

# The Financial Performance of Grazing, Organic and Confinement Dairy Farms

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## Introduction

Ten Land Grant Universities plus Ontario standardized accounting rules and data collection procedures to gather, pool, summarize and analyze actual farm financial performance from many sustainable, small farming systems which currently lack credible financial data that producers need for decision-making, in a project initially sponsored by USDA IFAFS grant project #00-52501-9708 (Kriegl et al. 2007).

Spawned by the USDA IFAFS grant, this effort primarily compares Wisconsin organic dairy farm data to grazing and confinement data. However, the Wisconsin data was also compared to the limited amount of organic data collected in other parts of North America.

This project has over 163 farm years of Wisconsin organic dairy farm data spanning fifteen years and many more years of data from other Wisconsin dairy systems to help understand the financial performance of organic dairy farming. The organic farms included in this study were receiving the organic price for their milk.

## Data from organic dairy farms are scarce.

Actual farm financial data from organic dairy farms is still scarce but increasing. Much of the Wisconsin organic data was collected by the Fox Valley and Lakeshore Farm Management Associations, and Wisconsin Farm and Business Management Inc. Some was collected directly by the author. Because of the scarcity of the organic data in any single year, this analysis and comparison of Wisconsin certified market organic dairy farm financial performance with other systems focuses on a fifteen year average for each group. None of the summarized groups were random.

The number of grazing herds in the annual summaries declined substantially since 2005 because several of the grazing farms that submitted data for several years became certified organic. Beginning 1995, at least one of the graziers in the data was transitioning to organic, which likely slightly reduced the financial performance of that herd. Grazing data since 1999, also included a few grazing farms that were receiving organic milk prices. Until 2009, the presence of these organic farms had minimal impact on the grazing group's average NFIFO, but the different cost structure began to show in 2006. Therefore, beginning with the 2006 data, the summarized Wisconsin grazing cost of production report does not include any herds receiving organic milk prices.

The Wisconsin organic data includes organic farms that seriously practice management intensive rotational grazing (MIRG) along with farms that grazed only enough to meet organic certification standards. From 1999 to 2004, more than half of the farm years of organic data in the first five years were from farms that were only meeting minimum grazing standards. As of June 17<sup>th</sup>, 2010, by definition all certified organic dairy farms in the U.S. practice MIRG.

## Comparing Financial Performance

Because many non-organic farmers have asked how the financial performance of organic farming compares with non-organic systems, a fifteen year simple average cost of production summary was compiled for Wisconsin organic, grazing and confinement herds.

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Several measures should be examined when analyzing financial performance and economic competitiveness because no single measure tells the whole story. However one usually is limited to just a few measures to explain the results. The primary measure used for illustrating in this report is net farm income from operations (NFIFO) as a percent of farm income or revenue based on accrual adjusted income and expenses. A similar measure is used in the non-agricultural business world.

The use of this measure is driven mainly by two factors. The organic milk price was usually much higher than the milk price received by confinement and grazing herds. The pounds of milk sold per cow by grazing and organic herds was 28% and 35% less, respectively, than for confinement herds.

Table 1 shows the range in annual observation numbers, herd size, NFIFO/\$ income and fifteen-year simple average NFIFO/\$ income for organic, grazing, small confinement, large confinement (more than 250 cows/herd), and the average Wisconsin confinement group.

**Table 1**

	Farm # Range	Avg. Herd Size Range	NFIFO/\$ Income	Range
Non-Organic Graziers	9-43	61-90.4	23.54%	16.13-31.87%
Organic	6-17	48-80.1	21.26%	13.53-26.26%
51-75 Cow Confinement	76-217	62-63.45	18.88%	8.56-27.34%
All Confinement	365-721	110-196.7	11.00%	(4.92)-17.50%
Large Confinement	52-79	463-624	7.36%	(8.84)-13.87%

### Observations

- By most measures, organic was usually the high total and allocated cost producers usually followed by large confinement, then small confinement with graziers being the lowest cost producers in most measures most years. Allocated costs are all costs, except the opportunity cost of unpaid labor, management, and equity. Allocated costs can also be defined as total income minus NFIFO.
- Still, organic had second highest 15-year simple average NFIFO/\$ income and highest 15-year simple average NFIFO/Cow. Graziers had the highest 15-year simple average NFIFO/\$ income and second highest 12 year simple average NFIFO/Cow, followed by small and then large confinement.
- Organic annual average price premiums ranged from \$2.70 to \$13.02/hundredweight (cwt.) vs. non-organic. The largest premium occurred in 2009. The average price premium from 1999 to 2004 was \$4.69 and \$9.49 from 2005 to 2013. The average organic herd needed a price premium of about \$5.00/CWT sold to offset their higher cost of production.
- High production doesn't guarantee profitability. Low production is even less of a guarantee of profitability. Wisconsin grazing and organic dairy farms sell less milk per cow than do Wisconsin confinement herds. The pounds of milk sold per cow have been increasing more in the confinement systems than in the grazing and organic systems. The pounds of milk sold per cow in the organic system may even be declining, which could influence the relative profitability of the systems in the future.
- Less experienced organic dairy farms than those sharing financial data may not perform as well.
- Data is scarce from any organic group especially from transitional organic.

- Organic has been most competitive when the non-organic price was low.
- Grazing probably “helped” the economic performance of the organic system more than vice versa.
- If already practicing organic but not certified – go for the reward
- If far from organic practices, the 3-5 year transition can be challenging.
- Organic dairy farms in transition appeared to be competitive with non-organic dairy farms in an older Quebec study (Paillat, Allard, and Pellerin 1996).
- In 2004, organic dairy farms in a New England study (Dalton et al. 2008) were not as competitive as:
  - Non-organic New England dairy farms;
  - Any Wisconsin dairy system.
- Since 2005, organic dairy farms in New England data have become more competitive with other dairy systems due to increased price premiums but not on par with Wisconsin grazing or organic dairy farm systems. (Dalton et al. 2008).
- Feed costs were much higher for New England farms – especially for those which are organic than most other states (Dalton et al. 2008).
- Minnesota organic dairy economic performance appears similar to Wisconsin from 2005 to 2010 (Nordquist, Moynihan, and Dvergsten 2013).
- Use caution when comparing one dairy system from one state to other dairy systems in other states.
- There are large consistent differences in NFIFO/\$ income between many states and systems. (Kriegl et al. 2007).
- Graziers typically attain more NFIFO/\$ income than other dairy systems in their states. (Kriegl 2012)
- Wisconsin dairy systems typically attain more NFIFO/\$ revenue than similar dairy systems in other states (Kriegl et al. 2007).
- Small dairy systems typically attain more NFIFO/\$ revenue than large dairy systems in the same state (Kriegl et al. 2007).
- The largest farms tend to generate more dollars of total NFIFO per farm and per owner compared to the smallest farms.
- This economic dairy data indicates that the economies of scale (lowest cost of production per unit) occur at a much smaller size than people expect (somewhat less than 100 cows per farm) (Kriegl et al. 2007).
- Large confinement systems rely much more on hired labor than the other three systems. This explains part but not all of the difference in their NFIFO/\$ revenue (Kriegl et al. 2007).
- The ranking of financial performance by state is very different from the official USDA cost of production estimate ranking which relies very heavily on opportunity cost (Kriegl et al. 2007).
- Family size farms (the size that can be operated mainly by family labor) are fairly similar across states in terms of the total NFIFO they generate. However, the sizes of family size farms in this data are quite different from state-to-state.
- Organic, graziers, and large confinement systems indicated more satisfaction than small confinement and non-intensive graziers in a University of Wisconsin study. (Lloyd et al. 2007)

## *References*

- Dalton, Timothy J., Robert Parsons, Richard Kersbergen, Glenn Rogers, Dennis Kauppila, Lisa McCrory, Lisa A. Bragg, and Qingbin Wang. 2008. "A Comparative Analysis of Organic Dairy Farms in Maine and Vermont: Farm Financial Information from 2004 to 2006." In *Bulletin 851, Maine Agricultural and Forest Experiment Station*. Orono, ME: The University of Maine, July.
- Kriegl, Thomas S., Jim Endress, Robert Tigner, Larry Tranel, Ralph Booker, Ed Heckman, Bill Bivens, Sherrill Nott, Phil Taylor, Chris Wolf, Margot Rudstrom, Tony Rickard, Jim Grace, Thomas Noyes, Clif Little, Jack Kyle, John Molenhuis, J. Craig Williams, and Gary Frank. 2007. Dairy Grazing Farms Financial Summary: Regional/Multi-State Interpretation of Small Farm Data, Sixth Year Report. Madison, WI: University of Wisconsin-Madison Center for Dairy Profitability, Great Lakes Grazing Network. <http://cdp.wisc.edu/pdf/GLGN%20USDA%202005%20ReportD.pdf>
- Kriegl, Thomas S. "The Financial Performance of Dairy Systems across the U.S.A." Paper presented at the 5th National GLCI Conference, Orlando, Florida, December 9-12.
- Lloyd, Sarah, Michael Bell, Tom Kriegl, and Steve Stevenson. 2007. *Milking more than profit: Life satisfaction on Wisconsin dairy farms*. Madison: University of Wisconsin-Madison Center for Integrated Agricultural Systems, August.
- Paillat, N., G. Allard, and D. Pellerin. 1996. "Productivity and Profitability of Organic Dairy Farms in Quebec." Poster presented at Universite Laval, Quebec, 1996.
- Nordquist, Dale, Meg Moynihan, and Ron Dvergsten. 2013. *2012 Organic Farm Performance in Minnesota*. St. Paul, MN: Minnesota Department of Agriculture.