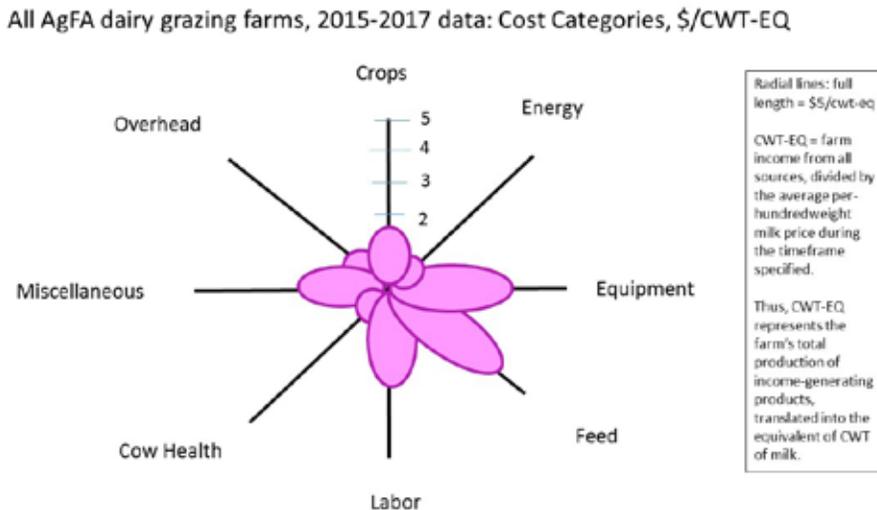


Figure 3: Flower diagram of expense clusters on all dairy farms in the AgFA database (2015-2017 data). The full length of a radial line out from the center = \$5.00/cwt-eq. Numeric data for this diagram is shown in Table 2.



This project was conducted by members of the Midwest Perennial Forage Working Group of Green Lands Blue Waters, with funding from USDA-Risk Management Agency.

