

Comparing Feed Costs of Wisconsin Grazing, Confinement and Organic Farms from 1999 to 2014

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INTRODUCTION

There is a perception that U.S. Agricultural input costs rose slowly and steadily through 2006 before taking a big jump to a new plateau starting in 2007 due to major increases in the prices of inputs directly related to energy costs. The author often refers to this as the “ethanol effect.” This jolt caused dairy farmers — especially grazing and organic farms — to question if it pays to feed grain to dairy cows. (Based on the evidence the author is aware of, rarely will no grain will be more profitable than feeding some grain).

Another, longer-term perception among dairy graziers is that their feed costs are substantially lower than those for confinement herds. There is also the belief that the “grazing advantage” increased with the 2006-2007 grain price jolt.

Grain prices weakened in 2013 and are expected to remain between the average from 2007 to 2012 and 2000 to 2006 for at least a few years. Will this disadvantage graziers?

Are these perceptions supported by evidence? In an attempt to find out, data was analyzed from Wisconsin confinement and grazing herds, from 1995 through 2014 and organic farms from 1999 to 2014 on a hundredweight (cwt.)-sold basis.

SOURCES OF DATA AND METHODS

This study used the Wisconsin Agricultural Financial Advisor (AgFA) data set. AgFA is a sample of Wisconsin dairy farms from which financial and production data are collected annually. Data were originally collected by a number of providers: Lakeshore and Fox Valley Farm Management Association, Wisconsin Farm and Business Management Inc., other independent consultants, UW-Extension agricultural agents, Wisconsin Technical College System instructors and Center for Dairy Profitability staff. Personnel affiliated with these associations helped individual farm managers reconcile their financial data.

The grazing data included 7 to 41 observations per year (total of 357 farm years of data) from 1995 to 2014. Until 2006, a few organic graziers were included in the grazing group, but they represented 25% of the grazing herds in 2004 and 2005, and less than 14% in any previous year. The annual average grazing herd size ranged from 50 to 90 cows. The organic herd summaries ranged from 6 to 17 herds with an annual average herd size of 48 to 80 cows (total of 174 farm years of data). Not all organic herds were intensive graziers. The first organic summary was produced in 1999. The average confinement herd summaries ranged from 304 to 928 farms per year, with annual average herd size ranging from 76 to 204 cows from 1995 to 2014.

AgFA categorizes expenses much like they are categorized on Federal Tax Schedule F. Since many Wisconsin dairy farms attempt to raise most of their feed and since few farms do enterprise accounting, the routine AgFA summaries don’t attempt to provide a total feed cost number. However, one can do a reasonable job of estimating feed costs for Wisconsin dairy farms from the AgFA data using the following steps.

Purchased feed cost was figured first. Next came direct feed raising costs, which include chemicals, custom machine work, fertilizer and lime, gas, fuel and oil, seeds, plants and an “other crop expense” category. Finally, indirect feed raising costs were estimated by taking half of the expenses for interest, non-livestock depreciation, paid labor compensation, rent and repairs. Combined, these costs are called “estimated feed costs.” No opportunity costs were included in this calculation.

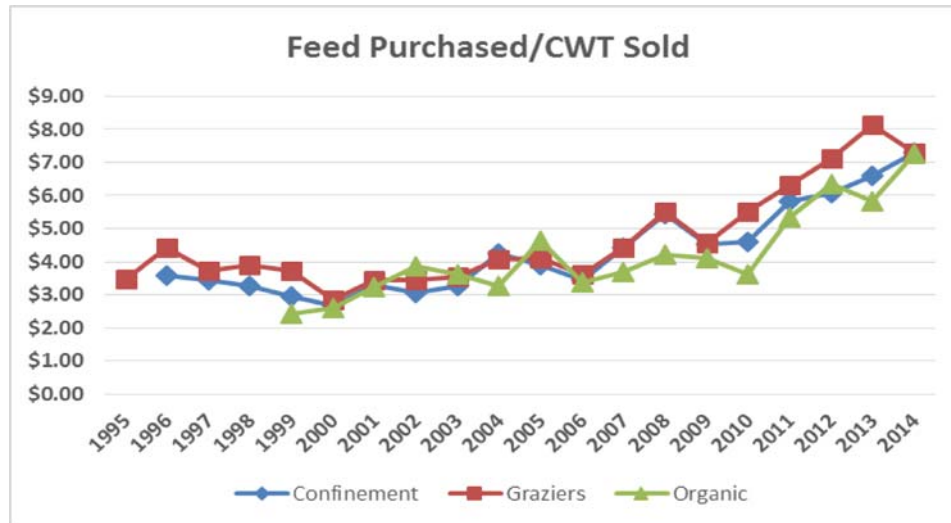
Net Farm Income from Operations (NFIFO) was also calculated by subtracting from gross income all costs, with the exceptions of family labor and management (both paid and unpaid), along with equity capital. NFIFO thus represents the return to equity and family labor and management.

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SUMMARIZED OBSERVATIONS

See table 1- Graziers usually had the highest purchased feed cost per CWT sold because unlike the other systems, graziers tend not to grow grain. Still, purchased feed costs increased for all groups.

Table 1



See table 2- Graziers usually had the lowest direct feed raising cost per CWT sold because unlike the other systems, graziers tend not to grow grain. Direct feed raising cost increased for all groups.

See table 3- There was less variability in the indirect feed raising cost category from year to year, and maybe a slight up trend for grazing and confinement. This shouldn't be a surprise, as this cost category is dominated by fixed costs of land, buildings, and equipment. This cost trended up after 2002 for organic herds.

See table 3- Graziers' largest economic advantage in estimated feed costs came from the indirect feed-raising expenses. Graziers' costs for depreciation, paid labor, interest and repairs were well below those for the confinement group which was always lower than the organic herds.

See table 4- Estimated feed costs/cwt sold were always highest for organic herds and usually lowest (not by much) for grazing herds with confinement in between. Estimated feed costs/cwt sold trended upward throughout the period for all groups.

See table 4- As perceived, estimated feed costs/cwt sold increased noticeably from 2006 to 2007, and except for 2009 kept increasing. This suggests a new and higher plateau for feed costs beginning in 2007. With a weakening of the "ethanol effect" in 2013, another new plateau may form at a level between the plateaus that existed before and after 2007.

See tables 4 and 5- The data suggests that the changes in input costs from 2006 to 2014 may not favor either system (based on FIFO per cwt sold). The 16-year average estimated feed cost per hundredweight sold was \$14.47 for graziers, \$15.91 for confinement, and \$15.42 for organic. In 1999, the estimated feed cost of confinement and organic herds was 19% and 10% higher respectively compared to graziers. In 2014, the estimated feed cost of confinement and organic herds was 10% and 26% higher respectively than graziers. The feed cost number is probably higher than what many graziers might have believed. Pounds of milk sold per cow appears to play a large role in this outcome: Since 1999, the average milk sold per cow increased by about 4,305 lbs. for the confinement group, about 1,700 lbs. for graziers, and about 400 lbs. for organic herds. High production doesn't guarantee profitability, but low production is even less of a guarantee.

Table 2

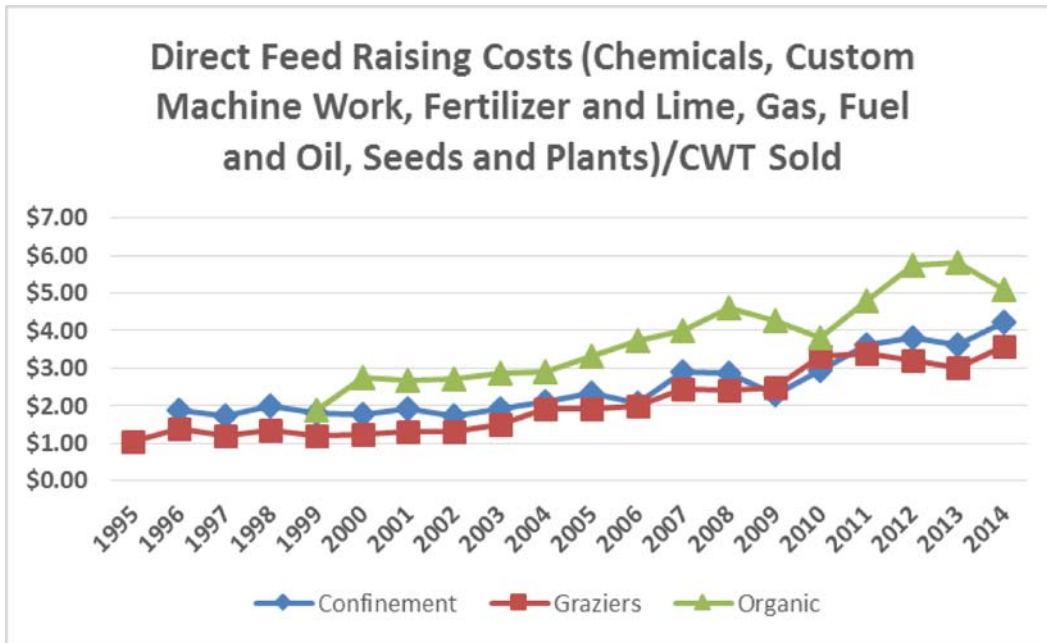


Table 3

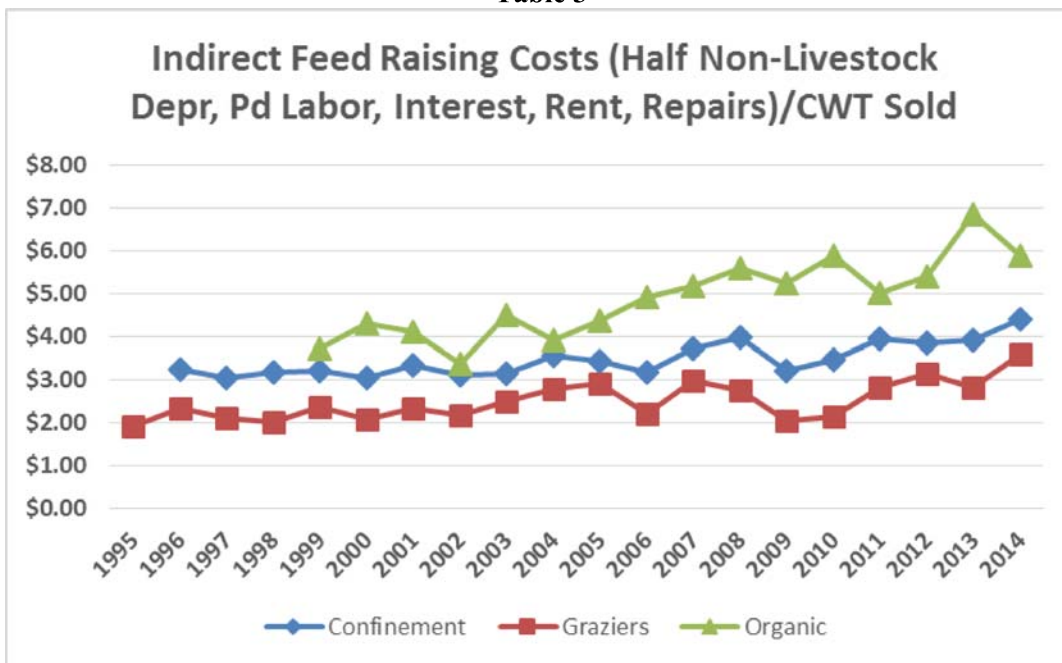
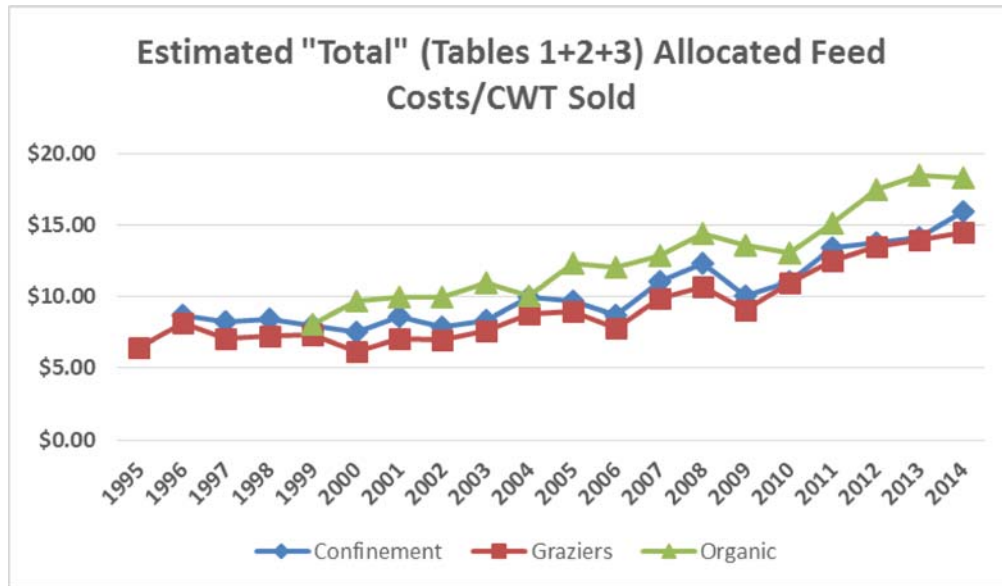


Table 4



See table 5- The NFIFO performances of the three systems moved largely in tandem, indicating that many external factors (weather, milk prices) influencing profitability have similar effects on each dairy system in most years.

See table 5- In terms of NFIFO per cwt sold, organic had an 8 year average advantage of \$0.77 over graziers and \$3.11 over confinement herds from 1999-2006 and an 8 year average advantage of \$1.67 over graziers and \$4.29 over confinement herds from 2007-2014. This suggests that the organic price premium more than offset organic feed price increases. Grazier's advantage over confinement increased from \$2.34 in 1999-2006 to \$2.62 in 2007-2014.

See table 5- Non-organic graziers have fallen behind small confinement herds in NFIFO/cow since 2010, mainly because the small Wisconsin confinement herds were able to offset most of their purchased feed costs with the sale of small amounts of high priced feed that they raised. This peaked in 2012 and is declining with grain prices. Otherwise, the dramatic change in feed prices did not make long term changes in the profitability relationships between the dairy systems.

See table 5-As important as feed costs are, they don't totally determine profit levels. In 2007 and 2008, each of the dairy systems experienced record high feed costs and NFIFO per cwt. That happened again in 2014.

Table 5

